

**THE DEVELOPMENT, IMPLEMENTATION AND EVALUATION OF A
LOCUS OF CONTROL-BASED TRAINING PROGRAMME FOR HIV
AND AIDS RISK REDUCTION AMONG UNIVERSITY STUDENTS**

CALVIN GWANDURE

Submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy in Psychology

in the

Faculty of Health Sciences

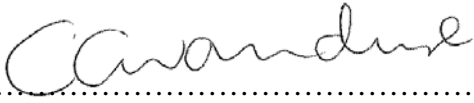
at the

Nelson Mandela Metropolitan University

January 2010

DECLARATION

I hereby declare that this thesis is my own unaided work. It is submitted for the degree of Doctor of Philosophy at Nelson Mandela Metropolitan University. It has not been submitted before for any other degree or examination at any other university.


.....

Calvin Gwandure

6 January 2010

ABSTRACT

There is an escalation of HIV and AIDS among the youth in South Africa and other developing countries. Research on HIV and AIDS risk factors has tended to focus more on poverty, gender, race, illiteracy, and violence than personality factors that could influence an individual's health-protective behaviour. Previous studies have also shown that wealth, education, race, and gender may not make an individual more or less vulnerable to HIV infection. This study argued that locus of control could influence an individual's health-protective behaviour and that external locus of control could be a risk factor in HIV and AIDS risk reduction. The aim of this study was to investigate the efficacy of a locus of control-based training programme in reducing HIV and AIDS risk among university students. The locus of control-based variables that formed the training programme for HIV and AIDS risk reduction among university students were: social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation. These locus of control-based variables were regarded as contexts in which individuals could exhibit health risk behaviours. A sample of 257 first-year university students participated in the study. There were (N = 170) female participants and (N = 87) male participants drawn from the University of the Witwatersrand. The study was a pretest-posttest repeated measures design. Data were analysed using *t* tests, correlations, multiple regression, structural equation modelling, and repeated measures tests. The results of this study showed significant differences in health risks between participants with an external locus of control and participants with an internal locus of control. There was a significant relationship between locus of control-based variables and HIV and AIDS risk. The locus of control-based training programme significantly modified personality and significantly reduced locus of control-based health risks and HIV and AIDS risk. Directions for future research on locus of control, health risks, and HIV and AIDS risk could focus on the development and implementation of various locus of control-based training programmes in South Africa. Locus of control should be targeted as a health risk factor in HIV and AIDS risk reduction training programmes.

Key Words: locus of control-based training programme, HIV and AIDS risk, health risk reduction, South Africa

ACKNOWLEDGEMENTS

I would like to thank Professor Thokozile Mayekiso, my Promoter, for her advice and support throughout the study. I am grateful to Doctor Diane Elkonin, my Co-Supervisor, for her guidance. I wish to express my sincere appreciation to staff in the Office of Residence Life for assisting me to access my sample. I really appreciate the effort and willingness of the participants to complete this study. My sincere appreciation goes to the statisticians who helped me with data analysis at the University of the Witwatersrand. These are: Adiel Chikobvu (Epidemiology and Biostatistics Division, Clinical HIV Research Unit, Wits Health Consortium, University of the Witwatersrand), Charles Chimedza (School of Statistics and Actuarial Science, University of the Witwatersrand) and Dr. Gregory Lee (School of Economic and Business Sciences, University of the Witwatersrand). I would like to make special mention of the fact that had it not been for the encouragement I got from my family this project might not have succeeded. Ruth, my wife, assisted me a lot.

TABLE OF CONTENTS

	PAGE
Declaration	ii
Acknowledgements	iii
Abstract	iv
List of tables	xii
List of figures	xiv
CHAPTER 1: BACKGROUND TO THE STUDY	1
1.1 Introduction	1
1.2 Rationale for the study	3
1.3 Aims of the study	4
1.4 Research Questions	5
1.5 Hypothesis	5
1.6 Structure of the thesis	5
CHAPTER 2: THEORETICAL PARADIGM	7
2.1 Introduction	7
2.2 The general principles of Rotter` s social learning theory of personality	7
2.3 Basic concepts used to explain human behaviour in social learning theory	16
2.3.1 Behaviour potential	16
2.3.2 Expectancy	17
2.3.3 Reinforcement value	17
2.3.4 The psychological situation	18
2.3.5 Psychological needs in social learning theory	19
2.3.6 Freedom of movement	20
2.3.7 Minimal goal levels	20
2.3.8 The significance of language in social learning theory	21

2.3.9	Generalised expectancies and problem solving skills	22
2.4	Conclusion	22
CHAPTER 3: LITERATURE REVIEW		24
3.1	Introduction	24
3.2	Definition of locus of control	24
3.3	Modification of locus of control through experience and training	25
3.4	Social systems control and mastery over the environment	29
3.4.1	Definitions of social systems control and mastery over the environment	29
3.4.2	Social systems control and information seeking behaviour	30
3.4.3	Social systems control and personal power	31
3.4.4	Social systems control, political affiliation and involvement	32
3.4.5	Social system control, civil rights and social change	32
3.4.6	Social systems control and social class	33
3.4.7	Social systems control and race	34
3.4.8	Social systems control and gender	36
3.4.9	Social systems control health risk reduction training	38
3.5	Self-control	41
3.5.1	Definition of self-control	41
3.5.2	Self-control and reaction to threat	43
3.5.3	Self-control and susceptibility to influence	48
3.5.4	Self-control, interpersonal trust and gullibility	50
3.5.5	Self-control and attitude change	51
3.5.6	Self-control and morally relevant behaviour	53
3.5.7	Self-control and personal effectiveness	55
3.5.8	Self-control health risk reduction training	58
3.6	Fatalism and health	60
3.6.1	Definition of fatalism	60
3.6.2	Human performance under skill and chance conditions	61

3.6.3	Fatalism and extrasensory perception in health control	63
3.6.4	Fatalism, disease prevention and traditional healing practices in South Africa	65
3.6.5	Fatalism and health risks	71
3.6.6	Fatalism health risk reduction training	74
3.7	Achievement-oriented behaviour	76
3.7.1	Definition of achievement-oriented behaviour	76
3.7.2	Achievement-oriented behaviour as goal directed behaviour	77
3.7.3	Achievement-oriented behaviour in a social context	78
3.7.4	Achievement-oriented behaviour and beliefs about control of reinforcement	83
3.7.5	Achievement-oriented behaviour and academic achievement	83
3.7.6	Race, ethnicity, culture and achievement-oriented behaviours	84
3.7.7	Achievement-oriented behaviour and health promotion	88
3.7.8	Achievement-oriented behaviour health risk reduction training	90
3.8	Deferment of gratification	93
3.8.1	Definition of deferment of gratification	93
3.8.2	Deferment of gratification and expectancy	94
3.8.3	Deferment of gratification and temptation	96
3.8.4	Deferment of gratification and psychopathology	97
3.8.5	Deferment of gratification among the youth	99
3.8.6	Deferment of gratification and task persistence	103
3.8.7	Deferment of gratification, social class, and ethnicity	104
3.8.8	Deferment of gratification and future orientation	107
3.8.9	Deferment of gratification and health	108
3.8.10	Deferment of gratification health risk reduction training	108
3.9	Personal values and expectancies	110
3.9.1	Definitions of personal values and expectancies	110
3.9.2	Achievement and success as value orientations	110
3.9.3	Expectancies and health behaviour	112
3.9.4	Level of aspiration and health promotion	112
3.9.5	Personal values and expectancies health risk reduction training	114
3.10	Social alienation	115

3.10.1	Definition of social alienation	115
3.10.2	Social alienation and powerlessness	116
3.10.3	Social alienation and meaninglessness	118
3.10.4	Social alienation and normlessness	119
3.10.5	Social alienation and isolation	120
3.10.6	Social alienation and self-estrangement	121
3.10.7	Social alienation and student integration in university	122
3.10.8	Social alienation and health risks	123
3.10.9	Social alienation health risk reduction training	124
3.11	HIV and AIDS risk among the youth in South Africa	125
3.11.1	Definition of HIV and AIDS risk	125
3.11.2	High prevalence of HIV and AIDS among the youth in South Africa	126
3.11.3	Training models used to reduce HIV and AIDS risk among the youth	127
3.11.4	HIV and AIDS risk factors among the youth in South Africa	130
3.11.4.1	Knowledge about HIV and AIDS among the youth in South Africa	130
3.11.4.2	The attitude of the youth towards HIV and AIDS in South Africa	131
3.11.4.3	Beliefs about HIV and AIDS among the youth in South Africa	133
3.11.4.4	Risk practices among the youth in South Africa	133
3.11.5	Conclusion	136

CHAPTER 4: METHODOLOGY	138
4.1 Introduction	138
4.2 Setting	138
4.3 Research Design	138
4.4 Development of the training programme	139
4.5 Piloting the training programme	140
4.6 Implementation of the training programme	141
4.7 Evaluation of the training programme	141
4.8 Participants and sampling	142
4.9 Procedure	143
4.10 Measuring instruments	143
4.10.1 The demographic questionnaire	143
4.10.2 Rotter`s locus of control scale	144
4.10.3 Social systems control scale	144
4.10.4 Self-control scale	144
4.10.5 Fatalism scale	145
4.10.6 Intellectual Achievement Responsibility Questionnaire	145
4.10.7 The Deferment of Gratification Scale	145

4.10.8	Personal values and expectancies questionnaire	145
4.10.9	Dean`s Alienation Scale	146
4.10.10	Human Sciences Research Council (HSRC) AIDS KAPB Questionnaire	146
4.11	Data Analysis	147
4.12	Limitations of the pre-test and post-test research design	147
4.13	Ethical considerations	148
4.14	Conclusion	148
CHAPTER 5: RESULTS		149
5.1	Introduction	149
5.2	Demographic characteristics of the study sample	149
5.3	Health risk according to personality before training	151
5.4	Means and standard deviations of the study sample before training	158
5.5	Comparison of health risks according to personality before training	160
5.6	Correlations of locus of control-based variables and HIV and AIDS risk	1603
5.7	Multiple regression analysis	165
5.8	Structural equation modelling on data obtained before training	167
5.8.1	Model elements	168
5.8.2	Initial structural equation modeling assumptions	168
5.9	Models without a latent factor	171
5.10	Testing a localised latent factor	176
5.11	The health risk reduction effect of the training programme	179
5.12	Test of homogeneity of variance	182
5.13	Friedman`s test	183

5.14	Post Hoc Tests: Tamhane Post Hoc Test	185
5.15	Changes in responses due to gender, race, and personality	186
5.16	Comparison of health risk according to personality after training	189
5.17	Conclusion	193

CHAPTER 6: DISCUSSION **195**

6.1	Introduction	195
6.2	The development of the locus of control-based training programme	195
6.3	Implementation of the locus of control-based training programme	199
6.4	Evaluation of the locus of control-based training programme	201
6.4.1	Health risk difference according to personality	202
6.4.2	The relationship between locus of control-based variables and HIV and AIDS risk before training.	204
6.4.3	The efficacy of the locus of control-based training programme in reducing health risks and HIV and AIDS risk.	217
6.4.4	Short-term effects of the locus of control-based training programme	224
6.4.5	Medium-term effects of the locus of control-based training programme	224
6.5	Conclusion	225

CHAPTER 7: SUMMARY, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS **226**

7.1	Summary	226
7.2	Conclusions	229
7.3	Limitations of the study	230
7.4	Recommendations	232

REFERENCE LIST **234**

APPENDICES **384**

Appendix A:	The demographic questionnaire	384
Appendix B:	The locus of control-based training programme	386

LIST OF TABLES

Table 1:	Common health models used in HIV and AIDS risk reduction	128
Table 2:	Demographic information	150
Table 3:	Means and standard deviations of the study sample before training	159
Table 4:	Comparison of health risk according to personality before training	162
Table 5:	Correlation between locus of control-based variables and HIV and AIDS risk	164
Table 6:	Linear regression model for dependent variable HIV and AIDS risk	166
Table 7:	Correlation matrix and simple descriptive statistics	170
Table 8:	Fit indices for path models with latent variable	171
Table 9:	Path coefficients for best fit non-latent variable model	175
Table 10:	Path coefficients for best fit latent variable model	177
Table 11:	Means and standard deviations	181
Table 12:	Levene` s test of homogeneity of variance	183
Table 13:	Friedman Test	184
Table 14:	Multiple comparisons of psychological functioning across three months (1, 2, and 3).	186
Table 15:	Interactions of gender, age, race and personality	188
Table 16:	Comparison of health risk one month after training	190
Table 17:	Comparison of health risk three months after training	192

LIST OF FIGURES

Figure 1: Social systems control health risk pattern	152
Figure 2: Self-control health risk pattern	153
Figure3: Fatalism health risk pattern	154
Figure 4: Achievement-oriented behaviour health risk pattern	155
Figure5: Deferment of gratification health risk pattern	156
Figure 6: Personal values and expectancies health risk pattern	157
Figure 7: Social alienation health risk pattern	158
Figure 8: Model with unrelated mediators and no latent variable	173
Figure 9: Model with related mediators and no latent variable	173
Figure 10: Model with unrelated mediators and latent variable	173
Figure 11: Model with related mediators and latent variable	173

CHAPTER 1

BACKGROUND TO THE STUDY

1.1 Introduction

The HIV and AIDS pandemic has reached alarming levels among the youth in South Africa. According to the Medical Research Council of South Africa, AIDS killed 336 000 people in 2006 and among the 15-49 age group, 71% of deaths in South Africa were due to AIDS (Noble, 2006). In particular, the HIV and AIDS pandemic is adversely affecting the youth of South Africa (Noble, 2006; Peltzer, 2005; Shisana et al., 2009).

Young people, including university students, are reported to engage in high risk HIV and AIDS behaviours even if they were aware of the fact that there is no cure for HIV and AIDS. In spite of the HIV and AIDS intervention programmes that have been in place for over two decades in South Africa, there continues to be a discrepancy between HIV and AIDS awareness and risk reduction behaviours among the youth in South Africa (Hoffman, O`Sullivan, Harrison, Dolezal, & Monroe-Wise, 2006; James, Reddy, Taylor & Jinabhai, 2004). For example, national surveys of sexual behaviours of the youth showed that the 15-24 age group is a vulnerable group in terms of HIV and AIDS risk (Shisana & Simbayi, 2002; Pettifor et al., 2004). The 2-18 age group was also found to be vulnerable to HIV and AIDS (Brookes, Shisana, & Richter, 2004). The HIV and AIDS infection rate is also rising in the general population in South Africa where national HIV and AIDS surveys depict a gloomy picture of the HIV and AIDS status of many people (Department of Health, 2004; Du Plessis, Meyer-Weitz & Steyn, 1993; Evian, Fox, MacLeod, Slotow, & Rosen, 2004; Shisana, Peltzer, Zungu-Dirwayi & Louw, 2005; Shisana et al., 2005a; Shisana & Simbayi, 2002).

The United Nations Development Programme (2003) projected that HIV and AIDS would adversely affect many households in South Africa and the rest of Sub-Saharan Africa by 2020. The projected mortality rate by 2020 in South Africa is 25 %. The projection shows that the infection rate among the youth is going up instead of coming down in South Africa despite the concerted effort of civil society, government and the corporate sector to prevent it (Dorrington, Johnson, Bradshaw, & Daniel, 2006). The results of the Department of Health`s antenatal clinic survey (ANC) in (2004) of mothers visiting antenatal clinics confirmed that 29.5% of pregnant women were HIV positive. The prevalence of HIV and AIDS among children and adolescents is high in South Africa (Ferrand et al., 2009; Francoa et al., 2009). The infection rate among the youth could also be complicated by the fact that teachers who

should play a leading role as behaviour change role models are reported to be one of the professional groups that is worst affected by HIV and AIDS in South Africa (Shisana et al., 2005b).

The prevalence of HIV and AIDS in South Africa as reported by Shisana and Simbayi (2002) showed that prevalence in the South African population was 11.4% and that 15.2% of the 15-49 age group were HIV positive. In the general population, the Free State had an HIV and AIDS prevalence of 14.9%, Gauteng, 14.7%, Mpumalanga, 14.0%, KwaZulu-Natal, 11.7%, Western Cape, 10.7%, North West, 10.3%, Limpopo, 9.8%, Northern Cape, 8.4% and Eastern Cape, 6.6%. It was reported by Shisana and Simbayi (2002) that the prevalence of HIV and AIDS among the 15-24 age group was 10.2%. The prevalence of HIV and AIDS among the 2-18 age group was 5.4% (Brookes et al., 2004).

A study conducted among university students showed that about 52% of male students were at risk of HIV infection and it was also reported in the same study that above 40% of female students were reluctant to use female condoms (Peltzer, 2005). In another study, students were found to have a negative attitude towards taking a HIV test and they had a negative attitude towards people living with HIV and AIDS (Peltzer, Nzewi, & Mohan, 2004). The negative attitude towards HIV and AIDS and reluctance to engage in health-protective behaviours could make the South African youth more vulnerable to HIV infection (Gwandure, 2007a). Among university students, it is also reported that even medical students who should play a leading role in HIV and AIDS peer education programmes are reported to be at risk of HIV and AIDS (Keller et al., 2009; Nasir, Astrom, David, & Ali, 2008). In South Africa, health care workers are reported to be at risk of HIV and AIDS (Connelly et al., 2007; Shisana, Hall, Maluleke, Chauveau, & Schwabe, 2004). The sexual behaviours of the youth in South Africa, including university students, is reported to be generally casual and unsafe (Eaton, Flisher, & Aaro, 2003).

USAID (2002) projected that the impact of HIV and AIDS on the South African economy could be the reduction of the Gross Domestic Product (GDP), that is, the economic development of South Africa, from 0.3% a year, to 0.1% a year. The Human Development Index (HDI) is a comparative measure used by the United Nations Development Programme (UNDP) to assess life expectancy and similar human welfare aspects of countries worldwide. It is projected that the human development index would be reduced by 15% by 2020 in South Africa (UNDP, 2003). The rise in HIV and AIDS statistics among the youth could be indicative of the need to develop effective risk reduction training programmes in South Africa (UNAIDS, 2006).

1.2 Rationale for the study

The study sought to develop a locus of control-based training programme for HIV and AIDS risk reduction among the youth in South Africa. It could be argued that the training programmes in current use do not seem to be effective in reducing HIV and AIDS risk among the youth in South Africa (Bhana & Pattman, 2009; Bowler, 2004; Dickinson, 2004, Dickinson & Stevens, 2005; Fakier, 2004). It could be argued that one of the reasons why there seems to be a less meaningful change in risk behaviour among the youth in South Africa could be that the training programmes that are used in behaviour change programmes may not be relevant to the South African context or it could be that the training programmes could have training content that might not be appealing to the youth. For example, some of the models were not initially designed for HIV and AIDS, and some were not adapted to fit in with HIV and AIDS risk in South Africa (e.g, du Plessis et al., 1993; Kalichman et al., 2006; Stevens, 2004). Unlike foreign psychological tests which have to go through the Health Professions Council Psychometrics Committee for standardisation or cultural adaptation and approval for use in South Africa, foreign HIV and AIDS risk reduction training models do not go through an approval process. Organisations can import health training programmes and use them in South Africa without seeking approval or standardisation. Most of the organisations in South Africa use health models for organisational development training programmes.

Even though some of these models could address some relevant issues in HIV and AIDS risk reduction, it appears as if one of their greatest weaknesses is that the factors upon which these models were built might not have been based on any one psychological theory (Morrison & Bennett, 2006; Ogden, 2004). This tends to distort the interpretation of results as the factors may not be grounded in psychology but located in other disciplines. This study sought to develop a locus of control-based training programme for HIV and AIDS risk reduction among university students. The principles and concepts of the training programme were derived from Rotter's social learning theory of personality. The locus of control-based training programme sought to develop further the rudimentary ideas about locus of control that were haphazardly discussed by various researchers in the 1950s up until the 1970s. It is worthy noting that the early researchers on locus of control and health did not come up with one solid locus of control-based model for health risk reduction. Later, some attempts were made to expand the locus of control construct in health promotion but without the social or health contexts identified by Rotter (1966) as essential in understanding human behaviour in novel psychological situations. For example, the multidimensional health locus of control and multidimensional-multiattributonal causality scales were developed in an attempt to broaden the scope of the construct (Lefcourt, Von Baeyer, Ware, & Cox, 1979; Wallston, & Walston, 1978; Wallston, Wallston, Kaplan,

& Maides, 1976). However, these measuring scales, and those that came later, still treat locus of control as a single variable without the contextual factors or dimensions pointed out by Rotter (1966) as important in broadening and enriching the locus of control construct. At the moment, it could be argued that there are no locus of control-based health models for HIV and AIDS risk reduction training in South Africa and abroad apart from the various locus of control scales.

The locus of control construct seems to be narrowly defined in HIV and AIDS risk education programmes and yet the construct could have dimensions that could assist health educators in assessing for HIV and AIDS risk among the youth. The training programmes do not seem to address the broad spectrum of Rotter's social learning theory. Rather, there is a tendency to treat it as a dichotomous variable that is not linked to the entire social learning theory (Du Plessis et al., 1993). Even though the locus of control construct was widely used for health risk reduction training in the 1950s, 1960s, 1970s and early 1980s, it seems as though researchers gave it less attention when HIV and AIDS came into the research perspective (Du Plessis et al., 1993).

This study sought to develop a locus of control-based training programme for HIV and AIDS risk reduction among university students in South Africa. The study conceptualised, developed, and implemented a locus of control-based training programme to reduce health risks and HIV and AIDS risk among university students. Locus of control is a concept that could be important in the study of young people in Africa and abroad as it focuses on health decision-making processes in challenging psychological situations. The locus of control concept assesses individual health risk behaviours within health contexts. The health contexts could act as stimuli in which an individual could show perceptions of personal inadequacy to deal with presenting health problems. The health risk factors assessed in locus of control research are social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation (Lefcourt, 1976; Phares, 1976; Rotter, 1966). These broad contexts of locus of control could help health educators assess health risks within each context and plan health risk reduction training programmes that are based on the health risks presented by the participants.

1.3 Aim of the study

The aim of the study was to develop, implement and evaluate the effectiveness of a locus of control-based training programme in reducing health risks and HIV and AIDS risk among university students. The study identified locus of control as a possible risk factor in HIV and AIDS risk reduction. The design of the training programme was based on the assumption that if locus of control was modified through training to reduce health risks since the 1960s, it could still be useful to identify locus of

control as a risk factor in HIV and AIDS prevention and control. The study sought to build the rudimentary and isolated locus of control-related factors into one training programme. The study sought to implement the designed training programme and to assess its efficacy in reducing health risks and HIV and AIDS risk among university students.

1.4 Research Question

The present study sought to provide answers to the following question:

Can a locus of control-based training programme be used to reduce locus of control-based health risks and HIV and AIDS risk among university students?

1.5 Hypotheses

The main empirical hypothesis tested was that the locus of control-based training programme would demonstrate significant reduction in mean levels of health risks associated with locus of control-based variables and HIV and AIDS risk among university students.

Specifically, the study hypothesised that the locus of control-based training programme would:

1. Demonstrate significant differences in health risk between participants with an external locus of control and participants with an internal locus of control.
2. Demonstrate significant correlations between locus of control-based variables and HIV and AIDS risk
3. Demonstrate significant prediction of the variation in HIV and AIDS risk scores
4. Demonstrate significant reduction in locus of control-based health risks and HIV and AIDS risk among the participants.

1.6 Structure of the thesis

This study sought to assess the efficacy of a locus of control-based training programme in reducing locus of control-related health risks and HIV and AIDS risk among university students. In this regard, the study investigated hypotheses about the difference in psychological functioning between participants with an external locus of control and participants with an internal locus of control. The study looked at the relationship between locus of control-based variables and HIV and AIDS risk and it assessed the efficacy of the training programme in reducing locus of control-based health risks and

HIV and AIDS risk. In order to answer the main research question, the study was divided into chapters as described below.

Chapter Two reviews literature on social learning theory as founded by Rotter (1954). The locus of control construct is based on Rotter`s social learning theory (Rotter, 1966). The chapter focuses on early arguments about personality and human behaviour. The theoretical paradigm of the study provides the locus of control behavioural techniques that were used in the development of the locus of control-based training programme to reduce HIV and AIDS risk. Chapter Three focuses on literature review of the variables used in this study. The variables are locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk among the youth in South Africa. The Methodology of the study is presented in Chapter Four. It describes the design of the study, development of the training programme, sampling method, instruments, procedure, implementation and evaluation of the training programme. Chapter Five presents the results of the study in form of bar charts, tables, and inferential statistics. The discussion section of the study is contained in Chapter Six. The chapter focuses on differences in health risks according to personality, relationship between locus of control variables and HIV and AIDS risk and the impact of the locus of control-based training programme in reducing health risks and HIV and AIDS risk among the participants. Chapter Seven presents the study summary, conclusions, limitations, recommendations and directions for future research in the area of locus of control and health risk reduction training.

CHAPTER 2

THEORETICAL PARADIGM

2.1 Introduction

This chapter reviews the social learning theory as presented by Rotter (1954). The chapter focuses on the principles and concepts that are used in understanding human behaviour. Early studies on human behaviour in social contexts are discussed in the contexts of health risk prediction and health risk reduction in this study. The social learning theory provides the foundation upon which the locus of control construct is built. Contemporary studies on locus of control hardly refer to the theoretical foundations of the locus of control construct in social and health settings. The social learning theory principles discussed in this chapter were used in the development of the locus of control-based training programme for HIV and AIDS risk reduction in this study.

2.2 The general principles of Rotter`s social learning theory of personality

The locus of control construct that was used to develop a training programme for HIV and AIDS risk reduction among university students was developed by Rotter (1966) from the social learning theory of personality. Rotter (1954) developed the social learning theory of personality to predict and interpret human behaviour in relatively complex social situations. The theoretical framework of the locus of control construct could guide researchers, health educators and behaviour change training consultants in designing effective health training programmes. It could act as a foundation upon which education and training concepts are based. Rotter`s social learning theory is based on the premise that human behaviour is learned in social situations and that it is inextricably influenced by the biological characteristics of the individual (Rotter, 1954, 1975; Rotter, Chance & Phares, 1972). In this study, seven general principles presented as postulates and corollaries are explained as central to the understanding of human behaviour in social learning theory. These postulates and corollaries form a language that researchers working in the same field would understand and make abstractions peculiar to the discipline. The argument of the social learning theorists was that postulates and corollaries help define a research field and facilitate the understanding of complicated social phenomena (Rotter, 1954). The social learning theory of personality postulates and corollaries are discussed in the context of health education and training in South Africa.

Postulate 1

The unit of investigation for the study of personality is the interaction of the individual and their meaningful environment (Rotter, 1954, p. 85).

Social learning theorists argue that in order for the individual to be personally effective in any social setting, they have to interact with their social environment and make sense of it (Rotter, 1954). The environment acts as a stimulus and individuals are expected to selectively respond to it and derive satisfaction from positive results. The ``term meaningful environment`` is further elaborated by Rotter (1954) as implying the acquired significance or meaning of the environment to the individual. The promotion of a healthy environment is the prerogative of the individual.

A corollary is a conclusion that follows readily from a postulate and is used to illustrate the significance of the theory in practice. In this case, the first postulate of social learning theory has two corollaries stated below to illustrate the relationship between the individual and the environment.

Corollary 1

The study of personality is the study of learned behaviour. Learned behaviour is behaviour that is modifiable, that changes with experience (Rotter, 1954, p. 86).

The implication of the social learning theory to behaviour change in health settings is that personality changes with training (Rotter, 1975; Quarton, 1967). In particular, the corollary presupposes that locus of control changes with experience and training. This corollary downplays the biological determination of personality or the role of traits in the prediction of human behaviour (Allport, 1937; Allport; 1966; Freud, 1938). The second corollary emphasises further the role of experience in predicting human behaviour.

Corollary 2

Investigation of personality requires the study of experience or sequences of events. Its method is historical, for an analysis of any behaviour involves the investigation of the conditions preceding its appearance (Rotter, 1954, p. 87).

The position of social learning theorists is that in predicting human behaviour, the past can influence present behaviour (Rotter, 1975; Gilovich, 1981). The past informs present health decisions. This approach entails assessing an individuals` prior experience before introducing a new training programme. In order to be effective in reducing current health risks, health educators and counsellors could obtain information relating to a group or an individual`s past health problems before

introducing new training interventions. In defence of the social learning theory of personality as a distinct theory in its own right, Rotter (1954) presented the second postulate deemed as capable of explaining human behaviour but without a corollary to strengthen it.

Postulate 2

Personality constructs are not dependent for explanation upon constructs in any other field (including physiology, biology, or neurology). Scientific constructs for one mode of description should be consistent with constructs in any other field of science, but no hierarchy of dependency exists among them (Rotter, 1954, p. 88).

The general principle proposes that human behaviour could be interpreted differently by different disciplines but there is no good reason to rank those approaches in order of importance (Rotter, 1954; Rotter et al., 1972; Spence, 1944). In this study, so many behaviour change models are presented but there is no reason to rank the contribution of each model towards HIV and AIDS risk reduction in South Africa. The effectiveness of an approach in behaviour change is dependent upon the clinician or health training facilitator's preference and skilfulness in imparting the knowledge to participants. In this regard, there is no way a locus of control-based training programme could purport to be the best model in reducing HIV and AIDS among students. Conversely, there is no reason for the locus of control-based model to be ranked in order of importance against existing health models because participant responsiveness in training interventions could vary widely in various social and health settings. In this study, locus of control-based health risks and HIV and AIDS risk reduction are terms that are only understood and addressed in the context of Rotter's social learning theory of personality.

Postulate 3

Behaviour as described by personality constructs takes place in space and time. Although all such events may be described by psychological constructs, it is presumed that they may also be described by physical constructs as they are in such fields as physics, chemistry, and neurology. Any conception that regards the events themselves, rather than the description of events, as different is rejected as dualistic (Rotter, 1954, p. 90).

The general principle implies that behaviour could be explained from various perspectives. The two corollaries below illustrate that.

Corollary 1

Any conception of behaviour wherein ``physiological behaviour`` is conceived of as ``causing`` ``personality behaviour`` or vice versa is rejected as dualistic (Rotter, 1954, p. 90).

The reason why the idea is rejected is because there is an implication of two kinds of events rather than different descriptions of the same event. The fact that behaviour can be described in different terms does not imply that there are two forms of behaviour. Each discipline selects its own language that is appropriate to describe behaviour. Physiological processes and personality should be understood in unison.

Corollary 2

Any conception of behaviour wherein explanation is made on the basis of the interaction of body with mind is rejected as dualistic (Rotter, 1954, p. 91).

The corollary rejects treating the body and the mind as different (McGinn, 1989). The social learning theorists consider the split as not desirable. Physical ailments and psychological complaints could be treated together in psychotherapy and hence splitting pain into body and mind categories may not help the patient or client seeking treatment. In psychosomatic ailments it is the state of the mind that influences the physiological wellbeing of the individual (Graham, 1967). It is argued that ``psychological`` and ``physical`` are terms that cannot be usefully thought of as referring to different kinds of states or events, rather, they are terms of different but parallel languages that may be used for describing exactly the same events (Rotter, 1954, 1975; Rotter et al., 1972; Graham, 1967). Consequently, in HIV and AIDS research, there could be terms that are used interchangeably from different models but each model is entitled and flexible to use its own terms to convey specific meanings. In targeting HIV and AIDS risk in training programmes, splitting health risk according to diseases that affect the body and diseases that affect the mind might not be a holistic health risk reduction strategy.

Postulate 4

Not all behaviour of an organism may be usefully described with personality constructs. Behaviour that may usefully be described by personality constructs appears in organisms of a particular level or stage of complexity and a particular level or stage of development (Rotter, 1954, p. 92).

The postulate implies that human behaviour could be complicated to such an extent that no one approach could exhaustively explain its occurrence. Human behaviour changes as the environment changes. Individuals and groups could become more complex and exhibit new functions with changing environments (Murphy, 1947). To illustrate this further three corollaries are given.

Corollary 1

Physiological or other constructs may be used in describing some of the conditions present when personality characteristics are first required (Rotter, 1954, p. 92).

This corollary acknowledges the use of terms borrowed from other disciplines to describe personality.

Corollary 2

Physiological or other constructs may be used by psychologists for any practical purpose (Rotter, 1954, p. 92).

Terms derived from other disciplines can be used by psychologists as long as the terms correlate with psychological terms in conveying meaning and not used in competition with existing psychological terms. In fact, such borrowed terms should not overshadow social learning theory concepts in explaining psychological phenomena. Some terms, such as ``HIV and AIDS risk`` could have a universal meaning across disciplines in HIV and AIDS research. In this regard, the corollary implies that the development of a locus of control-based programme for HIV and AIDS risk reduction could explore and use some of the concepts derived from other health preventive models, theories, paradigms or philosophies. Rotter (1966) illustrated the usefulness of building a broader locus of control model for health risk reduction by incorporating similar concepts derived from various disciplines or philosophies.

Corollary 3

The human organism may interact with itself using learned meanings (or symbols) which describe in physiological terms or terms characteristic of other modes of description (Rotter, 1954, p. 93).

The corollary implies that in social learning theory learned or acquired behaviour is more useful in explaining human behaviour than relying on physiological states of individuals to predict health behaviour (Quellette & Wood, 1998). These learned meanings may be ``direct`` in which the

individual knows that they need something for a reason and ``indirect`` when the individual knows that they need something as a reaction to a social norm. An individual reacting on the basis of indirect learned meanings is reacting to how they believe others perceive of them (Rotter, 1954). These reactions are psychological reactions that can better be described by psychology than physiology because needs have acquired meanings. For example, sex drive is a physiological state but would not translate into action unless the drive is directed towards an acquired social meaning or activity (Rotter, 1954). In HIV and AIDS risk reduction research, it could be useful to target participants' learned meanings relating to HIV and AIDS and how their past experiences could be insightful in reducing current health risk practices.

Postulate 5

A person's experiences (or his/her interactions with his/her meaningful environment) influence each other. Otherwise stated, personality has unity. New experiences are a partial function of acquired meanings, and old acquired meanings or learnings are changed by new experience. Perfect prediction of acquired behaviour would ideally require a complete knowledge of previous experience (Rotter, 1954, p. 94).

The concept of unity of personality is implied but personality is also flexible and amenable to change. Personality becomes increasingly stable as the person grows older, since one tends to select new experiences and new meanings on the basis of ever-increasing store of previous experiences (Caspi & Roberts, 2001; Field & Millsap, 1991; Rotter, 1954). In this regard, one corollary was formulated to explain the postulate.

Corollary 1

One cannot truly speak of the ``cause`` or ``etiology`` of behaviour as described by personality constructs but only of the conditions, present and antecedent, necessary for the occurrence of the behaviour. Such descriptions are never ``ultimate`` or final (Rotter, 1954, p. 96).

The usefulness of the corollary to the prediction of human behaviour lies with the avoidance of making ``single cause`` inferences to explain behaviour since events do not necessarily have single causes. The presenting behaviour should be explained in terms of present stimuli, learned habits, relevant previous experience, positive reinforcement and the personality of the individual (Rotter, 1954). In HIV and AIDS training programmes, risk factors are usually targeted as causal factors

which could result in the stigmatisation of institutions, groups, and individuals associated with or displaying such behaviours.

Postulate 6

Behaviour as described by personality constructs has a directional aspect. It may be said to be goal-directed. The directional aspect of behaviour is inferred from the effect of reinforcing conditions (Rotter, 1954, p. 97).

Rotter (1954) and his team working on the development of the social learning theory acknowledged that they derived this concept from contemporary drive theories although there was a slight difference in approach. Goal-directed behaviour in social learning theory is closer in meaning to Freud's psychic determinism (Freud, 1933; Waelder, 1963), Adler's striving for security or superiority (Adler, 1924; Riggall, 1924), Lewin's vector psychology (Lewin, 1936, 1943), Lecky's striving for consistency (Lecky, 1945; Lecky, Adams, & Thorne, 1969) and Hull's organismic need (Hull, 1930, 1943). In social learning theory, reinforcement is regarded as action, condition, or state that affects movement towards a goal. Reinforcement that facilitates movement towards a goal is positive reinforcement; that which inhibits or frustrates such movement is negative reinforcement (Rotter, 1954). Four corollaries are given below to clarify the directional interaction of the individual and her/his meaningful environment.

Corollary 1

The needs of a person as described by personality constructs are learned or acquired. Early goals or needs (and some later ones) may be spoken of as arising owing to the association of new conditions with the reinforcement of physiological homeostatic movements, and most later goals or needs arise as means of satisfying earlier learned goals (Rotter, 1954, p. 100).

This corollary illustrates that personality is learned behaviour. It also indicates that human behaviour is need-oriented and that new new needs derive their importance from their associations with earlier needs (Rotter, 1954). In HIV and AIDS education and training programmes it is essential to realise that personality is learned behaviour which can be changed with training. Health behaviours, goals, or needs that individuals set for themselves are learned behaviours which could be changed with training or exposure to new experiences although earlier learned experiences could influence the assimilation of new experiences.

Corollary 2

Early acquired goals in humans (which play a great role in determining later goals) appear as the result of satisfactions and frustrations which, for the most part, are entirely controlled by other people (Rotter, 1954, p. 100).

The goals of behaviour are influenced by social relationships. Individuals behave to obtain love, attention, protection and recognition of others (Rotter, 1954, 1975). It is posited that psychological goals or needs develop one from the other and behavioural patterns are retained or rejected in terms of their ability to lead to satisfaction (Rotter, 1954). In HIV and AIDS research, it would be advisable in this context to look at risk behaviour and what reinforces it or sustains its continuance in individuals or communities. Prior satisfying reinforcements could be analysed in relation to new health threats.

Corollary 3

In order for any behaviour to occur regularly in a given situation or situations, it must have been made available to the person using it by leading to some reinforcement or reinforcements during previous learning experiences (Rotter, 1954, p. 101).

This corollary refers to the repetition of reinforcing behaviours and discontinuity of non-rewarding behaviours. This concept could have been derived from Thorndike's law of effect which states that that pleasurable responses are repeated (Rotter, 1971; Thorndike, 1927, 1933).

Corollary 4

A person's behaviours, needs, and goals are not independent but belong in functionally related systems. The nature of these relationships is determined by previous experience (Rotter, 1954, p. 100).

The corollary implies that behaviour leads to reinforcement and goals need to be reinforced to sustain behaviour. Individuals pursue needs and goals that have given them satisfaction in the past. In the same vein, communities targeted for behaviour change could have problems related to moving away from lifestyles and experiences that have historically provided reinforcement. HIV and AIDS risk reduction training programmes could target functionally related health risk systems in the target population.

Postulate 7

The occurrence of a behaviour of a person is determined not only by the nature or importance of goals or reinforcements but also by the person's anticipation or

expectancy that these goals will occur. Some expectations are determined by previous experience and can be quantified (Rotter, 1954, p. 102).

The social learning theory principle that expectancy motivates individuals and groups to behave in certain ways is explained in many ways by other theorists. Tolman (1934) described the occurrence of learning as the ``building up`` of an expectancy that a given sign in the environment will, via a behavioural route, lead to a reinforcement (Rotter, 1954). Also, Krech (1950) and Postman (1951) describe expectancy as the cognitive anticipation that some specific action is likely to lead to some specific outcome. In health education training and counselling, it may be essential that individuals and groups see the connection between what they do in the training room or counselling programme and the desired health outcomes. The development of expectancy in HIV and AIDS education could result in participants realising that risk reduction can be achieved by following the principles of behaviour change recommended by the training facilitators (Atkinson, 1964; Pribram, 1967; West & Anderson, 1976). Participants could have the expectancy that participating in HIV and AIDS risk reduction training programmes could help them reduce risk HIV and AIDS behaviours.

Rotter`s social learning theory of personality has general principles that could be used in HIV and AIDS risk reduction training programmes. The principles target the meaningful interaction of the individual and their environment in predicting health risk. The theory argues that personality is largely learned behaviour. If behaviour is learned through conditioning and training, it also follows that undesirable behaviours could be unlearned through training. The social learning theorists argue that personality is not a fixed variable; it is amenable to change with new experiences or training. In developing training programmes, health educators could, as of necessity, incorporate participants` experiences into the training programmes. If training experiences are not relevant to participants` life experiences that could result in participants failing to understand the new concepts. Past, current and future risk HIV and AIDS behaviours could be addressed in training programmes as functionally related. Life experiences form knowledge bases which in turn inform health decisions and behaviour. In this context, it could be argued that HIV and AIDS behaviour change training programmes could adequately deal with the cultural, social, political and economic realities of the target individuals and communities in order to be meaningful or sensible to the participants. When developing a behaviour change training programme, it could be necessary to use technical language that is based on Rotter`s social learning theory of personality and also to use technical terms derived from other disciplines in order to broaden and enrich research on behaviour change and HIV and AIDS risk reduction. It could be emphasised in health risk reduction training programmes that human behaviour does not happen in a vacuum. It is the quality of human interaction in social and sexual relations that could have a significant contribution towards health-preventive or risk reduction behaviours. Health educators

using the social learning theory of personality to change risk behaviour could be guided by the premise that all human behaviour is goal-directed and that individuals are capable of behaving positively to achieve these goals. Human needs drive individuals towards performing activities. These needs are learned responses and can be modified through training. Previously learnt pleasurable responses may influence present and future behaviours. According to the social learning theory, the occurrence of human behaviour is determined by goals, needs, reinforcement, and expectancy. In HIV and AIDS training programmes, health educators could target participants' environment, experiences, knowledge, needs, goals, behavioural reinforcers, and their expectancies in HIV and AIDS risk reduction.

2.3 Basic concepts used to explain human behaviour in social learning theory

The social learning theory uses the following major concepts in locus of control research to explain or predict human behaviour: behaviour potential, expectancy, reinforcement value, the psychological situation, psychological needs, freedom of movement, minimal goals, the significance of language in social learning theory, generalised expectancies and problem solving skills (Rotter, 1954; Rotter et al., 1972). In health education programmes, it is important that researchers and clinicians are able to predict health risk by analysing behavioural profiles of individuals and groups. Due to ethical limitations, researchers do not start by testing a population sample for the presence of a disease out of sheer academic interest at the expense of the individual or group's right to privacy or psychological protection. The use of risk prediction theories such as the social learning theory or any other health model helps researchers, educators, and clinicians identify health risk factors in a target population before designing interventions programmes to reduce health risks.

2.3.1 Behaviour potential

Behaviour potential refers to any action of the individual or organism that involves a response to a meaningful stimulus that may be observed or measured directly or indirectly (Rotter, 1954). It is stated that "Behaviour potential may be defined as the potentiality of any behaviour's occurring in any given situation or situations as calculated in relation to any single reinforcement or set of reinforcements" (Rotter, 1954, p. 105). This definition includes cognitive processes, emotional reactions, and observable behaviours.

The concept of behaviour potential could be useful in the development of HIV and AIDS training programmes. It encompasses aspects of behaviour such as the group's readiness, attitudes towards behaviour change, emotional involvement and willingness to participate in community projects. New training programmes could look at current community initiatives before introducing the new training

initiatives. Needs assessment of the community helps incorporate community training needs into the training programmes. This could create a sense of ownership of the training programme by the community. The behaviour potential of individuals and communities could be viewed in terms of preparedness to learn or engagement with new experiences.

2.3.2 Expectancy

In social learning theory, it is argued that expectancy could be defined as the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour in a specific situation or situations (Rotter, 1954). It is stated that ``expectancy is independent of the value or importance of the reinforcement`` (Rotter, 1954, p. 107). Expectancy is a learned response which is dependent upon an individual`s past history of reinforcement (Phares, 1976). When individuals are in a relatively novel situation, they use generalised expectancies as learnt responses to deal with current problems. They use specific expectancies to deal with experiences they are familiar with (Phares, 1976).

The utilisation of the concept of expectancy in HIV and AIDS risk reduction training programmes could be that of linking behaviours to outcomes. Trainees could be assessed for their levels of expectancy that a particular training programme could help them change their behaviour and that they could derive health benefits from a change of behaviour. Studies on behaviour change indicate that when trainees, participants or patients` expectancies about the efficacy of a training programme or treatment outcome are low, there is a tendency to show low motivational behaviours towards the intervention (Rotter et al., 1972).

2.3.3 Reinforcement value

Reinforcement is based on Thorndike`s the law of effect that positive responses are repeated and negative responses are avoided (Herrnstein, 1970). Behaviours or events could be reinforcing to the individual or group. In health risk reduction training, a reinforcement is something that changes behaviour by either increasing or decreasing the potentiality of its occurrence (Rotter, 1954). It is argued that if an event increases the responses of an individual it implies that such an event is a positive reinforcement to the individual. On the contrary, negative reinforcement decreases behaviour potential (Rotter, 1954). There are two types of reinforcement. These are internal reinforcement and external reinforcement. Internal reinforcement is defined as the individual`s experience or perception that an event has occurred which has some value to them (Rotter, 1954). The individual could experience the reinforcement as pleasant or unpleasant hence positive or negative value is determined by the resultant effects upon behaviour (Rotter, 1954). In contrast, external reinforcement is the

occurrence of an event or behaviour that is known to have predictable reinforcement value for the group or culture to which the individual belongs. This involves behaviours such as praises for good behaviour or giving rewards to people who succeed in the community. Reinforcements are valued differently by the individual to such an extent that reinforcements that have higher value would have more effect on behaviour potential than reinforcements of low value.

Social learning theorists argue that ``The reinforcement value of any external reinforcement may be ideally defined as the degree of preference for any reinforcement to occur if the possibilities of their occurring were all equal`` (Rotter, 1954, p. 107). The degree of preference of the reinforcement is fairly consistent across situations for individuals (Butter, McDonald, & Snyder, 1969; Rotter, 1954; Rotter et al., 1972). The preference happens in choice situations in which the individual compares alternative reinforcements (Rotter, 1954). The act of choosing an alternative could be influenced by an individual`s past reinforcements.

Reinforcement value could to be assessed in individuals and groups before the designing of training and counselling programmes. The value systems of individuals and communities could guide trainers and counsellors in drawing up effective training programmes and behaviour change interventions (Hammer, 1968). The HIV and AIDS pandemic could be understood by analysing the reinforcement value of individuals who engage in risk sexual behaviours (Kelly & Kalichman, 1998). The understanding of the satisfaction and value placed by individuals and groups on engaging in specific behaviours could help health educators provide relevant training programmes that could reduce HIV and AIDS risk among participants.

2.3.4 The psychological situation

The behaviour of an individual does not happen in a vacuum; an individual continuously reacts to aspects of external and internal environments (Rotter, 1954, 1975; Rotter et al., 1972). The social environment in which the individual lives is referred to as the psychological situation in social learning theory (Rotter et al., 1972). When analysing human behaviour, it is important to examine the social stimuli to which individuals and groups respond in search of reinforcement or satisfaction. Environmental conditions can positively or negatively influence behaviour (Rotter, 1954, 1955; Rotter et al., 1972).

The psychological situation in HIV and AIDS risk reduction programmes could refer to the appraisal of environmental conditions that could predispose individuals and communities to HIV and AIDS risk. These conditions could be social, political, economic and biological in nature. Health educators could work with communities to improve these conditions to reduce health risks (Lefcourt, 1976;

Pervin, 1968; Phares, 1976). Psychological situations associated with dire poverty, overt and covert discrimination, wars, racism, polluted environments, disability and other forms of adversity could affect health risk reduction behaviours (Gwandure, 2008a; Lefcourt, 1976; Phares, 1976). Most of the studies on HIV and AIDS risk reduction carry out baseline surveys on the target population to establish environmental, social, and psychological conditions that could affect communities before the commencement of the intervention programmes (Jewkes et al., 2006).

2.3.5 Psychological needs in social learning theory

Human needs drive the individual or group to move towards learned reinforcements. The psychological needs in social learning theory are learned responses (Rotter, 1954). The physiological drives such as thirst, hunger, warmth, or pain avoidance are primary drives that become psychological needs through learning. External learned cues act as stimuli to strengthen the internal drives of the individual thus making human needs stronger through learned association. The strength of the psychological need is determined by the strength of the reinforcement. Need value is the selection of one set of reinforcements over another set of reinforcements in a given situation. When reinforcement becomes weak, human drive and need potential are weakened as well (Rotter, 1954).

Human needs are functionally related to drive, directionality of behaviour, and human motivation. In social learning theory, the following six broad categories of needs are identified: recognition-status, protection-dependence, dominance, independence, love and affection, and physical comfort (Rotter, 1954). Recognition-status refers to the need for being considered competent or good in a professional, social, occupational, or play activity. This is the need to be recognised as better than others (Rotter, 1954; Rotter, 1975). Protection-dependence is the need to have another person or group of people prevent frustration or punishment and to provide for the satisfaction of other needs (Rotter, 1954). Dominance is the need to direct or control the actions of other people, including members of family and friends (Rotter, 1954). Independence refers to the need to make own decisions, to rely on oneself, together with the need to develop skills for obtaining satisfaction directly without the mediation of other people (Rotter, 1954). Love and affection need is the acceptance and liking by others. Physical comfort need is the learned need for physical satisfaction that is associated with security (Rotter, 1954).

The psychological needs could be used in psychological assessment for adjustment, counselling and training. Psychological disorders could be investigated when individuals and groups show deficiencies in perceptions of: personal competence, protection needs, personal power, personal independence, love and belonging, and peace. According to social learning theory, if individuals or groups fail on

their own to satisfy these needs or prevailing environmental conditions prevent them from realising these needs, it could be predicted that such individuals or groups could be at risk of developing health problems. Psychopathology is associated with HIV and AIDS risk (Brown, Danovsky, Lourie, & DiClemente, 1997).

2.3.6 Freedom of movement

Freedom of movement refers to ``the mean expectancy of obtaining positive satisfaction as a result of a set of related behaviours directed toward the accomplishment of a group of functionally related reinforcements`` (Rotter, 1954, p. 194). An individual`s freedom of movement is low if they have a high expectancy of failure or punishment as a result of the behaviours with which they try to obtain the reinforcements that constitute a particular need (Rotter, 1954). High freedom of movement implies high expectancy for success in different situations (Rotter, 1954).

In predicting HIV and AIDS risk in individuals or a population sample, perceptions of freedom of movement can be assessed. If individuals feel that they cannot move towards the realisation of their goals that could indicate limited psychological freedom. High freedom of movement could be indicative of healthy decision-making processes in sexual health. The right to health and freedom of conscience is a basic human right enshrined in the South African constitution (Republic of South Africa, Act No. 108, 1996). Lack of human freedom is associated with health risk, powerlessness, depression or self-damaging behaviours (Lefcourt, 1976; Phares, 1976; Rotter et al., 1972).

2.3.7 Minimal goal levels

The minimal goal level is defined as the lowest goal in a continuum of potential reinforcements for some life situation or situations which will be perceived as a satisfaction (Rotter, 1954, p. 213). The lowest goal in a continuum of possible reinforcements would strengthen or increase the behaviour potential (Rotter, 1954). Minimal goal levels can change or fluctuate with experience. Some individuals are happy with the achievement of basic necessities of life while others aim for higher rewards. If the minimal goal set by the individual as a standard for success is higher than the rest in the group, then the individual could work harder than anyone else in the group to maintain their status.

This personality attribute keeps individuals working towards self-standards, skills improvement, self-betterment or getting satisfaction from achievement-oriented behaviours (Rotter, 1954). Some cultures are competitive and reinforce the meeting of set standards while others discourage competition among individuals and groups (Hofstede, 1980). Having minimal goals for safer sex could help individuals and groups develop self-monitoring practices against HIV infection. Training programmes or

counselling interventions could set minimal goals for participants and clients at risk of HIV infection or infecting others. It was observed that fostered minimal goals continued to exist among individuals and groups even in the absence of parents or trainers. In fact, self-standards may persist over a long period of time as moral standards in spite of the difference between these standards and those of immediate associates (Rotter, 1954). This implies that minimal goals can be learned and internalised by the individual as a health standard that can be used in HIV and AIDS risk reduction behaviours.

2.3.8 The significance of language in social learning theory

In social learning theory both non-verbal language and verbal language guide the individual in social interaction to behave or not to behave in a situation-appropriate manner (Rotter, 1954). Language provides cues that determine behaviour or reinforcement (Rotter, 1982). Language functions to direct attention to specific cues. Verbalised responses or non-verbal language can speed up learning, acquisition of conditioned responses and extinction of undesirable responses (Rotter, 1954, 1982). Language acts as a stimulus that enables individuals to read the intentions, feelings, and thoughts of others in social contexts. People in love should be able to understand their sexuality in relation to verbal and non-verbal language and interpret cues about sexual relations correctly. Partners should be able to understand the language and technical terms used in HIV and AIDS risk reduction education.

Language is a cue to reinforcement. An individual learns to associate words, ideas, and statements with future events (Rotter, 1954, 1982). Language provides cues to behaviour and directs attention to specific and critical cues in the environment that will help the individual overcome complex social situations. The individual learns to discriminate relevant cues from irrelevant responses in making health decisions. The individual, through use of language cues can apply previous experience to current situations by dealing with a few cues rather than having to treat each situation as new and different (Rotter, 1954, 1982).

In HIV and AIDS research, language cues can be important in assessing the relationships between individuals. Non-verbal and verbal language are used in love relationships. Due to cultural norms and values, men and women could communicate differently in sexual relationships in South Africa. What men could regard as positive signs might not be interpreted in the same way by women in love relationships (Jewkes, 2002; Jewkes & Abrahams, 2002; Jewkes, Vundule, Mofarah, & Jordaan, 2001). The language that is used in relationships could have negative connotations that could result in HIV and AIDS risk. The language could promote safer sex if partners are trained in sexual health education and are able to identify positive cues such as the use of appropriate language when negotiation for safer sex. The language could show respect for each other and partners could be

trained to use language that precisely describes their feelings (Berer, 1998; O'Donohue & Crouch, 2007). The correct use of language, positive interpretation of others' language and effective interpretation of non-verbal language could help individuals form positive concepts about their sexuality.

2.3.9 Generalised expectancies and problem solving skills

Individuals rely on learnt concepts when confronted with novel situations that require solutions. They form concepts to simplify the world and utilise learnt concepts to resolve presenting problems. Human survival is based on concept development, changing of concepts, modification of concepts and learning to establish functional relationships among concepts (Phares, 1976; Rotter et al., 1972). Individuals categorise information as a way of solving problems. They develop expectancies about individuals, groups of people and the environment. An individual's experience with one group of similar individuals or events results in the generalisation of the experience to other similar groups or events (Rotter, 1954). The prediction of outcomes is based on previous experiences in similar situations. The generalised expectancy across situations influences an individual's problem solving skills (Phares, 1976; Rotter et al., 1972). This stimulus generalisation builds concepts about individuals, groups or events that could be good predictors of events or the concepts formed could distort reality about other people or events. Thus concept formation comes with prejudice if the stimulus at the concept formation stage was biased. Prejudice and discrimination are risk factors in HIV and AIDS risk reduction.

When a behaviour directed towards a goal is blocked, or fails to achieve the goal, the failure itself may be regarded as an indicator of a new situation requiring a new solution altogether (Rotter et al., 1972). The individual utilises the generalised expectancy of solving similar problems by looking at alternative techniques within their experience of dealing with the problem. The individual could trust or distrust previous methods or people who helped them solve a similar problem before. If the individual trusts their own effort and skills in solving a problem they are regarded as having an internal control of reinforcement. When the individual believes that the solution to their problem lies outside their control they are regarded as having an external control of reinforcement (Rotter, 1966; Rotter, 1975; Rotter et al., 1972).

2.4 Conclusion

Behaviour potential is the natural propensity of people to behave in predictable ways. The behaviour potential could be at cognitive, emotional or attitudinal level. Overt action or attitude could indicate behaviour potential. The behaviour potential of individuals and communities could be analysed and used to help health educators plan for behaviour change interventions. The expectancy that behaviour is rewarded positively or negatively helps individuals and groups to behave according to anticipated

health outcomes. Expectancies are learned conditions that shape behaviour according to previous reinforcements. Individual and group experiences determine the strength of their expectancies. When expectancies are high there is a corresponding increase in goal-directed behaviours towards reinforcing conditions. Health education facilitators could target the expectancy levels of participants before the commencement of the training programme. If expectancy is low that could imply low outcomes and low motivation to engage with new material or the desire to change lifestyles. Reinforcement value is important in the assessment of factors that sustain health risk behaviours of individuals and groups. The choices that individuals make of reinforcing conditions should be analysed in the context of HIV and AIDS risk. Cultural, political, social, and economic environments could be considered in training programmes as these contexts could influence the choice of reinforcers in sexual relations. The environmental condition of individuals and groups could be a risk factor in HIV and AIDS risk reduction. Behaviour change promoters could identify risk factors in the participants' environment and incorporate them into the training programmes. The psychological situation could affect the individual or group's health decision-making processes. In pursuit of personal health objectives, individuals and groups could exercise psychological freedom of movement by freely moving towards reinforcing conditions that reduce health risks. Individuals and communities could be at liberty to initiate health outcomes and engage in social action to attain good health as a constitutional and mental health right. The language that individuals use to communicate needs and intentions helps individuals maintain good relationships. A relationship in which people use inappropriate language to communicate needs and solve problems could pose health risks. Language forms part of an individual's knowledge in that the terms used to describe phenomena are based on individuals' past experiences. Favourable language is usually used to describe pleasurable experiences and negative language to represent images of frustration or negative reinforcement. The same positive images portrayed by language could be used to describe people who are liked and negative images to describe unsatisfying relationships. These images could result in the development of negativism and psychopathology among individuals who do not derive positive reinforcement from their social interactions. Positive language in HIV and AIDS risk reduction training programmes could help reduce stigma about HIV and AIDS among participants. In order to realise and derive health satisfaction, individuals and communities could set health goals for themselves. Minimal health goals for individuals and groups help shape the direction of achievement-oriented behaviours in health risk reduction. When confronted with problems, individuals and groups use learnt concepts or generalised expectancies of solving similar problems to deal with current and anticipated problems. If concepts are learnt correctly they guide human behaviour in choosing the most appropriate solution to a problem. The generalised expectancy of an individual influences them to have either an external control of reinforcement or internal control of reinforcement.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

This chapter reviews literature on locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk. These variables are discussed in the context of health risk and HIV and AIDS risk reduction.

3.2 Definition of locus of control

Locus of control is referred to as the internal versus external control of reinforcement (Rotter, 1966, 1990). Internal versus external control refers to the degree to which persons expect that a reinforcement or an outcome of their behaviour is contingent upon their own behaviour or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable (Rotter, 1990). The locus of control construct was developed in 1966 from Rotter's social learning theory of personality. The locus of control-based training programme was built on the basic assumption that personality is shaped by the interaction of the individual and their meaningful environment (Rotter, 1954, 1966, Rotter, 1990; Rotter, 1992). Locus of control is a construct that could help researchers understand and predict human behaviour in various health contexts.

The role of reinforcement, reward, or gratification is central to the acquisition and performance of skills and knowledge (Rotter, 1966). Rewarding conditions motivate individuals and groups to behave towards the attainment of goals. Individual differences are noted in generalized expectancies for reinforcement. An event regarded by some individuals or groups as a reinforcement or reward may be differently perceived and reacted to by others (Rotter, 1966). One of the determinants of this reaction could be the degree to which the individual perceives that the reward follows from, or is contingent upon, their own behaviour or attributes versus the degree to which they feel the reward is controlled by forces beyond their control and may occur independently of their own actions (Rotter, 1966). The effect of reinforcement on behaviour change depends on the perception of the individual that there is a causal relationship between their own behaviour and the reward they receive (Rotter, 1966). This perception runs on a continuum of internal versus external control of reinforcement. Thus locus of control is not a fixed variable; it runs on a continuum of extreme internality and externality. When a

reinforcement is perceived by the individual as following some action of their own but not being entirely contingent upon their action, then, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding them (Rotter, 1966). When the event is interpreted by the individual in this way, it is regarded that the individual has an external locus of control orientation (Rotter, 1966). If the individual perceives that the event is contingent upon their own behaviour or their own relatively permanent characteristics, the individual is regarded as displaying an internal locus of control orientation (Rotter, 1966).

It is important to note that locus of control is both a generalised expectancy for reinforcement and a situation-specific expectancy for reward (Phares, 1976). The belief in personal control or lack of it is both a general disposition that influences the individual's behaviour across a wide range of situations and a rather specific belief that may apply to a limited number of situations (Phares, 1976). The implication of this concept to health education and training is that some individuals tend to believe that they have a generalised restricted control over their lives while in some specific psychological situations they could feel that they can exert much control over their lives (Phares, 1976). Learning and behaviour in specific situations are different when individuals perceive that they control the contingency between behaviour and reinforcement and when they perceive that they lack such control (Lefcourt, 1976; Phares, 1976). This belief in control perceptions distinguishes, in behavioural terms, individuals with an internal locus of control and individuals with an external locus of control. It can thus be posited that locus of control changes with situations and experience and it is influenced by an individual's generalised and situation-specific expectancies in obtaining the desired goals.

3.3 Modification of locus of control through experience and training

Locus of control is not a fixed variable or a trait or typology (Allport, 1937; Catell, 1946; Freud, 1927; Lefcourt, 1976; Rotter, 1954; Rotter, 1966). An individual's locus of control is often inferred from momentary expressions of their sense of causality, which, when examined at different points in time could be relatively consistent and stable (Lefcourt, 1976). Locus of control could be expressed in remarks that individuals make in response to questions of causality. In fact, researchers establish an individual's locus of control by analysing the self-report responses made by the individual on measures of locus of control (Lefcourt, 1976; Phares, 1976). Individuals have a natural tendency to change their minds or constructions of reality in face of new evidence, experience or training although they often revert to prior positions or remain steadfast in their earlier positions despite receiving overwhelming evidence to the contrary (Lefcourt, 1982; Younger, Marsh, & Grap, 1995).

In view of the fact that locus of control is a variable that can be changed through training, health educators could shift participants' locus of control orientation from external locus of control to internal locus of control orientation (Lefcourt, 1976, 1981, 1982, 1983; Phares, 1976). The assumption taken by a health educator or counsellor who uses social learning theory to change behaviour through training or counselling is that an individual is capable of changing their health risk behaviour (Bleiberg & Markowitz, 2005; Lecourt, 1976). It is the individual who is capable and responsible for bringing about change in their lives. In fact, psychotherapy and other health risk reduction interventions are largely built on the premise that individuals, despite their personality, can change for the better. They can find their way in unpredictable psychological situations (Singer, 1965). Locus of control training programmes for behaviour change in health settings are meant to assist the individual in learning and self-development so that they can become self-directed, assertive and free to pursue satisfaction in terms of their own goals of living (Bruch, 1974; Hall, Hall, & Abaci, 1997).

There are early studies which indicate that locus of control changes with new experiences and that it changes over time. It was established that the longer an individual held an administrative position in the upper echelons of government, the more internal they became (Harvey, 1971). In a study in which a group of university students was affected by the outcome of lottery results, it was confirmed that the majority of the students became external in locus of control orientation after the event (McArthur, 1970). In a study in which university students participated in elections it was found that the scores obtained on the day the students lost the election to an opposition candidate changed from internal to external locus of control (Gorman, 1968). Locus of control also shifts with changing life events. In a study in which participants received trauma counselling in a crisis centre for six weeks, it turned out that participants' locus of control shifted from being external to internal locus of control (Smith, 1970). Individuals who experienced traumatic life events shifted from being internal in locus of control to being external in locus of control. However, as the crises were being resolved through training and psychotherapy, a return to a more internal control position was reached (Lefcourt, 1976). These studies indicate that locus of control largely shifts according to the prevailing environmental conditions.

In educational situations, locus of control could be changed through new teaching and learning experiences. Deliberate attempts were made in previous studies to change the locus of control orientation of students with a great deal of success in some situations and negative results in other instances (Reimanis, 1971). Teaching methods and learning objectives were modified in schools and colleges to inculcate internal locus of control values and feelings in the students (Reimanis, 1971). Training sessions were held to identify and use reinforcement principles to modify personality towards internal locus of control. Among college students, counselling sessions aimed at altering

students' locus of control with statements such as "What could you have done about it?", or "What do you want to do?" resulted in students who initially had an external locus of control showing internal locus of control orientation (Reimanis, 1971). In the training sessions, the counsellor replaced external control reflecting statements such as "I am in college because my father wants me to be an optometrist" with internal statements such as "I am in college because I want to be an optometrist" (Reimanis, 1971). In these training programmes and individual counselling sessions, participants were encouraged to focus on their own health, vocational and educational goals. The locus of control change training methodologies challenged participants to discuss the problems they were experiencing and how they could achieve their goals and ambitions (Lefcourt, 1982; Reimanis, 1971). Similar locus of control change statements could be used in HIV and AIDS risk reduction as a way of modifying locus of control towards internality.

The locus of control change training sessions helped participants change behaviours and attitudes showing externalisation of problems towards internalisation of control. The training programmes assisted participants identify health situations and helped them assess what role they could play to improve their health. Participants were trained how to focus on personal intentions and internal thoughts in order to achieve both immediate and long-term goals (Lefcourt, 1976; Phares, 1976). Most of the locus of control change training programmes showed a substantial gravitation towards internality among participants. At the end of most of the training sessions, it was shown that a greater number of participants began to model the counsellor's style of questioning and to talk more about their own responsibility for maintaining good health and solving interpersonal problems (Lefcourt, 1982; Phares, 1976). In addition, behavioural indications of internality such as taking a new apartment, changing study programmes, seeking out lecturers and tutors for assistance and motivation for individual health improvement were noted among participants at the end of the training programmes (Lefcourt, 1976). In subsequent training programmes in colleges and universities, emphasis was placed on encouraging students with an external locus of control to set realistic goals for themselves, know their strength and weaknesses, determine concrete action they can take now in order to reach their goals, consider how they can tell whether they are approaching their set goals and to establish whether their behaviour is having the desired effect in the attainment of set health objectives (deCharms, 1972; Lefcourt, 1976). The other aspects of locus of control change training included the development of concepts such as: self-concept, achievement motivation, realistic internal goal setting, planning skills, personal responsibility, feelings of personal causation, internal determination of instrumental activity, reality perception, and self-confidence (deCharms, 1972; Lefcourt, 1976; Phares, 1976). It was also observed in these studies that, generally, students whose scores shifted from external locus of control to internal locus of control after training showed stable

changes in personality over time. Longitudinal studies indicated that internal locus of control orientation persisted over the years after training thus confirming the social learning theory argument that personality is a learned attribute which can be changed or modified with training.

Research on the change of locus of control orientation in clinical settings shows that health risk behaviours could be changed with training or therapy (Ong, 1994). Locus of control could be altered to desirable health levels among participants through training. In studies with individuals showing behavioural pathology or psychopathology it was observed that behaviour modification training, psychotherapy, and counselling strategies were effective in modifying locus of control. Health education training programmes could help individuals persist in the face of failure or relapse. Modification of locus of control through training could help individuals experiencing learned helplessness reaffirm themselves and set health targets for health improvement. External attributions for failure could result in external locus of control orientation and capitulation to actual failure. Health training for building internal stable attributions and internal locus of control in individuals could be useful in improving health attitudes (Dweck, 1975). Effective health training programmes seek to change external attributions in health control towards internality (Dweck, 1975).

Foulds (1971) found that college students who participated in therapeutic training sessions that aimed to change locus of control became internal in locus of control orientation after the sessions. Encounter group training sessions also yielded positive results in changing locus of control towards internality (Diamond & Shapiro, 1973). The fact that participants, clients, or patients improved in locus of control orientation after going through training sessions or therapeutic sessions on locus of control modification could be indicative of the effectiveness of behavioural interventions in changing personality (Lefcourt, 1976). In addition, locus of control change training helped college students with an external locus of control orientation eliminate self-defeating behaviours within a four-week training period (Parks, Becker, Chamberlain, & Crandall, 1975). Locus of control scores became more internal for participants who were in therapy than the control group thus confirming the social learning theory position that training or psychotherapy helps individuals restore self-determination (Dua, 1970; Frank, 1976; Foulds, 1971; Lefcourt, 1976; Nowicki & Banes, 1973; Wallston, 1978).

Recent studies have shown that locus of control changes with new learned experiences in educational, organisational and clinical settings (Bendik et al., 2009; Cohen & Fried, 2007; Hastings & West, 2009; Torres et al., 2009; Twenge, Zhang, & Im, 2004; Valeda, Caetano, Michel, Lyons, & Kavanagh, 2007). Locus of control research in universities could expect to find a change in locus of control of some of the students as a result of the transition from high school life to university life. For some students the challenges could result in the development of an external locus of control orientation

while those who can adjust to the new experiences could develop an inner-drive to control the environment. It could also be expected among first year students that the home environment, social-economic factors, culture, and religious beliefs could have an effect on their locus of control orientation as they grapple with challenges of the new university environment.

The difference in attributional behaviour and learning processes between individuals with an external locus of control and individuals with an internal locus of control is important in predicting behaviour in health settings. In this study, locus of control-based variables were investigated in a behaviour change training programme to reduce HIV and AIDS risk among university students. The locus of control-based variables investigated in this study were: social systems control, self-control, fatalism, achievement-oriented behaviour, delay of gratification, personal values and expectancies, and social alienation. These variables were considered to represent the main situational contexts in which locus of control could be changed in order to reduce health risks (Rotter, 1966). These contextual factors of locus of control were discussed in relation to training, behaviour change and health risk reduction. The survey of literature in this study also looked at patterns of HIV and AIDS risk among the youth in South Africa.

3.4 Social systems control and mastery over the environment

3.4.1 Definitions of social systems control and mastery over the environment

Social systems control refers to the ability or perceptions held by the individual that they are able to control or influence what happens around them in society (Phares, 1976). Mastery over the environment is the individual's belief that they can control their environment (Phares, 1976). Mastery over the environment as a personality attribute in locus of control is based on the first postulate of social learning theory which states that human behaviour is best predicted by observing the interaction of the individual and their meaningful environment (Goetzl, 2009; Rotter, 1954). Individuals with a strong desire to better their life conditions by controlling the environment are reported to have an internal control of reinforcement (Rhodes, Hergenrather, Bloom, Leichliter, & Montano, 2009; Rotter, 1966). Individuals with an internal locus of control generally work towards the improvement of their social, political, economic and psychological wellbeing. They are described as more active, alert, or directive in attempting to control and manipulate their environments (Bartram, Yadegarfar, & Baldwin, 2009; Lefcourt; Phares, 1976). In social learning theory, individuals high in social systems control can easily mobilise material resources, government institutions, non-governmental organisations and the corporate world to achieve health objectives and improve human welfare in general (Byma, Given, Given, & You, 2009; Lefcourt, 1983; Phares, 1976; Rotter, 1966).

3.4.2 Social systems control and information seeking behaviour

Individuals with an internal locus of control are effective in utilisation of cues to information (Czaja, Manfredi, & Price, 2003; Eng & Blanchard 2007). They look for the right information in order to understand and manage social situations and organisational systems (Brownstein, Bone, Dennison, Hill, Kim, & Levine 2005). Patients with a higher mastery over the environment would demonstrate a higher understanding of their health, type of illness, diagnosis and health improvement (Berridge, 2004; Lefcourt, 1976; Phares, 1976). The patients could be interested in causes of the disease, cure, and prevention methods. They are able to see the relationship between treatment and cure (Katerndahl, Parchman, & Wood 2009; Phares, 1976). Patients with an internal locus of control are more likely than patients with an external locus of control to understand the information given to patients by medical practitioners. They are generally satisfied with medical procedures because they look for information beforehand. They can gather information about their health by asking relevant people, reading around the topic, attending workshops about their health condition, buying relevant healthcare products to prevent diseases and behaving according to recommendations given by healthcare service providers. Individuals with an internal locus of control do not rely on secondhand information; they participate in health-related activities to acquire firsthand information. Their health decisions are usually based on correct information (Greenberg, Constantino & Bruce 2006; Lefcourt, 1976; Phares, 1976).

In organisations, individuals with high social systems control generally demonstrate a better understanding of organizational systems, working conditions, regulations governing employee conduct and factors that could affect organisational existence. The same behaviour was observed in prison inmates and hospitalised patients (Lefcourt, 1976; Phares, 1976). In social learning theory, it is argued that individuals with low levels of social systems control have a tendency to show correspondingly low levels of information acquisition in training programmes (Seeman, 1963). Individuals with an external locus of control have a low expectancy that their search for correct information in health promotion and risk reduction could have the desired impact. They may not look for information to protect themselves from diseases. Individuals with an internal locus of control could show higher levels of social systems control and information seeking behaviours even if the information has negative connotations (Phares, 1976). Internals look for information because they believe that they would need that information to deal adequately with their environment whereas externals would readily accept dependency on ``more competent others`` and thus have less need of information (Lefcourt, 1976). It is also argued in social learning theory that individuals with an external locus of control tend to be persuaded by sources of information that are attractive even if the information given is of little value, less meaningful, lacks evidence or scientific truth (Lefcourt, 1976; Phares, 1976).

In HIV and AIDS risk research, information seeking behaviour is associated with health preventive behaviour. Individuals who look for health information generally seek to promote personal health and community health. Information seeking behaviour could be in form of health workshop attendance, visiting primary health centres for information, consulting health educators for disease prevention and purchase of healthcare products for oneself, the family and others. Health information seeking behaviour could also be characterised by the utilisation of health information from the mass media such as newspapers, magazines, books, HIV and AIDS education brochures, television programmes, radio programmes, and use of the internet to get an in-depth knowledge of the subject (Harrison et al., 2000; Hugo, Boshoff, Traut, Zungu-Dirwayi, & Stein, 2003; Pronyk, Makhubele, Hargreaves, Tollman, & Hausler, 2001).

3.4.3 Social systems control and personal power

Power is behaviour that is exercised by individuals in service of particular outcomes (Phares, 1976). Personal power is based on genetic and learning factors and it influences individuals to behave in certain ways to satisfy their power needs. In social learning theory, power is a psychological need that individuals use to obtain rewards. The psychological need of dominance in social learning theory is defined as the need to control the actions of other people, including family and friends; to be in a position of power, to have others follow one's ideas and desires (Rotter, 1954; Rotter & Hochreich, 1975). Personal power influences sexual relations. There is need to assess its influence in HIV and AIDS prevention and control.

Power can be described as the individual's confidence or belief in self-efficacy. Locus of control influences power perceptions of individuals and groups. Individual or group power behaviours could be influenced by needs and expectancies about getting the desired outcomes. Individuals with an internal locus of control are more likely to use power constructively to influence decisions of social, political, economic and health institutions (Lefcourt, 1976; Phares, 1976). Individuals with an external locus of control are reported to exhibit low levels of personal power to influence events. They could have the belief that they are not effective in controlling the occurrence of rewards in their lives, or the power to engage in actions calculated to attain power or influence over the environment (Phares, 1976).

In HIV and AIDS risk research, powerlessness is associated with health risks. Individuals who are reported to perceive themselves as less powerful than others are more likely to report experiences of hopelessness, meaninglessness, depression, dissociative disorders or psychosomatic complaints (Alloy, Abramson, Meltalsky, & Hartlage, 1988; Elwood, Williams, Bell, & Richard, 2002; Israel, Checkoway, Schulz, & Zimmerman, 1994; Margaretha, 2004; Rissel, 1994; Seeman & Lewis, 1995; Wallerstein, 1992). Powerlessness could be a risk factor in sexual decision-making processes,

negotiation for safer sex and HIV and AIDS risk reduction in South Africa (Ackermann, De Klerk, 2002; de Catanzaro (1981; Gilbert & Walker, 2002; Varga, 1997).

3.4.4 Social systems control, political affiliation and involvement

Individuals with an internal locus of control are more likely to be interested in politics than individuals with an external locus of control (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Involvement in politics indicates a willingness to shape political outcomes for the betterment of human welfare and health. If there is bad governance, it is the people who unite for a common purpose to change their way of life by involvement in local government and affiliation to political parties (Cameron, 1996; McEwan, 2003). Health laws and policies are made in parliament so it is important that individuals with the desire to have a personal influence on laws and policies of the country participate in such projects (Cameron, 1996; McEwan, 2003; McIntyre & Klugman, 2003). In social learning theory, such efforts are regarded as attempts to control the environment and to have influence on people in decision-making positions. It is also a demonstration of the individual's belief in democracy; that their collective action can bring about the desired health outcomes.

In South Africa, health policies are amended from time to time if individuals, civil society and political parties make representations to parliament to change some of the health policies. Such political action in social learning theory is necessary for social change and healthcare improvement (Braa & Hedberg, 2002; Braa, Monteiro, & Sahay, 2004; Campbell, 2004; McIntyre & Gibson, 2002). The public perceptions of health inequality in South Africa could be addressed by communities lobbying their political parties from grassroots level up to parliament to improve service delivery (Benatar, 2004; Campbell & Mzaidume, 2001; Castro-Leal, Dayton, Demery, & Mehra, 2000; Deaton, 2003; Fassin & Schneider, 2003). Health educators using locus of control-based intervention programmes could incorporate political involvement in health delivery as a critical component of health training outcomes. Since political attitudes are learned experiences, the involvement of communities in political activism could help modify locus of control orientation of group members towards internality (Lefcourt, 1976; Phares, 197; Rotter, 1976). In South African universities, students are free to join any political party and advance health rights on campus. Students could invite senior members of their political parties, senior government officials, medical aid societies and the university council to a health dialogue in which students' health issues are discussed (Bundy, 1987; Diamond, 1994; Randall & Svasand, 2002; Southall, 2001).

3.4.5 Social system control, civil rights and social change

Individuals with an internal locus of control are more likely than individuals with an external locus of control to participate in civil society demonstrations for health improvement and litigation for individual and community health rights (Gore & Rotter, 1963). The effectiveness of individuals with

an internal locus of control is demonstrated by their involvement in civil rights activities (de Jonge, Dormann, Jansen, Dollard, Landeweerd, & Nijhuis 2001; Phares, 1976). Social protest for health is considered as healthy behaviour in social learning theory because social action shows that individuals and communities are utilising their meaningful environment in order to satisfy their psychological needs. Social action for better health could protect individual and group psychological needs such as recognition-status, dominance, independence, protection dependency, love and affection, and physical comfort (Rotter, 1954, 1966; 1982; Rotter et al., 1972; Rotter & Hochreich, 1975). This inner-directed behaviour for social change is characterised by such behaviours as attending rallies, workshops, conferences and meetings, signing petitions to the municipal authority, city health department, Member of the Executive Council for Health or Minister of Health. Communities could write to the news media, both print and electronic, explaining their health situation. They can invite members of the media to witness their protest for health improvement and film it for a wider broadcast coverage. Individuals and groups could march to the city centre holding placards, banners, and flags asking for a response from local government or any other health service provider about their health appeals. The health promotion groups could engage the police to maintain law and order as required of all peaceful demonstrations in South Africa (Baleta, 2003; Mifraftab & Wills, 2005; Hayes, 2000; Phares, 1976). In South Africa, the right to health is a fundamental human right (Republic of South Africa, Act No. 108, 1996). Peaceful civil protest and litigation for health service delivery are group behaviours safeguarded by law to allow individuals and communities to access health care services and products (Bond, 1999; Heywood, 2003; Jacobson, & Warner, 1999; Singh, Govender, & Mills, 2007). For example, Treatment Action Campaign, a civil rights organisation has protested on several occasions and sued the South African government for failing to provide adequate antiretroviral drugs for resource poor communities (Berger, 2002; Endresen & Von Kotze, 2005; Friedman & Mottiar, 2005; Watson, 2006).

3.4.6 Social systems control and social class

In health promotion and provision of health services to individuals and communities, the issue of social class is controversial in many countries. Health seeking behaviours of resource poor communities and the privileged classes are documented as different. The attitude of government, private healthcare companies and medical aid societies towards the two social classes is different in most countries (Lefcourt, 1976, Phares, 1976; Rotter, 1966; Shin, 2006; van, de Walle & Kimberly, 1995; Weston, Churchyard, Mametja, McIntyre, & Randerla, 2007). In locus of control research, it is established that individuals from the working class or poor communities generally have an external locus of control orientation in health matters (Lefcourt, 1976; Harwood, Salsberry, Ferketich, & Wewers, 2007; Phares, 1976; Poortinga, Dunstan, & Fone, 2007; Rotter, 1966). It is argued that there

could be a significant relationship between socio-economic class and locus of control (Franklin, 1963). Among school children, social-class was found to have a significant effect on locus of control orientation although the distinction between rich and poor students in universities showed no distinct results (Battle & Rotter, 1963; Gore & Rotter, 1963).

It is argued that power is related to perceptions of personal control hence economically disadvantaged communities could develop an external locus of control over time due to hardships they encounter on a daily basis. Some of the children and adolescents from resource poor communities could be involved in home-based care programmes for their adult relatives and parents living with full-blown AIDS and some of the children and adolescents could drop out of school to look for income generating activities to support their families (Gwandure, 2007b). Money would be needed in the home for sending children to school, paying rent and rates, buying food and clothing, and for their general upkeep. Some families would borrow or depend on relatives with an income to support the family. The children from such backgrounds are likely to grow up with low expectations about success or good health (Lefcourt, 1982; Phares, 1976).

In South Africa, social class could have an influence on locus of control orientation. Population groupings called ``the previously disadvantaged groups`` were historically disadvantaged and now the South African government is making attempts to redress past imbalances with empowerment programmes and subsidised healthcare facilities to improve the welfare of this group. Research carried out in resource poor communities in South Africa indicates that the majority of rural, peri-urban, informal settlement dwellers, farm communities, hostel residents and shack dwellers, generally, have an external locus of control orientation (Greef & Aspeling, 2007; Nasser & Abouchdid, 2006; Peltzer, Kleintjes, Van Wyk, Thompson, & Mshego, 2008; Verme, 2008). External locus of control could be a risk factor in health promotion in South Africa (Stadler, Delany, & Mntambo, 2007; Thomas, 2002; Wild, Flisher, & Lombard, 2004). The social, economic, political and geographical marginalisation of these communities could result in loss of control perceptions and low expectancies for greater health achievements in their lives.

3.4.7 Social systems control and race

In locus of control research, Africans, African-Americans, and minority groups are generally reported to have an external locus of control orientation in most of the studies conducted in Africa and the US. In universities, African-American students, minority groups, and immigrant populations show significant levels of external locus of control (Rotter, 1966). It is also interesting to note that the same groups were also categorised as low socio-economic classes in the US (Lefcourt & Ladwig, 1965). This externality could emanate from perceived social class barriers, discrimination and racism by the majority Whites in the US (Phares, 1966; Rotter, 1966). Early researchers on external locus of control

among Black and immigrant groups mostly highlighted the externality without linking it to racial segregation, economic exploitation and political exclusion in the governance of the US.

Racism in South Africa as perpetrated by White supremacists was practised to extreme levels that eventually courted the imposition of international sanctions against the Apartheid government of South Africa before 1994. The South African society up to the present moment is apparently segregated according to racial, cultural, residential area, language, and socio-economic class although Apartheid was formally abolished by law. What features prominently at the moment is modern racism in which subtle forms of racism are still in place to perpetuate the marginalisation of Africans who constitute the majority of the population (De Beers, Smith, & Jansen, 2009; Duncan & Bowman, 2009; Pillay & Collings, 2008). While in the US African-Americans are a minority group with little political influence, here in South Africa, Africans are the majority who should ideally be in control of the social, political, and economic affairs of the country by virtue of their great numbers (Petersen et al., 2009). In terms of locus of control research, it could be expected that Africans in South Africa could be more likely than any other race to show an internal locus of control orientation because voting is used in most decision-making processes in local government in which they are the majority.

In terms of race and health, locus of control researchers have provided evidence that African-Americans and minority groups are reported to be worse affected by diseases and health conditions that could be prevented by a change of behaviour (Clark et al., 2001; Crook, 2002; Gorelick, 1998; Lefcourt, 1983). African-Americans are also prone to body injuries, self-damaging behaviours, and to be injured in violence that they initiate or take part in (James & Tylor, 2004; Hampton, Oliver, & Magarian, 2003; Josephs & Abel, 2009; Mawson, 2004; West, 2004; Williams, 1998; Williams & Williams-Mourns, 2000). The majority of them fail to seek medical attention for serious injuries or diseases because the majority of African-Americans do not have medical insurance. They are also reported to engage in substance abuse and a greater number of males than females go to jail by the age of thirty years. Africans and African-Americans appear to become more external with age as compared to Whites (Lefcourt, 1983). The African-Americans in the US generally show an external locus of control orientation which is generally associated with maladjustment, lower achievement levels, and powerlessness (Cabrera & Nora, 1994; Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Grant, Martinez, & White, 1998; Hammack, 2003; Lefcourt, 1983).

In South Africa, perceptions of social systems control and health promotion is now expected to improve with the abolition of Apartheid. During Apartheid, Blacks had poor healthcare facilities and were not allowed to access modern healthcare facilities that were reserved for the Whites (Benatar, 1997; Burke, 1985; Kale, 1995). Also, there is still an undercurrent perception that Apartheid is to blame for most of the health complaints and diseases affecting the previously disadvantaged groups in

South Africa (Marks, 2002; Petros, Airhihenhuwa, Simbayi, Ramlagan, & Brown, 2006; Schneider & Fassin, 2002). Apartheid could be associated with the development of external locus of control among Blacks since most of them were alienated from power and marginalised to deplorable standards of living (Adam, 1997; Magwaza & Bhana, 1991; Naidoo & Rajab, 2005).

3.4.8 Social systems control and gender

Early researchers on locus of control in the US argued that females had more tendencies than males to show an external locus of control orientation in various psychological situations (Schneider, 1968). University female students tended to prefer activities in which they did not have to rely mostly on their own effort (Schneider, 1968). Their preferences could have been affected by the masculine-feminine dimension which was prominent in the 1950s, 1960s, 1970s and 1980s in the US (Kim, & Kim, 2005; Lefcourt, 1976). It could have been less attractive for a woman to be too competitive and excel as men did; men felt such women were not sexy, attractive or marriageable (Campbell, Olson, & Kleim, 1990; Cherry & Deaux, 1975; Lefcourt, 1976; Levine, & Crumrine, 1975; O'Neil, 1981; Pearson, 1982; Phares, 1976). In a locus of control study of sexuality among university students, it was established that the majority of women with an external locus of control were not using healthcare products to protect themselves from diseases or pregnancy (Phares, 1976). They reported a great deal of sexual activity but tended to disdain the use of contraceptives (Phares, 1976).

In reproductive health research, women and girls are reported to be vulnerable to sexually transmitted diseases and HIV and AIDS infection (Pettifor, Van Der Straten, Dunbar, Shiboski, & Padian, 2004; Turmen, 2003; Zuma, Gouws, Williams, & Lurie, 2003). Biological factors can predispose women to sexually transmitted diseases and HIV infection. One of the biological factors that predispose women to HIV infection and sexually transmitted diseases is the large genital tract which could have a greater exposure to infection (Quinn & Overbaugh, 2005; Rees, 1998; Watson-Jones et al., 2007). Vaginal douching could make the wall lining vulnerable to infection in some women (Beksinska, Rees, Kleinschmidt, & McIntyre, 1999; Fonck et al., 2001; Myer et al., 2005). In Africa, some women use traditional medicine to make the vagina tight and dry. Dry sex is risky because it increases friction which may make condoms fail (Civic & Wilson, 1996; Levin, 2005; Scorgie, Kunene, Smit, Manzini, Chersich, & Preston-Whyte, 2009; Wojcicki & Malala, 2001). Young girls could be exposed to HIV infection if they are involved in coercive sex or forced sex through incest or statutory rape (Van Ettehoven, H. & Lucas, 2006). Their less mature tissue could be ruptured thus exposing them to infection. In most traditional African cultures sex is male initiated and male dominated to such an extent that women and girls might have limited opportunity to negotiate for safer sex (Eaton, Flisher, & Aaro, 2003; Harrison, Xaba, & Kunene, 2001; Kelly & Ntlabati, 2002). In the context of locus of control research, women and girls' perceptions of sexual health risks could make them feel less able to

protect themselves from infection. In regions where there are wars, famine, natural disasters and community violence, women and children suffer worse than men. Adverse conditions that affect children could be passed on to women through psychological processes such as secondary traumatisation because society expects them to be with the children in times of difficulties. It could be expected in most African countries that women`s locus of control could be affected by the prevailing social, political, health, and economic conditions.

Gender difference in locus of control could be expected in some of the African societies though African governments and civil societies are making efforts to eradicate gender discrimination. In patriarchal societies, men dominate women in legal, political, religious, social and economic spheres (Fay, 2009; Joiremann, 2008; Ntsebeza, 2006; Swaminathan, Walker, & Margaret, 2008). Women and girl children were not allowed to enter into legal contracts on their own without the father, son, or brother providing collateral security before independence in some African countries (Gouws, 2008; McClintock, 1991; Walker, 1982). Traditionally, an African woman was not expected to own large tracts of land in her name as she was considered a legal minor in most of the African countries (Cook & Ngwenya, 2006; Drimie, 2003; Wassenaar & Barsdorf, 2007). The family genealogy among Africans is traced through males in some African societies although there are also matrilineal socialites in Africa (Brodwin, 2002; Hammond-Tooke, 1985; Pillay, 2004). In some African communities, the father was or is still regarded as the head of the family followed by his sons while the mother and her daughters assume secondary roles in the family (Gyimah-Boadi, 1996; Magaliso, 1997; McEwan, 2000; Hirschmann, 1998). Although significant milestones have been reached in cultural education and amendment of laws that disadvantage women in South Africa, women and girls might still feel not treated the same as men and boys in society. This inequality could be evident in resource poor communities where men could abuse widows, orphaned girl children and female adolescent-headed households in South Africa (Aliber, 2003; Andrews, Skinner, Zuma, 2006). These adverse social conditions could affect girl children and women`s self-concept and locus of control.

In South Africa, gender studies have gained popularity with the attainment of democracy. New laws on gender promotion and equity are now in place and all forms of oppression and discrimination against women are prohibited. Women of all races in South Africa are regarded as a previously disadvantaged group and qualify for affirmative action programmes to boost their social, economic, political and health welfare. Some of the laws are: the Labour Relations Act, 1995, the South African Bill of Rights, 1996, Basic Conditions of Employment Act, 1997, Skills Development Act, 1998 and the Employment Equity Act, 2006. The Labour Relations Act seeks to promote the rights of all employees, collective bargaining, and prohibition of discrimination among other things (Amos & Ristow & Ristow, 2004). The South African Constitution upholds, among other things, the right of

everyone to equality, life, freedom, security, and the abolition of slavery, servitude, and forced labour. The Basic Conditions of Employment Act protects employees from being subjected to harsh working conditions. Conditions favourable to women are now incorporated and monitored by labour unions. Employees are now entitled to skills improvement in the workplace as enshrined in the Skills Development Act of 1998. Before the advent of democracy in South Africa, very few women had professional skills. Even though, the women with skills found it difficult to secure employment in male dominated organisations, be they, Black or White managed organisations. The Employment Equity Act directly motivates for the promotion of women irrespective of race, Blacks in general, and people with disabilities (Amos, Ristow, & Ristow, 2004).

In universities, Black students are now entitled to financial aid programmes sponsored by government and some private organisations to promote the educational needs of previously disadvantaged groups in South Africa. In addition, there are scholarships available to female students who manage to secure places for study at universities. These organisations work in conjunction with the Department of Higher Education and Training to improve tertiary skills in South Africa (Banya & Elu, 2001; Guillebeau, 1999; Jackson, 2002). In terms of social learning theory, it could be postulated that both male and female students in South Africa could have the same levels of locus of control orientation. In respect to the effort shown by government, civil society, and the corporate world in financing higher education for disadvantaged communities in South Africa, students' locus of control levels in universities may not be as adversely affected as they could have been before the advent of democracy.

3.4.9 Social systems control health risk reduction training

Health training programmes on social systems control could focus on skills that empower participants to be in charge of their health (Goetzal, 2009; Rotter, 1954). When individuals are trained to be in control of their health and are involved in activities that promote health they are more likely to become internal in locus of control (Carlson, 1977; Rhodes et al., 2009; Lefcourt, 1976). Health training activities could make individuals more active, alert, and directive about health issues affecting them. Individuals with an external locus of control could use skills they gained from locus of control training to understand their health conditions. They could manipulate their environments for better health (Bartram et al., 2009; Casper, 1990; Lefcourt; Phares, 1976). In their communities, individuals with an external locus of control could be trained to participate in health promotion programmes and mobilise material resources, government institutions, non-governmental organisations, and the corporate world to achieve health objectives and improve human welfare in general (Byma et al., 2009; Lefcourt, 1983; Phares, 1976; Rotter, 1966). Patients with an external locus of control could be taught assertiveness skills, personal effectiveness skills, and participative techniques in health

improvement and health recovery (Campbell-Heider, Tuttle, Knapp, & Faan, 2009; Tavakoli, Lumley, Hajazi, Slavin-Spenny, & Parris, 2009).

Training on social systems control includes of the need to improve health information seeking skills (Van Ettehoven & Lucas, 2006). Participants learn about the most effective method of getting current information on HIV and AIDS. The knowledge is used to prevent health risks (Hider, Griffin, & Coughlan, 2009; Prendiville, Saunders, & Fitzsimmons, 2009). The health training programmes could teach participants skills that are relevant in looking for the right information in order to understand personal health issues, manage social situations and to manage health programmes in organisational systems (Brownstein et al., 2005; Clarke, MacPherson, & Holmes, 1982; Cornuz, Humair, Seematter, Stoianov, Melle, Stalder, & Pecoud, 2002). The training could help participants with low levels of social systems control gain a better understanding of their health in respect to nature of illness, diagnosis, prognosis, and recovery (Berridge, 2004; Lefcourt, 1976; Phares, 1976).

Health training on personal health empowerment could make participants realise that education gives them the power to make decisions about their health. Participants are taught that powerlessness is a health risk. Participants could be taught how to deal with hopelessness, meaninglessness, depression, dissociative disorders or psychosomatic complaints (Elwood et al., 2002; Israel et al., 1994; Margaretha, 2004; Rissel, 1994; Seeman & Lewis, 1995; Wallerstein, 1992). The training could indicate how patients in various settings used social systems control to deal with health risks (Ackermann, & De Klerk, 2002; Gilbert & Walker, 2002; Varga, 1997).

Training programmes on health risk reduction could focus on the need for individuals and communities to be involved in the health policy and the politics of health in their countries in order for them to be able to manage and influence health decisions (Cameron, 1996; Kelly, St Lawrence, Diaz, Stevenson, Hauth, Brasfield, Kalichman, Smith, & Andrew, 1991; McEwan, 2003). Training programmes could encompass issues such as litigation for health, health inequality, and health service delivery in South Africa (Braa & Hedberg, 2002; Braa et al., 2004; Campbell, 2004; McIntyre & Gibson, 2002).

Health training programmes need to include the involvement of individuals with an external locus of control in civil rights movements for health improvement. They need to be trained in skills of proactivism for social change, accountability, and responsibility in health care (Castro-Leal et al., 2000; Deaton, 2003; Fassin & Schneider, 2003). The training programmes could look at current initiatives on health change in South Africa (Endresen & Von Kotze, 2005; Friedman & Mottiar, 2005; Watson, 2006).

Training programmes on the empowerment of social classes that were previously disadvantaged in health access and healthcare have demonstrated reduced health risks (Lefcourt, 1976; Harwood, Salsberry, Ferketich, & Wewers, 2007; Phares, 1976; Poortinga, Dunstan, & Fone, 2007). Health training in the area of social systems control has succeeded in reducing the prevalence of diseases such as malaria, tuberculosis, cholera, sexually transmitted diseases, and hypertension (Newport & Lang, 2009; Pakenham-Walsh & Bukachi, 2009).

Training on health risk reduction in the area of race and gender has shown positive results. Health education on social systems control has helped racially marginalised groups access health facilities, products, and services (Harris & Salway, 2009; Matharu, 2009). Health training has shown that gender-based health risks can be reduced through training (Calsyn et al., 2009; Kalichman et al., 2009). Training on social systems control could include gender related risks in HIV and AIDS risk reduction (Campbell et al., 2009).

Locus of control is a construct that is derived from Rotter's social learning theory to predict and explain human behaviour in ambiguous or novel situations. It is the degree to which an individual feels they are in control of events or that what happens around them is beyond their control. The construct is based on generalised and specific expectancies for reinforcement in various psychological situations. One of the contextual situations in which individuals demonstrate internality or externality is the concept of social systems control. Mastery of the meaningful environment is a quality exhibited by individuals with an internal locus of control. In social systems control, individuals and groups seek to change their lifestyles or health by engaging in behaviours such as: information seeking, empowerment seeking, and joining political parties, development associations, and pressure groups for social change. Individuals and groups with a healthy locus of control would seek to work with others to improve their health conditions despite the historical disadvantages associated with social class, race and gender. It could be argued from a social learning perspective that health promotion could be better achieved with the active participation of the communities affected by adverse conditions. Personal and community involvement in decision-making and social action is associated with later improvement in locus of control orientation of the participants towards internality since personality is a learned attribute that changes with new experiences. Even though it might be possible for participants to take a leading role in health promotion activities which could improve their locus of control orientation in the process, it should be noted that social, economic and political factors could, at times, inhibit health promotion initiatives in the South African context.

3.5 Self-control

3.5.1 Definition of self-control

Self-control can be described as an individual's perception that they can control themselves and their environment (Goggin, Malcarne, Metcalf, & Wallston, 2007; Phares, 1976). Self-control occurs when an individual attempts to change the way he or she would otherwise think, feel, or behave. It involves overriding or inhibiting competing urges, behaviours, or desires (Marshall, Vujanovic, Kutz, Gibson, Leyro, & Zvolensky, 2009; Muraven & Baumeister, 2000). Self-control or self-regulation involves self-monitoring, self-evaluation, and self-reinforcement (Martin, Meyer, Nelson, Baldwin, Ting, & Sterling, 2007; Lefcourt, 1983). It is also referred to as ego control which implies confidence and ability to deal with reality (Rotter, 1966). The individual compares their monitored behaviour to internalised standards in deciding whether or not self-reinforcement would be appropriate (Lefcourt, 1982; Rosengard, Clarke, Da Silva, Hebert, Rose, & Stein, 2009). The concept involves use of cognitions and self-statements to describe oneself, application of problem-solving strategies, the ability to delay immediate gratification, and perceived self-efficacy (Beukman, 2005; Rosenbaum, 1980). The relationship between self-control and locus of control could be useful in behaviour change training programmes in South Africa.

Individuals with high levels of self-control are also reported to have an internal locus of control (Flouri, 2006; Phares, 1976). Self-control is associated with health promotion and safer sexual practices (Garcia, 2006). According to social learning theory, self-control could refer to a broad range of situations in which the individual is able to manage themselves. The term "the self" could refer to the individual's subjective understanding of themselves based on their previous experiences (Rotter, 1954). The self is involved in integrating or changing attitudes or responses as a function of an individual's experience with stimuli other than the immediately present one (Rotter, 1954). The self could be a product of the subjective experiences of the individual and their evaluation of the psychological situation (Siahpush, Spittal, & Singh, 2008). So many psychological theories have different explanations for what the self is. In psychoanalytic terms, the self refers to the individual's ability to manage behaviour as a result the dynamic interactions or warring factions of the id, ego and superego (Freud, 1927; Rotter, 1954). Jung (1923) regards the self as composed of the "persona" which is the mask a person wears for the outer world and the "shadow" which is the part of the self a person hides away from others as well as themselves (Brophy, 2006; Rotter, 1954; Rowland, 2007). Thus, self-control according to Jung (1923) is the ability of the individual to manage both dimensions. Self-control could be described as the attempt of the individual to resolve inconsistency, incongruence, or conflict within the self (Lecky, 1945; Rogers, 1951; Rotter, 1954). Behaviour in

regard to this view is predicted as a resultant of internal forces. Self-control implies controlling these internal drives within the individual. Inadequate self-control or lack of it results in the individual being overwhelmed by the conflicting internal forces. However, Lewin (1938) conceived self-control as the individual's capability to control their behaviour as a result of external forces operating upon the individual (Fishbach & Trope, 2005; Rotter, 1954; Snyder, 2009). The self can be conceptualised as a force that activates the individual. In philosophical terms, the self is like the soul or entelechy which motivates and guides human behaviour towards self-fulfilment (Rotter, 1954; Siegel, 2005). In this context, the self may strive for integration, consistency, pleasure or self-expression (Rotter, 1954). The self is something that is generally thought to be within an individual, some Gestalt whole, different and separable from that individual's specific reactions to stimuli, and that it supplies an energy system which activates human behaviour (Rotter, 1954). Human motivation and directionality of behaviour result from the influence of the self. Self-control in this context could refer to the mind and body working in unison towards self-fulfilment. In social learning theory, the self can change with experience and training since it is a socially acquired human quality. In this regard, self-control can be learned or individuals and groups could be trained to develop self-control skills. Learning is not the result of some internal process that goes on inside the individual but a combination of an individual's internal processes and new situations or psychological stimuli (Edel et al., 2009; Rotter, 1954). The self changes with the individual's interaction with the total and meaningful environment.

The term "self-concept" is used to denote attitudes towards the self or conceptions about the self (Murphy, 1947; Raimy, 1948; Rotter, 1954). Self-control is influenced by the individual's ideas about themselves. In social learning theory, self-control as a behavioural response could be predicted or explained by analysing the stimuli and the meaning of the situation to the individual (Marsh & Craven, 2006; Rotter, 1954). Self-control is influenced by an individual's expectancy regarding the outcome of their action. It is contended in social learning theory that an individual's conceptions about themselves in a given situation is a major determiner of their behaviour (Rotter, 1954; Russo, Miller, Haan, Cameron, & Crotty, 2008).

Social learning theorists working with Rotter (1954) cautioned that the use of the terms "self-control", "self-concept", and the "self" should not be conceptualised as distinct and separate entities. They rejected the notion of a single "self-concept" that provides a person with a motive to behave in certain ways. They also rejected a conception of oneself in relation to a given situation as something that can be stated most usefully in terms of the self-concept as being negative, positive, or neutral (Rotter, 1954). They argued that simplified analyses of self evaluations may be too restricted in potentiality for differentiation among individuals and that may not be sufficient in a predictive theory of personality (Rotter, 1954).

In behaviour change training programmes, self-control could be targeted for modification or change. An individual's ideas about themselves and their health could be instrumental in effecting behaviour change. The objective of the health intervention or training programme could be that of identifying individuals' conceptions about themselves and how they protect themselves from diseases such as HIV and AIDS. Intervention programmes could identify risk factors and incorporate them into HIV and AIDS risk reduction programmes. Self-control in this study looked at the following main contexts of locus of control research: reaction to threat, resistance to influence, cognitive bases of control, helping behaviour, responsibility to others and personal effectiveness in health settings.

3.5.2 Self-control and reaction to threat

HIV and AIDS is a threat to human existence. When living organisms are facing a life threat or impending danger they react to the source of danger. People can exercise control in order to terminate the aversive stimuli. They show less fear when they are in control of the situation than when they cannot control the impending danger or aversive stimuli (Galliot, Schmeichel, & Baumeister, 2006; Mowrer & Viek, 1948; Tangney, Baumeister, & Boone, 2008). High levels of self-control can predict good adjustment, less pathology, better performance, and interpersonal success (Tangney, Baumeister, & Boone, 2008). Previous studies indicate that rats which could control electric shocks to avoid pain in an experiment experienced less psychological distress than rats which were unable to control the aversive stimuli. The ability to control an aversive stimuli itself was a great relief to the rats and not only the end of the electric shocks (Mowrer 1950). In a laboratory setting to demonstrate the effect of loss of control in animals, whiskers of rats were trimmed in one group and in another the whiskers were not cut. The results showed strange corkscrewing behaviours and unanticipated sudden deaths among the rats whose whiskers were cut (Richter, 1959). It was also observed in a study on swimming endurance that rats whose whiskers had been trimmed would swim around excitedly for a few seconds in a turbulent bath, dive to the bottom apparently in search of escape, and then, after swimming around for a short time below the surface, would suddenly stop and die (Lefcourt, 1982; Richter, 1959). The sudden deaths could be explained in social learning theory as resulting from emotional reactions to lack of self-control. The rats were restrained and confined in glass jars. The rough handling of the rats, lack of self-control and hopelessness of escape could have killed the rats (Lefcourt, 1976; Richter, 1959). The studies concluded that lack of freedom and control brings anxiety and distress to both animals and people (Dunn, Elsom, & Cross, 2007; Mowrer, 1950; Richter, 1959). Perceptions of threat and lack of self-control at the infrahuman and human levels have produced psychophysiological conditions such as the development of anxiety, depression, hopelessness, learned helplessness, ulcers, and sudden deaths related to voodoo, hexes, fright, the sight of blood, and hypodermic injections (Low, Lang, Smith, & Bradley, 2008; Lefcourt, 1982). The attributions of a

threatening event or disease and the reaction to it could be processed differently by individuals with an internal locus of control and individuals with an external locus of control.

Individuals with an internal locus of control can anticipate threat and deal with it adequately when it comes. Among high school students, failure was more devastating to students with an external locus of control than it was perceived among students with an internal locus of control (Phares, 1976). Students with an internal locus of control tended to forget about the failure and concentrated on improving grades in the next examinations. In social learning theory, it is expected that individuals with an external locus of control would not repress their feelings of failure since they have already accepted external factors as determining success and failure to a greater extent than students with an internal locus of control (Phares, 1976; Rotter, 1966).

When individuals are faced with a life threat there could be a tendency of denying the existence of the threat. The threat could be a health pandemic to which individuals are vulnerable unless they take steps to prevent themselves from infection. In locus of control research, individuals with an external locus of control are more likely to deny the existence of a disease or their proneness to it than individuals with an internal locus of control (Lipp, Kolstoe, James, & Randall, 1968; Phares, 1976). In studies about denial of health conditions, it was found that the denial was also found among people with disabilities and disabling conditions. Most of the people who denied their health conditions had an external locus of control. Lack of self-control could cause anxiety among individuals with an external locus of control. Individuals with an internal locus of control could also deny that they would be affected by the health threat because they know they would do something positive to prevent infection whereas individuals with an external locus of control could display a generalised fear of the unknown because they have experienced failure before. Both groups can deny vulnerability but based on different behavioural orientations. Internals can repress it as not worth fearing while externals may deny it on the basis that when it comes they can do nothing about it as they failed before. An external belief system seems to allow a greater willingness to admit threatening stimuli (Phares, 1976). Defence mechanisms used in denial of an impending health threat can result in anxiety (Berzonsky & Kinney, 2008; Efran, 1963).

In studies assessing fear and the retention of unfavourable information, it was established that externals could remember more unfavourable information about themselves than they would recall positive information about themselves under threatening conditions (Asadi-Pooya, Schilling, Glosser, Tracy, & Sperling, 2007; Sperling, Schilling, Glosser, Tracy, & Asadi-Pooya, 2008; Phares, Ritchie & Davis, 1968). The anxiety and fear showed by college students with an external locus of control could indicate that emotional disorders may imply a loss of inner control or self-control (MacDonald & Hall, 1969; Phares, 1976). If an individual with an external locus of control feels overwhelmed by a life

threat they usually respond to the threatening stimuli by seeking assistance or approval from others without first assessing their own competence to deal with the situation. They are normally open about their anxieties, fears or pathologies and are more likely to attend counselling sessions (Phares, 1976). The use of denying tactics and repression about personal threats could be found among individuals with an internal locus of control. They show perceptions of self-control and psychological adjustment (Byrne, 1964; Phares, 1976). In response to threat, it could be said that although both groups respond to it differently, individuals with an external locus of control react to threat with sensitisation or evidence of psychological distress or psychopathology whereas individuals with an internal locus of control generally show evasive behaviour or denial (Phares, 1976). Internals would not admit to difficulties or inadequacies because they feel they are in control of the situation. Health educators could assist both internals and externals understand the severity of the health threat and provide correct health preventive information that could be used as a shield against the health threats.

It has been observed that, in face of danger, physiological and cognitive process would be activated and individuals with an internal locus of control would not rest until they find a solution to the threat or contain the threat (Houston, 1972). In a study in which one group of participants was told that they could avoid electric shocks by not making mistakes and another group told that the shocks were unavoidable, it was established that participants with an internal locus of control showed greater physiological response than did externals. The conclusion made about the responses of externals and internals in the context of human or health threat was that individuals with an external locus of control (also called sensitisers in research on reaction to threat) view forces outside of themselves as being responsible for their fate and do not become very aroused physiologically when faced with life threats because they resign themselves to the situation (Houston, 1972; Phares, 1976). On the contrary, individuals with an internal locus of control (also called repressors in research on reaction to threat), become highly aroused when threatened but they were reluctant to report anxiety. Their heart rate was faster than that of externals. The interpretation of the findings was that individuals with an internal locus of control can be defensive about reporting anxiety and report less chronic anxiety than externals (Houston, 1972; Phares, 1976). Individuals with an external locus of control could be described as showing anxiety or maladjusted behaviour in reaction to threat and that they are also sensitisers. They also are more likely to react to life threats with less denial than individuals with an internal locus of control (Phares, 1976). At a psychological level, individuals with an internal locus of control may not show pathological reaction to threat but physiologically they get aroused in the face of a life threat. In health terms, physiological arousal could imply that the individual is physiologically and physically ready to take overt steps to work on the environment or problem posed by the life threat (Butterfield, 1964; Phares, 1976; Watson, 1967).

In HIV and AIDS research, the reaction of individuals and communities to the pandemic could be useful in the designing of training programmes for risk reduction. Some individuals and groups may show less fears towards HIV and AIDS while others might be debilitated by its effects to individuals and society (Alonzo & Reynolds, 1995; Brown, Macintyre, & Trujillo, 2003; Gysels, Pool, & Bwanika, 2001; Kalichman & Simbayi, 2004). Perceptions of self-control in managing threatening conditions could help individuals avoid health risks. Fear of diseases, preparedness and self-control could be instrumental in averting susceptibility to diseases (Abraham, 1998; Bandura, 2005; Cameron, 2003; Cameron & Leventhal, 2003).

Self-control can be useful in coping with debilitating health conditions and in the management of failure or health threats. There are individuals who can still experience failure or relapse despite attending many training programmes on behaviour change. Training individuals and groups using locus of control-based self-control approaches in managing relapse could improve the efficacy of behaviour modification programmes and counselling interventions (Lefcourt, 1976). Strong perceptions of self-control could assist individuals and groups maintain health risk reduction behaviours.

Coping with failure could be a distressing human experience. Individuals with an internal locus of control could react to relapse constructively. Action is required to deal with failure; hence the individuals could exercise self-control to manage the environment. After experiencing failure, some individuals could have a low expectancy of attaining valued goals. Instead, they could develop a high expectancy for receiving punishment (Phares, 1976). Also, after experiencing failure, some individuals could raise their expectations for success on the next occasion or they can reduce the value of the goal that was not achieved (Phares, 1976). Either alternative could reduce the discrepancy between expectancy and the value of the goal, and could thereby diminish the discomfort or anxiety arising from failure (Lefcourt, 1976; Phares, 1976). If the goal continues to be unattainable, normally, individuals reduce the value of the reinforcement. The value attached to goals is personalised, consequently, self-control helps the individual to forgo or forfeit some of the reinforcements in order to avoid self-harm, discomfort, anxiety or maladjustment in the face of failure or relapse (Phares, 1971).

Individuals with an external locus of control are more likely than individuals with an internal locus of control to devalue reinforcement in the face of failure (Phares, 1971). An external locus of control orientation seems to lend itself to the ``sour grapes`` approach of lowering the goal value following failure (Phares, 1971). This technique could be used by externals to avoid unpleasant levels of anxiety. Individuals with an external locus of control could be defensive and hold low expectations for success.

Furthermore, they can devalue tasks on which they failed or performed badly. In contrast, internals are more likely than externals, to actually increase the goal value or leave it intact in the face of failure (Phares, 1971). They would rather look for better ways of achieving those goals in the distant future but in the meantime acknowledging failure and still respecting the values they failed to achieve. Reduction of the goal value could result in demeaning or distorting values that are universally held as true or functional. In HIV and AIDS research, such reduction of the value of the goal or reinforcement and low expectancies for success could be risk factors in HIV and AIDS prevention (Floyd, Reid, & Wilkinson, 1999; Dorrington, 2001; Makgoba, 2000; Parkhurst & Lush, 2004). Distortion of facts, minimisation of HIV and AIDS risk, and denial of reality are vulnerable factors in health promotion.

In the face of a life threat, individuals with an external locus of control and individuals with an internal locus of control could have different attributions of responsibility. When an event occurs, causal inferences are made (Heider, 1958). Individuals attribute success and responsibility to internal factors such as personal skills, ability, effort or intelligence and attribute failure to external factors such as bad weather (Phares, 1976). When others fail, individuals and groups make the fundamental attribution error of attributing failure to those individuals' innate qualities such as their low intelligence or low ability and downplay the importance of external factors or environmental factors that could have been responsible for the failure (Follett & Hess, 2002; Gilovich & Eibach, 2001; Heider, 1958; Parker & Lawton, 2003). In locus of control research, individuals who have low levels of self-control would attribute individual failure to external factors.

Individuals with an external locus of control are more likely than individuals with an internal locus of control to attribute failure to adjust to health threats to external forces (Phares, Wilson, & Klyver, 1971). Attribution of responsibility and blame to other people following failure is associated with an external locus of control orientation. These are defensive behaviours evident among most individuals with an external locus of control and low perceptions of self-control (Campbell, & Sedikides, 1999; Miller, Gribskov, & Morteli, 1981; Rachlin, 1995). In HIV and AIDS risk reduction programmes, trainers could target the tendency of participants to displace self-responsibility to others. Health educators and clinicians could explore participants' and clients' blame patterns in HIV and AIDS prevention and control. Some individuals and societies could have traditional scapegoats and environmental disadvantages that could be used as excuses for not taking action to prevent the spread of HIV and AIDS (Liddel, Barrett, & Bydowell, 2004; Parker, Easton, & Klein, 2000; Stadler, 2003).

3.5.3 Self-control and susceptibility to influence

Human history is littered with stories of heinous crimes against humanity such as Apartheid war crimes in South Africa, the Holocaust in Germany, Israel's year-on-year brutality in Palestine, US war crimes in Iraq, the British war crimes in Afghanistan, Russian aggression in Chechnya and genocide in Rwanda. These events illustrate that people can be influenced to behave in ways that are astounding as long as there is reinforcement for such behaviour (Bolton, 2000; Luban, 2004; Kochavi, 2006; Mullins, & Rothe, 2008).

Some individuals can resist influence but others might find it irresistible if the reward is large and satisfying (Denscombe, 1993; Lefcourt, 1976). In reproductive health research, it has been established that some individuals and groups have been treated for all the major sexually transmitted diseases found in South Africa (Bauer, 2006; Dageid & Duckert, 2008). This susceptibility to diseases could be looked at from a locus of control perspective. In locus of control research, conformity and compliance are linked to an individual's locus of control. An individual's locus of control influences the way they behave under immense pressure or social influence.

Individuals with an external locus of control are more likely than individuals with an internal locus of control to be susceptible to social influence (Lefcourt, 1976). In an Asch-like conformity situation in which college students were assessed on their confidence statements, that is, how certain they felt about their own judgement on a ten-point scale, and to distinguish on each of the twenty trials the larger of the two groups of dots that had been presented tachistoscopically for a one second interval, it was found that students with an external locus of control stated most of their decisions after their supposed peers had publicly stated their judgements (Crowne & Liverant, 1963). Individuals with an external locus of control are more likely to be overwhelmed by the attitudes and responses of others. They do not base their judgement on their own independent assessment of the situation most of the time. The peers in these studies were collaborators who made prior arrangements with the experimenter to make wrong group judgements and then agreed as a group that the manipulated group decisions were correct. This situation is common in health, political, social, and economic affairs in which influential public figures could make the public believe an opinion, idea, or philosophy that was long disapproved and discarded by other countries as wrong or ineffective (Gibson & McIntyre, 2008; Kallmen, Andersson, & Andren, 2008; Koenig, 2006; Tabi, Powell, & Hodnick, 2006). Among peers, it is not unusual for a group to engage in risky group-think behaviours that members of the group as individuals would not want to be associated with (Fernandez, 2007; Nweneka, 2007; Racz, Gyarmathy, Neaigus, & Ujhelyi, 2007; Selikow, Ahmed, Flisher, Mathews, & Mukoma, 2009;

Solomon, 2006). Self-control diminishes among individuals with an external locus of control under peer influence.

In betting games, students with an external locus of control betted bigger sums of money conforming to group influence (Crowne & Liverant, 1963). Students with an external locus of control bet less when their judgements were independent of peers because they were influenced by group decisions. Students with an external locus of control betted more money as long as there was peer concurrence and encouragement that they were doing the right thing. The implication of the conformity studies to locus of control research is that self-control among individuals with an external locus of control is largely influenced by external forces or social influence. The Crowne and Liverant (1963) study indicates that when the stakes of success are high, individuals with an internal locus of control are more trusting of their own judgements than externals (Lefcourt, 1976). Individuals with an external locus of control tended to have more confidence in the consensual judgements of others than they did in their own independent judgements (Lefcourt, 1976; Phares, 1976).

Studies involving the use of projective tests to establish the difference between externals and internals on compliance concluded that individuals with an external locus of control were more gullible to the experimenter's smiles, vocal intonations, nodding, and other nonverbal cues when making choices (Phares, 1976). The findings suggest that internals are not more resistant to the experimenter's bias in general terms but that they resist unwarranted or exaggerated influence (Lefcourt, 1976; Phares, 1976). In a similar study with university students, the experimenter nodded and murmured to participants' responses to show agreement (Strickland, 1970). Participants were asked to select a word from a group of four words that went best with some common noun. The effect of reinforcement was expected to increase the choice of a verb as the proper response unbeknownst to the participant (Lefcourt, 1976). The participant was to be misled by the experimenter into doing what the experimenter wanted them to do without their consent. At the end of the experiment it was concluded that individuals with an internal locus of control tended to deny the influence of the experimenter and appeared to follow their own inclinations in regard to giving the correct response (Alegre & Murray, 1974; Getter, 1966; Jolley & Spielberger, 1973; Lefcourt, 1976; Strickland, 1970). Subtle manipulation could be a form of encouragement against an individual's conscience and could weaken self-control. Subtle influence could happen in sexual behaviours resulting in partners not behaving as they should to promote safer sex (Bauman, Karasz, & Hamilton, 2007; Kandala, Ji, Cappucio, & Stones, 2008; Lam & Barnhart, 2006; Sariola, 2009).

3.5.4 Self-control, interpersonal trust and gullibility

Interpersonal trust is important in human interaction. People might lose trust and become suspicious and disillusioned about the health care system, the professional competence of health personnel and consumers of healthcare products could be sceptical about the efficacy of HIV and AIDS training programmes in reducing HIV infections and AIDS-related deaths. As distrust increases, the social fabric disintegrates (Rotter, 1982). Unwarranted trust and suspicion in health matters could be a risk factor in the provision of an efficient health delivery system. Interpersonal trust and gullibility are associated with self-control.

In the context of social learning theory, interpersonal trust has been defined as a generalised expectancy held by an individual that the word, promise, oral, or written statement of another individual or group can be relied upon (Rotter, 1967; Rotter, 1980; Rotter, 1982). If expectancies that others' communication can be relied on are generalised from one social agent to another, then the individual would build up a generalised expectancy for trust of others that might be viewed as a relatively stable personality characteristic (Rotter, 1982). The concepts of self-control and trust in social learning theory can be viewed as learned experiences. In social learning theory, expectancies in each situation are determined not only by specific experiences in that situation, but also, to some varying degree, by experiences in other situations that the individual perceives as similar (Rotter, et al., 1972; Rotter, 1982). One of the determinants of the relative importance of generalised expectancies, as opposed to specific expectancies in a given situation, is the amount of experience one has had in that particular situation (Rotter, et al., 1972; Rotter, 1982). In predicting interpersonal trust among groups, both cross-situational generality and situational specificity variables should be considered. The generalised and specific expectancies in interpersonal trust are determined by the amount of previous experience with the particular situation being considered (Deutsch, 1960; Rotter, 1982).

There is a strong relationship between high trust and trustworthiness (Rotter, 1971). Individuals who act more trusting or say they are more trusting are themselves less likely to lie (Rotter, 1982). High trusters normally have high interpersonal trust and respect social or organisational systems while low trusters are usually low in interpersonal trust and are often involved in cheating (Boroto, 1971; Steinke, 1975). In a study on interpersonal trust with high school students as participants, it was established that low trusters committed more offenses relating to shoplifting than high trusters (Rotter et al., 1972). The self-reported responses of the students on the Interpersonal Trust Scale showed that low trusters were less hard-working than the high trusters. When low trusters were asked about

whether they felt that people in the two surrounding communities trusted students they replied that they showed significantly greater feelings of being mistrusted (Rotter, 1982).

Individuals with low levels of trust could feel that other people should not be trusted as well. There could be less moral pressure on them to tell the truth and under some circumstances they may feel that lying, cheating, and similar behaviours could be rewarding (Rotter, 1982). Cheating is a risk factor in sexual relations. High trusters are generally more conventional and more moralistic than low trusters in social learning theory of personality research (Rotter, 1982). In social situations, a sense of trust for the work of others can bring about confidence in the service offered. In health settings, less trusting patients could waste resources in terms of medical costs and time spent on them by health personnel if, in the end, they do not trust the efficacy of a treatment or adhere to prescribed medical regimens.

Gullibility has been defined as naïveté in social situations (Rotter, 1982). It is the act of believing another person when there is some clear-cut evidence that the person should not be believed (Rotter, 1982). For an individual to be labelled as gullible to lies, they could have succumbed to similar lies before (Rotter, 1982). The liar could have lied to the victim once or more times or that most people could consider the liar's statements to the victim as implausible and not worth paying attention to. Low trusters are more gullible to deceit than high trusters. Individuals with a tendency of depending on others for help are more likely to be gullible (DiClemente, & Wingood, 1995; Rotter, 1967). Gullibility in HIV and AIDS risk reduction could be reduced by encouraging partners to use condoms consistently and not to rely on what partners would say about their HIV status without taking the HIV test.

In locus of control research, high trust correlates positively with internal locus of control while low trust correlates with external locus of control (Wright & Shear, 1976; Rotter, 1982). In health education training interpersonal trust is important in building confidence between facilitators and participants. The belief of participants in the efficacy of the training intervention could bring about behaviour change while mistrust could spoil the working relationships between health educators and participants. Training health participants in the use of self-control skills to deal with externality and gullibility could reduce health risks. Individuals with low interpersonal trust skills in sexual health matters could be trained in self-control skills, attitude change skills and prosocial behavioural skills.

3.5.5 Self-control and attitude change

Self-control is involved in the process of changing attitudes. Events could have an impact on the individuals' self-concept and the individual could consequently change their attitude towards certain events, individuals or groups. In situations where individuals could feel they have less control of

themselves, it is expected that individuals with an internal locus of control might avoid such situations while individuals with an external locus of control might enjoy situations in which their individual perceptions of self-control and responsibility are diminished. They may not benefit from negative experiences associated with change of attitudes and behaviours towards self-regulation and autonomous behaviours.

In attitude change studies, locus of control researchers use communication models to assess the effectiveness of the communicator in bringing about attitude change in the receiver. In one study, the researchers argued that the status or prestige of the communicator can bring about attitude change among receivers with an external locus of control (Ritchie & Phares, 1969). They contended that individuals with an external locus of control would exhibit greater change in attitude following exposure to an argument emanating from a high-prestige source than one from a low-prestige source (Phares, 1976). It was also expected that individuals with an external locus of control would show more attitude change than individuals with an internal locus of control following exposure to a high-prestige source (Phares, 1976). In these studies, participants filled out a questionnaire on a survey about their attitude towards national budget expenditures. The same questionnaire was filled out again after two weeks. During the two-week period, half the participants received arguments attributed to a prestigious national authority while the other half received arguments attributed to an obscure graduate student in a small college (Phares, 1976). The groups were matched for the initial interviews. The findings of the study were that externals changed more in response to a high-prestige source than to a low-prestige source and they also changed more than internals when both received a communication from a high-prestige source (Phares, 1976). Individuals with an external locus of control are not only uniformly susceptible to influence attempts in all situations; they are markedly affected by the prestige of the communicator (Lefcourt, 1976; Phares, 1976). In addition, individuals with an internal locus of control seem more responsive to the content of the communication in the light of their previously held views than the prestige of the source or communicator.

In similar studies, it was found that individuals with an external locus of control would be persuaded to change their attitudes simply by the attractiveness of the communicator despite the relevance or importance of the message conveyed. Individuals with an external locus of control tended to accept influence to the same degree from a high-prestige source whose expertise was irrelevant as they would from an expert whose knowledge was relevant to the issue under consideration (Lefcourt, 1976; Phares, 1976). In contrast, individuals with an internal locus of control were more discriminating in their judgements about the abilities of a reputed expert and thus internals were more willing to accept influence from the relevant prestige source than from the irrelevant one (Lefcourt, 1976). Internals are

not simply resistant to any influence but are discriminatory about what influence they will accept. They would not accept authority on face value without relevant evidence of credibility.

In health communication it was found that individuals with an internal locus of control would be more likely than individuals with an external locus of control to change attitudes and health habits after receiving a health message or communication about the health hazards of certain lifestyles. It was reported that more internal males quit smoking for a specified length of time than did males with an external locus of control after hearing the United States Public Health Service Surgeon General's report concerning the link between cancer and cigarette smoking (James, Woodruff & Werner, 1965; Lefcourt, 1976). In role plays in which participants acted out the roles of physician and patient to change smoking attitudes, the findings were that the greatest changes in smoking behaviour occurred among individuals who had an internal locus of control and who also believed in the link between smoking and illness (Lefcourt, 1976).

The study of self-control, attitude change and locus of control could shed more light on risk HIV and AIDS behaviours in South Africa. The attractiveness of the communicator could be likened to the attractiveness of partners in sexual relations. Attractiveness and sexual temptation could affect individuals with an external locus of control worse than individuals with an internal locus of control. Behaviour change programmes on HIV and AIDS risk focus on attitude change as central to risk reduction. Behaviour change theories and models argue that it is an individual or group's attitude which influences behaviour. A change of attitude could, ideally, come with a corresponding change in behaviour (Ajzen, 2005).

3.5.6 Self-control and morally relevant behaviour

Resistance to influence is helpful in maintaining moral conduct in the face of social influence. Resistance to peer pressure is a leadership quality that helps individuals, groups, and organisations survive threats by sticking to moral or ethical ways of living or conducting business (Baler & Volkow, 2006; Gailliot, Schmeichel & Baumeister, 2006; Kim & Choi, 2007). Self-control or self-regulation is essential in maintaining healthy lifestyles and ethical conduct in diverse contexts.

Individuals with an internal locus of control are more likely than individuals with an external locus of control to be circumspect in the face of pressure to yield to social influence. Moral responsibility is associated with self-control and locus of control (Johnson, Ackerman, Frank, & Fionda, 1968). In studies investigating the relationship between locus of control and resistance to temptation as part of a project concerned with moral development and personal adjustment, it was established that internality was associated with moral values. The method used was that of presenting a story in which the hero or heroine of an incomplete story experienced social pressure directing the hero or heroine toward the

violation of some social norm. For example, the hero could be involved in tempting situations such as drug use, illicit sex or some other undesirable behaviour. Participants who were university students were asked to complete the stories in which the hero or heroine was either at the point of decision or when the hero had to face the consequences of their acts. The findings concluded that the more internal a student was, the more likely they were to complete the stories in which the hero or heroine resisted pressure (Lefcourt, 1976; Johnson et al., 1968). In instances when the hero yielded to pressure, participants with an internal locus of control were more likely than participants with an external locus of control to have the hero or heroine acknowledge guilt about having yielded to pressure (Lefcourt, 1976).

The researchers concluded that the relationship between locus of control and resistance to influence can be extended to moral decision-making processes. Further evidence provided indicated that there was a link between locus of control and resistance to temptation (Johnson & Gormly, 1972). In these studies, a greater percentage of students who cheated in examinations had an external locus of control. Locus of control was used successfully to predict cheating behaviours among students (Karabenick & Srull, 1978; Lefcourt, 1976; Srull & Karabenick, 1975). It was also noted that even students with an internal locus of control, to some extent, showed cheating behaviours on tasks that required the use of learnt skills but not on guessing games (Srull & Karabenick, 1975). Students with an external locus of control cheated more on tasks requiring chance or luck responses. The researchers contended that cheating behaviours are related to the nature of the task; internals could cheat in some places in search of answers while externals may cheat to avoid personal involvement.

Individuals with an internal locus of control were found to be helpful to others in difficult circumstances. They would help in situations that could be risky to their own health or welfare. In terms of pro-social behaviour or altruism, internality is associated with helping behaviours (Midlarski, 1971). In a helping behaviour experiment with students, it was observed that students with an internal locus of control would help a fellow student to finish a task of sorting small objects into separate groups (Lefcourt, 1976; Midlarski & Midlarski, 1973; Ubbink & Sadava, 1974). . Individuals with an internal locus of control would be more tolerant of discomfort in doing what they consider to be correct (Lefcourt, 1976). This moral engagement comes with a moral dilemma of choosing a populist idea or course of action against others that can result in ostracism, loneliness and pain but enjoying freedom of conscience (Kalvemarks, Hoglund, Hansson, Westerholm, & Arnetz, 2004; May, 2001; Wardle, 1993). A greater percentage of individuals with an external locus of control were also found to agree with Machiavellianism attitude towards life that the outcome is more important than the means of obtaining rewards. This kind of approach is associated with immoral conduct, unethical values and mercenary attitudes (Bal, 1996; Martin, 1993; Miller & Minton, 1969; Rose-Ackerman,

2006). On Kohlberg's moral judgement scale, internals scored higher than externals on moral judgement maturity and principled reasoning (Alker & Poppin, 1973; Bloomberg, 1974).

Helping behaviour and altruism are qualities that are associated with morality and human development in health, economic, social and political spheres. In HIV and AIDS research, moral standards governing societies usually provide a base upon which behaviour change principles are built to guide behaviour. Behaviours that do not adhere to societal norms and values are usually reprimanded and discouraged in health education programmes because lifestyles should be viewed as morally correct. In cases where moral values and HIV and AIDS programmes on behaviour change are in conflict due to cultural or ethnic differences, it could be advisable to select the best way of providing information that is best understood by the target population without infringing their moral values, freedom of conscience, or religion.

3.5.7 Self-control and personal effectiveness

Individuals with an internal locus of control tend to have higher levels of self-control and mastery over their health (Elfstrom, & Kreuter, 2006). They take remedial action to correct personal shortcomings, confront challenging situations for answers, and they pursue dreams and ambitions that are achievable (Phares, 1976). When asked to provide self-ratings, individuals with an internal locus of control generally described themselves as active, striving, achieving, powerful, independent, and effective (Hersch & Scheibe, 1967). Internals usually have higher job ratings and personal qualities than externals (Tseng, 1970). Among university students, internals are usually office-holders as student leaders (Brown & Strickland, 1972; Silvester, Anderson-Gough, Anderson, & Mohamed, 2002).

Self-control and personal effectiveness are linked to cognitive processes that guide emotions and behaviour (Judge, & Bono, 2001). Individuals and groups strive to maintain their sense of personal causation despite the onslaught of bewildering situations that tempt them to surrender their sense of personal control and responsibility. In order to achieve personal or group effectiveness they continue to struggle for meaning in the face of pressures that threaten to destroy their individuality. Personal effectiveness is characterised by the ability to question assumptions, deliberate on formulated ideas, and paying special attention to information relevant to decision-making (Lefcourt, 1982). Personally effective individuals and groups would like to know about themselves, their capabilities, their limits, and their potentialities. Such individuals or groups are referred to in various theoretical frameworks as "open to experience", "non-defensive" or "self-actualising" (Lefcourt, 1982). In locus of control research such terms are closer in meaning to self-control and internal locus of control. In regard to personal effectiveness, individuals with an internal locus of control utilise cognitive skills such as

being cautious and calculating about their choices, involvements, and entanglements than individuals with an external locus of control (Lefcourt, 1982).

In a study linking locus of control to cognitive activity, researchers matched participants' knowledge about the disease they were suffering from with their locus of control (Ross, Kalucy, & Morton, 1983; Seeman & Evans, 1962). Patients with an external locus of control knew very little about the disease they were suffering from and being treated for. The patient ratings also showed that patients with tuberculosis who had an internal locus of control knew more about the disease and why they were taking medication and adhering to the instructions given by medical practitioners (Seeman & Evans, 1962). It was concluded that patients with an internal locus of control had high levels of self-control and were personally effective. They achieved effectiveness by availing themselves information even if the information had negative connotations for them. Patients with an internal locus of control acted on their own behalf to get what they needed, asked questions about their condition, actively used information gathered to improve their health and they adhered to given information on dosage. A similar study was carried out with prison inmates as participants. The results were similar to previous studies (Seeman, 1963). Inmates with an internal locus of control recalled more parole relevant information than inmates with an external locus of control. The study linked powerlessness and lack of self-control to lack of personal effectiveness. Individuals with an external locus of control were slow to assimilate new information and paid less attention to relevant information that governed their stay in hospital or prison.

In a study in which individuals with an internal locus of control and individuals with an external locus of control were compared with respect to their decision-making skills, it was established that individuals with an internal locus of control displayed better use of information for decision-making processes than individuals with an external locus of control (Phares, 1968). Participants with an internal locus of control provided more elaborate reasons than participants with an external locus of control. They also provided more correct answers than the externals. It was then concluded that internals make better use of information than externals despite the fact that both groups might have equivalent exposure to information (Lefcourt, 1976). Internals were superior in gathering information and using it.

The superiority of internals in cognitive characteristics is also evident in their ability to exclude intrusive thoughts when attempting to deal with an immediate problem. In one study, participants were asked to focus attention on two candle flames, one real and the other an imaginary flame. The results were that individuals with an internal locus of control were more successful in avoiding intrusions in both conditions than individuals with an external locus of control (Lefcourt, 1982).

Internals generally performed better than externals with regard to cognitive skills such as information seeking, knowledge acquisition and recall of information (Williams & Stack, 1972). Internals were better than externals in extracting cues that facilitate the making of accurate judgements (Lefcourt, 1982).

Training programmes on HIV and AIDS risk reduction seek to promote health by training participants to remember information they would use in risk health situations with their partners. Individuals and groups are expected to be proactive and effective in utilising acquired health preventive information in dealing with HIV and AIDS. In social marketing, the public is expected to look for health information and buy healthcare products to promote their health. Public broadcasters sometimes provide free healthcare information that the public is expected to remember and use in disease prevention. Information retention and utilisation is important in health education programmes. Health educators could target individuals with an external locus and package learning material in such a way that could be cognitively appealing and easy to understand or follow.

Attention skills are important in getting information from the source. Trainers ensure that participants are listening and retaining the information. Listening skills are important in information retention. Attention in social learning theory is defined as ways in which individuals focus upon cues of relevance for goal attainment (Lefcourt, 1982). In a study with university students, participants were asked to study an experimenter's two assistants who were collaborators in the experiment. Participants were asked to study the personality of the two assistants as they interacted with them. They were asked to pay particular attention to: eye contact, finding out as much information as possible about the person they were interacting with, facial expressions, manners, smiles, and exchange of pleasantries. The first experimenter's assistant behaved appropriately to the students but the second experimenter's assistant who was planted to behave in curious ways avoided eye contact, was restrained, aloof and unfriendly. It was hypothesised that the uncertainty caused by the behaviour of the second assistant would arouse more curiosity and attentiveness among students with an internal locus of control than among students with an external locus of control (Lefcourt, 1982; Lefcourt & Wine, 1969). The findings of the study were that students with an internal locus control made more observations than individuals with an external locus of control, about both the conventional and puzzling assistants. Internals recorded more observations of the quizzical behaviours of the second experimenter's assistant than the first assistant with conventional behaviours. They made more observations of the quizzical assistant's face and sought eye contact with him. Internals paid more attention to detail about the individuals they were interacting with. The unpredictable behaviour of the quizzical assistant aroused more curiosity among students with an internal locus of control than it did among students with an external locus of control (Lefcourt, 1982). The internals

wanted to make sense of the second assistant's verbal and nonverbal actions in order to resolve their uncertainties about the person they were dealing with.

In a simulated marriage game in which university students were led to believe that they were in a computer simulation study designed to determine the marriage suitability of several men and women, it was observed that internals and external differed in the way they paid attention to detail in matching partners for marriage. The students were required to organise information provided about individuals and decide who should marry whom (Phares, 1968). The results indicated that students with an internal locus of control were superior in acquisition and utilisation of information. They made more effective use of the information provided than did externals. They were alert and sensitive to cues provided by the environment. They controlled themselves in most of the situations. It was concluded that internals devote more attention to decisions about skill-related matters than do externals. They needed more time to make decisions and were more sensitive to meanings of cues or reinforcement (Julian & Katz, 1968; Lefcourt, 1967). Their attentiveness, concern, and interest changed with the task they engaged in. If the task offered challenges to compete or was considered as important, internals became more deliberate in their decision-making. The opposite was generally true of individuals with an external locus of control in attention studies; they tended to pay more attention to detail if the task at hand did not require the use of learnt skills but chance-determined success for which not much individual effort was required (Lefcourt, 1982).

In sexual health it is advisable that partners look for cues between themselves that could indicate health risks before engaging in sexual relations. In terms of locus of control research, partners should be circumspect or introspective about their sexual lives. What they do not like done to themselves is what they should not do to their partners. Regular health checkups and feedback to both parties could be helpful in promoting safer sex. It would be expected that university students would scrutinise their partners or love suitors to make sure that they do not end up being involved in sexual relations sexually risk individuals. Self-control and attention to detail could be important in reducing promiscuous and reckless sexual practices.

3.5.8 Self-control health risk reduction training

Locus of control has been used to train individuals with low levels of self-control to reduce health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Health training has been shown to be effective in the regulation of impulsive behaviours and in changing unhealthy eating and drinking habits (Goggin et al., 2007; Phares, 1976). Individuals with an external locus of control and low levels of self-control could improve their health habits through training (Marshall et al., 2009; Muraven & Baumeister, 2000).

Self-control training could focus on skills needed to reduce health risks in tempting sexual situations (Israel, Guile, Baker, & Silverman, 1994; Lefcourt, 1976; Phares, 1976). Participants are taught how to deal with their emotions as a reality and how they can best deal with health risks (Mowrer & Viek, 1948; Tangney et al., 2008). Participants are trained to deal with interpersonal skills and the role of the individual in controlling aversive stimuli or health risks (Tangney et al., 2008). Social learning theory has shown that training participants in locus of control-related self-control reduced health risks such as gullibility, sexual suggestibility, peer pressure, social compliance, and resistance to sexually risky practices (Bauer, 2006; Dageid & Duckert, 2008). Individuals are trained to be personally effective in health risk reduction (Burton, Pakenham, & Brown, 2009; Yun, Silk, Bowman, Neuberger, & Atkin, 2009).

There seems to be a strong association between self-control control and personal health control. In health settings, it could be postulated that individuals with higher levels of self-control are more likely to demonstrate higher standards of health-protective behaviours as well. Self-control is a subjective variable as it is understood in social learning theory. An individual's life experiences brings about fairly stable conceptions about the self and personality. It could be argued that the vicissitudes of human experience shape personality to a finer texture and that comes with the development of self-concepts in individuals. Self-control could be exercised at both the intrapersonal and interpersonal levels. With respect to psychoanalysis, self-control could be viewed as the ability of the individual to control the three internal, biological, or instinctual drives which are the id, ego and superego. Insufficient control of these internal forces could result in the development of anxiety or neurosis in individuals. The individual could also exercise self-control to maintain self-consistence at both the intrapersonal and interpersonal levels. Self-consistence brings about self-integrity which guides moral conduct or ethical behaviours in individuals. Individuals who can control themselves can also have mastery over the environment. They can work on the environment and withstand external forces that can distract them from getting desired goals. Self-control is like a soul which guides humanity. Self-control helps individuals deal with health threats, suggestibility, susceptibility to social influence, indulgence, interpersonal trust, gullibility, attitude change, change in morals, and personal effectiveness. Self-control is weakened when an individual's generalised expectancy for reinforcement is low and not contingent upon behaviour. In HIV and AIDS research, self-control could be useful in understanding the behaviour of individuals and groups in tempting sexual relationships, casual sex, the inhibition of sexual permissiveness, and resistance to unprotected sex.

3.6 Fatalism and health

3.6.1 Definition of fatalism

Fatalism is associated with superstition in a health context (Barroso, McMillan, Casey, Gibson, Kaminski, & Meyer, 2000; Skinner, 1971). It is a belief in supernatural forces as determinants of events and an individual's fate. Fatalism is the belief in fate, chance or luck (Rotter, 1966). Some individuals and societies have a fatalistic attitude towards life (Baron-Epel, Friedman, & Lernau, 2009; Schneider, Korner, Mehring, Wensing, Elwyn, & Szecsenyi, 2009). In social learning theory, fatalism is a learnt behaviour that reflects an individual or group's beliefs about natural phenomena. Instead of grappling with nature to find answers to solve present human problems, individuals and communities with a fatalistic attitude towards health challenges would avoid aversive situations and seek solutions from supernatural powers, fate, or some other external forces (Skinner, 1971). Fatalism is common in all societies of the world and it is expressed in various ways. There are laws, customs, and practices which legitimise the belief in fatalism and there are social and religious institutions which exist in all societies of the world to accommodate and protect such beliefs. These could be churches, mosques, sanctuaries, traditional sacred places, holy places, rain-making shrines, and some other places and objects of reverence. When individuals enter these holy places for advice or help they acknowledge that the supernatural forces would be in control of their life. The individual would take a subservient role to the deity or the supreme-being. The supernatural figure is known by various terms in different societies (Gwandure, 2006).

A belief in fate or chance was described as a barbarian approach to life and was generally characteristic of an inefficient society (Veblen, 1899; Rotter, 1966). A belief in chance or luck as a solution to one's problems was characterised by less productivity. The belief bears some parallel to the hypothesis that a belief in external control of reinforcement is related to a general passivity (Rotter, 1966). The belief in luck is related to or similar to a general belief in fate (Rotter, 1966). Fatalism is a defensive behaviour; it is an attempt to serve the psychological function of enabling people to preserve their self-esteem in the face of failure (Rotter, 1966). It curtails sustained individual or group endeavours and is thus associated with passivity, belief in supernatural forces, astrological phenomena and social loafing (Randall & Desrosiers, 1980; Rotter, 1966). Fatalism is associated with external locus of control and dogmatism in health situations (Sherman, Pelletier, & Ryckman, 1973). Individuals with an internal locus of control value tasks in which they use learnt skills while individuals with an external locus of control prefer tasks in which success is dependent on chance or luck (Rotter, 1966). Fatalistic ideas are based on chance-related success in disease prevention.

3.6.2 Human performance under skill and chance conditions

In studies about belief in an individual's own skills versus belief in chance factors in obtaining rewards, it is argued that individuals build up generalised expectancies for success. If an individual can deal with future events using acquired knowledge and experience and can perceive an event as following a preceding behaviour then the individual is likely to believe that there is a causal or invariable relationship between their behaviour and the occurrence of events (Rotter, 1966). In contrast, an individual who believes in randomness or chance factors in the occurrence of events affecting them would perceive reinforcement as not directly related to their own action but fate. If an individual perceives reinforcement as contingent upon his or her own behaviour then the occurrence of either a positive or negative reinforcement would strengthen or weaken the potential for that behaviour to recur in the same or similar situation (Rotter, 1966). If an individual sees reinforcement as being outside of his or her own control or not contingent, that is depending upon chance, fate, powerful others or unpredictable, then the preceding behaviour is less likely to be strengthened or weakened (Rotter, 1966). Individual or group learning under "skill conditions" and "chance conditions" are perceived differently by individuals with an internal locus of control and individuals with an external locus of control.

In social learning theory, it is argued that differences in individual behaviour are related to task differences along a dimension of "skill" versus "chance" conditions (Goodnow & Postman, 1955; Goodnow & Pettigrew, 1955; Rotter, 1966). Some individuals increase responses or behaviour in skill conditions while others increase responses in chance conditions (Cunningham, Hodgins, Toneatto, Rail, & Cordingley, 2009; Wyckoff & Sidowsky, 1955). Studies on skill versus chance conditions as they relate to human behaviour showed the "gambler's fallacy" tendency appearing in chance games or "guessing" problems (Cohen, 1960). The gambler's fallacy was characterised by the increase in responses or behaviours when reinforcement was negative. The gambling attitude motivated participants to anticipate winning in the next round through fate or luck. For some individuals, failure decreased responses; motivation was lessened in chance tasks as compared to skill tasks (Feather, 1959; Rotter, 1966). The gambler's fallacy was more noticeable among participants with an external locus of control than it was among individuals with an internal locus of control.

In a study that involved colour matching as an ambiguous task, half the participants were told that the task was difficult, only luck could help them, and the other half were told that success was a matter of skill (Phares, 1957). The results showed that the increments and decrements following success and failure, respectively, were significantly greater under skill instructions than under chance conditions (Rotter, 1966). Reinforcements under skill conditions had a greater effect on raising expectancies for

future reinforcements among participants with an internal locus of control (Rotter, 1966). It was also noted in this study that participants shifted or changed their expectancies more often under skill conditions (Rotter, 1966). In addition, the study indicated a strong trend towards unusual shifts in expectancies, that is, up after failure or down after success (the gambler's fallacy) under chance conditions (Rotter, 1966). The study indicated that individuals who believe in fatalism show motivated behaviours towards goals that can only be reached through luck otherwise the probability of success under ordinary conditions could be unrealistic or negligible. The belief is not supported by material evidence to prove the claim among individuals with an external locus of control.

In an extrasensory perception (ESP) type of study, two groups of participants were told that guessing on a task had been shown by scientists to be entirely a matter of luck and the other two groups were told that there was evidence that some people are considerably skilled at the task. The study sought to measure participants' extinction of verbal expectancies under skill and chance conditions. The results of the study showed that participants with an external locus of control worked hard under chance conditions while participants with an internal locus of control worked hard under skill conditions (James & Rotter, 1958).

In a study on growth and extinction of expectancies in chance-controlled and skill-controlled tasks, it was established that individuals with an external locus of control persisted working on tasks for which they did not receive cues to arrive at answers unlike individuals with an internal locus of control who worked harder under total support or one hundred percent of reinforcement (Rotter, Liverant, & Crowne, 1961). During training trials, participants with an internal locus of control showed greater increment in responses under skill conditions than participants with an external locus of control.

These studies by early researchers on locus of control indicate that when an individual perceives the task as being controlled by the experimenter, chance, or random conditions, past experience is relied on less (Rotter, 1966). Under chance conditions the individual learns less and the individual may learn wrong concepts because results are not linked to behavioural patterns. The individual learns less about future behaviour-reinforcement sequences. In fact, the individual's expectancies for future reinforcement are likely to change less when the individual regards the occurrence of the reinforcement to be beyond their control (Rotter, 1982). It was concluded that if an individual regards success on a particular task as determined by luck, chance, or external control, their expectancies for future positive reinforcement would rise less after positive reinforcement and fall less after negative reinforcement (Rotter, 1982). In the case of one hundred percent reinforcement or near, the individual who regards the reinforcement as dependent upon some kind of external control would assume early in the extinction trials either that luck had turned against him or her or that the experimenter was no

longer rewarding the same behaviour (Rotter, 1982; Phares, 1976). In contrast, individuals who believe in skill conditions would regard reinforcement as a function of their own skills and their responses under skill conditions would extinguish more slowly under one hundred percent reinforcement than under partial reinforcement (Lefcourt; 1982; Rotter, 1982). They take longer working on skill tasks because they believe that their skills would provide answers to what they are looking for. The individual who believes in skills more than chance would not anticipate external factors to easily sway or distract them from the task at hand (Phares, 1976).

In health education it is important that participants rely on scientific information that they are exposed to in order to prevent HIV and AIDS risk. There could be many methods of preventing diseases but scientific evidence is needed to prevent infection or illness. In communities where participants show resistance to modern ways of reducing HIV and AIDS, health educators could target the fallacies that the communities hold as truths and then conduct training programmes to dispel the myths and correct the health fallacies (Meschi, Detrenis, Musini, & Strada, 2006; Starfield, Hyde, Gervas, & Heath, 2008; Zanchetti et al., 2009).

3.6.3 Fatalism and extrasensory perception in health control

Extrasensory perception is referred to in Rotter`s social learning theory and Skinner`s operant conditioning studies as a belief in external control of reinforcement. It was argued that in simple terms the belief in supernatural forces was an instinctive sense of a teleological propensity to believe in the existence of a mystical world (Rotter, 1966; Veblen 1899).

Extrasensory perception is regarded as a sixth sense that helps people know about events yet to come without the use of five senses. Extrasensory perception (ESP) refers to perception without a basis in sensation. The concept is also called the ``psi`` phenomenon (Fitzherbert, 1960; Greyson, 2006; Gulliksen; 1938; Magnani & Li, 2007). The psi phenomenon is an unusual process of information or energy transfer that is not explained in terms of known physical or biological mechanisms. There are several forms of psi which include among others pre-cognition, fortune-telling, foreseeing events, telepathy, psycho-kinesis, and clairvoyance. The individual who is thought to be imbued with the spiritual powers is regarded by most members of their immediate communities as capable of: knowing what will happen in future, the illness that will afflict someone, the fortunes someone will receive, good events to come, disasters that will befall individuals and communities and what someone is thinking when they look at the individual. They can move the physical world purely through thought, such as bending spoons or moving objects (psychokinesis) with the mind or performing feats of

levitation and perceiving objects or events clearly through mystical powers (Griffiths, Farrer, & Christensen, 2007; Marks, Reider, 2006; Witte, van der Wal, & Steyn, 2008).

In social learning theory, extrasensory perception is associated with pseudoscience because there is no stimulus and response bond between behaviour and events. There is no sensory input into the sensory nervous system and hence behavioural responses without sensory input are associated with hallucination (Henry, 2004; Mollet, Harrison, Walters, & Foster, 2007). Most claims made by individuals who perform the miracles cannot be replicated or falsified scientifically (Lilienfeld & Landfield, 2008; Rauscher & Targ, 2006). In locus of control research, such claims are associated with the belief in powerful others or powerful metaphysical forces beyond human comprehension.

Fatalism is associated with the attempt by people to understand abnormal behaviour. When people run out of ideas about the occurrence of adverse events or abnormal behaviour there is a tendency among people with an external locus of control to attribute causes to external or supernatural beings as a way of coping with disconcerting experience or discomfoting reality. In health matters, fatalism can be used to cope with aversive conditions. The concept of evil spirits or demonology exists in almost all societies of the world. The devil or evil spirit could be viewed as a semiautonomous being which can dwell in an individual and control his or her mind (Davison, & Neale, 1990; Macdonald, 2006; Pargament, Maton, & Hess, 1992). The devil is believed to cause mental disorders and conduct disorder; for example, among the Egyptians, Israelis, Chinese and Greeks in the Medieval period (Davison & Neale, 1990). In South Africa evil spirits cause mental and behavioural problems (Cameron & Griffiths, 2009; Nelms & Gorski, 2006; Ross, 2008). It is exorcised from affected people as a treatment method and prayers are performed to protect the individual. Treatment or therapy for illness in many cultures involves, sleeping in the temple, drinking water from holy places, participating in traditional dances, and eating the food provided by the healer (Gwandure, 2008b). In these sacred places angels visit the sick in their sleep and revealing dreams are experienced by the sick about their illnesses. The sick are sometimes asked to perform certain acts that would cure them in the presence of the religious leaders and elders (Davison & Neale, 1990; Geschiere, 2008; Gwandure, 2008b; Mall, 2008). Prescribed therapeutic interventions are usually in form of bathing in cleansed water, walking without shoes, performing rituals, repenting, confessing, performing acts of humility before the elders and showing contrition, participation of family members in the cleansing ceremony and the presentation of gifts to the elders and priests in appreciation (Davison & Neale, 1990; Gwandure, 2008b; Peltzer, Friend-du-Preeze, & Ramlagan, 2008). These practices are performed as a health- protective measure against relapse and to ward off evil spirits in the individual or group` s day-to-day life (Daneel, 2008; Gwandure, 2008b; Mzimkulu & Simbayi, 2006; Schippers, & Van Lange, 2006).

In HIV and AIDS research, it could be necessary to look at a community's belief system when planning for an intervention and then incorporate the community value system into the training programme. The emphasis on health promotion should focus on linking behaviour to reinforcement and how to avoid risk HIV and AIDS practices due to beliefs. The training programmes could assist participants in identifying safer HIV and AIDS prevention and control methods that could be used without violating cultural norms and values.

3.6.4 Fatalism, disease prevention and traditional healing practices in South Africa.

The belief in fate is manifested in various ways in South Africa. In the African context, an individual is born into the African traditional religion. There are birth rites that are performed before the child is born and when the child is born (Gwandure, 2006). Even though there is modernisation in Africa, still, people engage in religious activities. These could be traditional, western or eastern religions. Some people embrace all religions and believe in the controlling powers of the supreme-being irrespective of doctrine or denomination (Anderson, 2000; Chidester, 1992; Thorpe, 1991). African traditional religion is regarded as a way of life in which a group follows cultural ways of life (Leclerc-Madlala, Simbayi, & Cloete, 2009; Tenkorang, Rajulton, & Maticka-Tyndale, 2009). There are cultural ways of: receiving a new born baby, behaving in adolescence, behaving in adulthood, promoting human welfare, preserving social decorum in old age, disease prevention, family protection, burying the dead, and remembering the deceased (Van Gennep, Vizedom, & Caffee, 2004; Zartman, 2000). Individuals in South Africa participate in most of these ceremonies directly and indirectly as members of the family, extended family, ethnic group, or as patrons of a political, professional, organisational, social or religious grouping (Garner, 2000, Meyer, 2004; Mndende, 1998).

Fatalism could be used as a way of coping with the many adversities afflicting Africa today such as endless wars, the destabilising and murderous activities of rebels, displacement of communities and forced migration, armed robberies, wide-ranging civil service corruption, the corruption of African leaders by multinational business organisations, the presence of corrupt local and international donor agencies, famine, child abuse, poverty and the domination of Africa by developed countries in world trade, international politics, and world health policies (Benatar, 1998; Collier & Hoeffler, 2002; Elbandawi, 2000; Von Braun, Teklu & Webb, 2003). These negative events common to most of the African countries could have a bearing on the ordinary citizen's locus of control orientation and health risk.

The concept of health and illness in African traditional culture may be different from the western medical model. Although many Africans embrace western ideas on health, a large percentage of

Africans are still guided by culture as a knowledge base for health decisions (Avis-Williams, Khoury, Lisovicz, & Graham-Kresge, 2009; Levers, 2006; Phares, 1966). Health interventions designed outside Africa could build on indigenous knowledge systems about diseases in order for them to be effective in Africa. African traditional healing practices are embedded in African cosmology (Levers, 2006). In African traditional healing practices, the body and mind are treated as one thing and illness is not separated psychological and physical pain (Levers, 2006). The traditional healing approach to health and illness is similar to social learning theory in that both approaches reject the existence of the body and mind as dualistic in healthcare. Both paradigms argue that what affects the mind affects the body as well. Illness is a unitary system with a psychological and physiological effect on the individual. The concepts of disease prevention and illness include scientific or organic methods and spiritual means of prevention and treatment. Diseases affecting communities have a cultural meaning and the perception of the communities about the seriousness of the disease is what determines the strength of prevention measures.

Indigenous disease prevention and healing practices play a major role in promoting health in Africa considering that a great majority of Africans cannot afford expensive private healthcare services (Gwandure, 2006). In fact, the World Health Organisation acknowledges that eighty percent of Africans visit traditional healers for treatment (Freeman & Motsei, 1992; Gureje & Alem, 2000; Homsy, King, Tenywa, Kyeyune, Opio, & Balaba, 2004; Puckree, Mkhize, Mgobhozi, & Lin, 2002; United Nations Programme on HIV/AIDS (UNAIDS), 2000; World Health Organisation, 1978). In South Africa, private healthcare services are expensive to such an extent that medical insurance can only be afforded by a small percentage of the population (Garret, 2007; Giusti, Criel, & De Bethune, 1997; Knight & Maharaj, 2009). Health service facilities in rural areas and in townships could be under resourced or they may be located in distant places where access is limited (Coleman, Gill, & Wilkinson, 1998; McIntyre & Gilson, 2000). In such situations the use of community traditional healers or faith healers could be more convenient than visiting clinics or referral hospitals in urban centres.

Traditional healers provide medicine in form of herbs and spiritual counselling. The treatment is holistic in that the entire family is appraised of the patient's condition in the sessions. The health of an individual is regarded as a cause for concern for the family and the clan. In terms of defining illness and health in an African context, several paradigms could be used. There seems to be no single, universally accepted definition of health in the African context (Phillips & Verhasselt, 1994). When dealing with health issues in an African setting, the people's culture, social, political, economic and religious values should be incorporated in behaviour change programmes (Brown & Inhorn, 1990; Dressler, 1990; Levers, 2006). It is argued that the concept of disease and its prevention is a social

construction that is built upon a people's natural environment and cultural experiences (Dillon-Malone, 1988; Gwandure, 2008b; Gwandure, 2009b; Levers, 2006). The illness is interpreted with reference to the natural environment and traditions (Campbell, 2005; Kelbessa, 2001). Health is explained in terms of the relationship between people and the vegetative environment, that is, trees, grass, crops and forests (Krige, 1968; Ngubane, 1977; Voeks, 1996).

Health threats and illness are expressed in terms of the relationship between people and the physical environment, that is, physical features such as rivers, mountains, the sea, sun, moon, sky and winds (Chidester, 2000; Magubane, 1998). Illness is interpreted in terms of the relationships between people, animals, birds and reptiles. The relationship between people, animals and birds features prominently in African totemism and religious functions. Totemism is central to functions such as clan ceremonies, rain-making ceremonies, prohibition of sexual relationships between relatives, and it influences marriage in that individuals of the same totem are not allowed to marry. Marriage between partners of the same totem is regarded as taboo or incest (Avebury, 2003; Caldwell, Caldwell, & Orubuloye, 1992; Love, 2006; Russel, 2003). Totemism influences African politics and distributive justice in resource allocation and it is usually manifested in form of political patronage, regionalism and ethnocentrism (Comaroff, 1995; Comaroff, 1997; Ellis, 2008; Muller, 2000). The belief in the physical and spiritual worlds constitutes health beliefs and wellbeing among traditional Africans (Gwandure, 2008b). A disturbance in the cosmos and human relations is likely to cause disease and human suffering. Traditional healing practices are primarily concerned with the reconstruction of physical, social, cultural, and spiritual health (Gwandure, 2008b; Levers, 2006). An individual's health is tied to their socio-cultural system (Comaroff, 1982; Gwandure, 2009b). When an individual falls ill in an African context, the disease could be regarded as an affliction. Affliction is the dislocation of self and context and healing is the objectification and restructuring of such dislocation (Comaroff, 1980). The illness is described as the opposition between the sick individual and the intrusive external agent causing illness (Comaroff, 1980). It is important to note that illness is attributed to external causes in the majority of cases and the individual looks for the external factors to explain their illness with little reference to their own behaviours that could have contributed to ill health.

In HIV and AIDS risk reduction programmes, traditional healers and faith healers are encouraged to participate (Cleemput, Parry, Thomas, Peters, & Cooper, 2007; Hunter, Fernandez, Lacy-Martinez, Dunne-Sosa, & Coe, 2007). Some traditional healers are willing to participate in training programmes for health promotion in their communities (Levers, 2006). It is common knowledge that before the coming of missionaries in Africa, traditional healers were consulted for a wide range of illnesses that affected people, animals and birds. In modern-day Africa, traditional healers are still treating people

with sexually transmitted diseases, diarrhoea, malaria, infertility, and are consulted in reproductive health including the assistance of women in labour (Chipfakacha, 1997; Kale, 1995; Kyomuhendo, 2003; Levers, 2006; Rice, 1997). The World Health Organisation is actively involved in research that incorporates African traditional healers into modern health care practices (UNAIDS, 2000; WHO, 1978) although some African governments are still at pains to recognise traditional healers as credible healthcare service providers (Green, Zokwe, & Dupree, 1995; Levers, 2006; Richter, 2003; Sidley, 2004).

There is a knowledge gap or dearth of information regarding HIV and AIDS-related interventions that are informed by indigenous knowledge systems in South Africa. Training programmes on HIV and AIDS prevention could adopt the social learning approach that culture constitutes knowledge and that learning that is built on an individual's experience could be much better than training individuals in new ways of behaviour that are divorced from their cultural reality. At the moment Africa is worst affected by HIV and AIDS and yet prevention programmes are in place. It could be argued that the escalation of HIV and AIDS in Africa could be due to the overreliance of training interventions on western paradigms of health, illness and treatment. Most of the HIV and AIDS prevention activities in Africa have been based on Euro-American medical and social service models which have not included the cultural wisdom of the elders, village chiefs, local educators, traditional healers, or spiritual leaders of indigenous religious groups (Levers, 2006; Preece, 2003). The existing health behaviour change models fail to incorporate the environmental and cultural factors as equally important in achieving behaviour change (Levers, 2006; Muyinda, Nakuya, Pool, & Whitworth, 2003). In fact, there is a tendency to blame culture, that is "blackness" and "backwardness" as synonymous with risk factors in HIV and AIDS risk reduction (Levers, 2006). Effective and culturally relevant HIV and AIDS risk reduction training programmes could investigate the feasibility of adopting traditional methods of disease prevention and the promotion of safer sex and abstinence.

It is recommended by researchers on indigenous knowledge systems in HIV and AIDS risk reduction that behaviour change should happen in a cultural context. Behavioural interventions should identify positive aspects of indigenous practices aimed at reducing HIV and AIDS risk and not regard everything traditional as associated with witchcraft and witchdoctors (Dagher & Ross, 2004; Levers, 2006; Walker, Walker, Manetsi, Tsotetsi, & Segal, 1989). It is encouraged that researchers on indigenous knowledge should identify and remove barriers to a co-operative multidimensional, multi-systemic, multidisciplinary, and multi-phasic response to HIV/AIDS risk reduction (Levers, 2006). Researchers could work with traditional leaders in order to expedite community participation and the production of credible knowledge that both parties can identify with and take ownership of as their final product. Training programmes for HIV and AIDS risk reduction in a cultural context could focus

on village healthcare workers, elders, religious leaders, village heads, and traditional healers (Levers, 2006).

Religions and cultural beliefs tend to induce fear and guilt feelings in individuals as a way of inhibiting or discouraging morally unacceptable behaviour (Chaurand & Brauer, 2008; Mosher, 1965; Raven, 1999; Zhang, 1995). People engage in socially acceptable behaviours to avoid external punishment for transgressing societal standards. They also behave as expected of them by society to avoid guilt feelings. As a result, fear of punishment and guilt conscience could be internalised by the individual and this internalised moral template could serve as a guide in maintaining morally acceptable behaviours (Mosher, 1965). The roles of fear and guilt in inhibiting socially undesirable behaviour are social learning process in which the individual learns from past reinforcement history.

In social learning theory fear is regarded as expectancy for external punishment and guilt as expectancy for internal punishment (Rotter et al., 1972). In situations involving the inhibition of unacceptable behaviour, the expectancy for external punishment is a function of situational cues related to the probability of the unacceptable behaviour leading to negative reinforcement (Allen, Emmers-Somer, D'Alessio, Timmerman, Hanzal, & Korus, 2007; Baumeister, Stillwell, & Heatherton, 1994; Corcoran & Rotter, 1987; Mosher, 1965; Rector, Kocovski, & Ryder, 2006; Rotter et al., 1972). The expectancy for internal negative punishment is assumed to be a generalised expectancy based on the individual's past experience which is to a large degree independent of cues concerning the probability of external negative reinforcement in the immediate situation (Rotter et al., 1972). Guilt is defined as a generalised punishment, that is, negative reinforcement for violating, anticipating the violation of, or failure to attain internalised standards of proper behaviour (Mosher, 1965; Rotter et al., 1972). In social learning theory, the standards of proper behaviour are regarded as encompassing both the internalised prohibitions "should not's" and the internalised positively valued ideal-goals, the "ought to's" which are related to the individual's feelings of self-worth (Rotter et al., 1972). The generalised expectancy for guilt is a function of the person's past history of reinforcement in regard to violating standards of proper behaviour (Rotter et al., 1972). When the individual internalises standards of approved conduct he or she gets reinforcement through avoidance of punishment. The internalisation of standards of proper conduct is independent of situational cues (Mosher, 1965).

In a fear-guilt situation, conflict is engendered because the goal response may lead to both positive and negative reinforcement (Faver & Strand, 2007; Mosher, 1965; Nobre & Pinto-Gouveia, 2006; Rotter et al., 1972; Syed, 2008). The behavioural response made in a situation is a function of the strength of the expectancies and values of the conflicting reinforcements. In social learning theory, every situation that an individual faces is regarded as a conflict situation as long as alternative

responses or expectations for alternative outcomes following behaviour are possible (Mosher, 1965; Rotter et al., 1972). In this regard, the potential for a specific behaviour to happen in a fear-guilt situation in relation to positive reinforcement is a function of the expectancy that a specific approach behaviour will lead to positive reinforcement in the fear-guilt situation and the value of the positive reinforcement (Singer & Doornenbal, 2006; Mosher, 1965; Rotter et al., 1972). Also, the potential for a specific avoidance behaviour to occur in a fear-guilt situation in relation to external negative reinforcement is a function of the expectancy that a specific behaviour will lead to external negative reinforcement, the value of external reinforcement, and the generalised expectancy for self-mediated punishment for violating, anticipating the violation of, or failure to attain, internalised standards of proper behaviour (Mosher, 1965; Rotter et al., 1972).

The social learning theory concept of fear-guilt conscience as a social inhibitor in a cultural context is useful in understanding and predicting human behaviour in health settings. The intra-personal interaction of fear and guilt feelings helps individuals control their behaviour. The interactional process results in inhibiting socially and morally unacceptable behaviours (Mosher, 1965; Rotter et al., 1972). In a cultural context, individuals with weak guilt expectancy are more likely than individuals with strong guilt expectancy to be influenced by situational cues and would be fearful of external cues. Individuals with a strong guilt expectancy are not influenced by present situational cues or show unreasonable fears since their behaviour is largely influenced by a history of behaviour-reinforcement sequences which have become internalised or self-controlled. Individuals who are sensitive to external cues fear external punishment in the same way children would fear parents and not internalising the reasons for not engaging in unacceptable behaviour (Mosher, 1965; Rotter et al., 1972; Singer & Doornenbal, 2006). That could imply that such individuals could attend almost exclusively to external cues in governing unacceptable behaviour but if no external controls prohibit a desired but culturally unacceptable behaviour, they could engage in undesirable behaviours (Mosher, 1965; Rotter et al., 1972). Individuals with highly developed internalised standards would not need to be guided mainly by external cues but inner-driven conscience to avoid guilty feelings for going against what is right (Mosher, 1965; Rotter et al., 1972). Individuals who fear external punishment could be easily inhibited from engaging in unacceptable behaviours by powerful others or supernatural forces that are believed to be omniscient and omnipotent in their lives. An individual who has internalised cultural standards which prohibit culturally unacceptable behaviours would inhibit their expression regardless of the chances of being punished by others (Jensen & Lidell, 2009; Mosher, 1965; Rotter et al., 1972). In studies which compared students on high sex-guilt and low on sex-guilt, it was observed that individuals high on sex-guilt showed more internally controlled behaviours than individuals with low sex-guilt (Mosher, 1965; Rotter et al., 1972).

In HIV and AIDS training programmes, health educators could aim for the internalisation of knowledge into moral standards for guiding behaviour. High guilt generalised expectancy could make individuals more socially responsible and caring for their partners in relationships. The conscience of not intentionally and carelessly infecting unsuspecting partners with HIV could be built in individuals through locus of control training (Cooper & Foster, 2008; MacDonald & Worth, 2005). The fear in partners should not be about being seen by medical practitioners, partners, or parents that they have contracted a sexually transmitted disease. According to the social learning theory, partners should develop a guilty conscience against infidelity in order to protect the self and others against infection (Bagchi, 2008; Hardy, Padilla-Walker, & Carlo, 2008). There are so many stories in South Africa of people who were brought to court for knowingly infecting their partners with HIV and never disclosed their HIV status. There are stories about partner infidelity in South Africa and it is reported as risky practice in HIV prevention (Abrahams, Jewkes, Laubscher, & Hoffman, 2006; Hendricksen, Pettifor, Lee, Coates, & Rees, 2007). Health educators could emphasise the social learning principle of ``fear`` with reference to people fearing HIV as a virus which cannot be cured and also more importantly to train participants and communities internalise guilt expectancy as a guiding principle for safer health-protective behaviours.

Individuals could be educated about the dangers of HIV and AIDS and they could watch videos on HIV and AIDS risks if they like or they could visit hospitals to learn more about HIV and AIDS. In social learning theory, the exposure could induce fear at first among individuals low on guilt expectancy. If such individuals are exposed to training programmes on locus of control and personal health management they could develop high guilt expectancy and become more internal in locus of control. Individuals who internalise culturally acceptable behaviours tend to become less fearful of the disease because they would know how to prevent it.

3.6.5 Fatalism and health risks

Researchers on locus of control and health find a consistent relationship between locus of control and failure to prevent illness or control of the spread of a disease in a community. Helplessness is associated with external locus of control and health risks (Lefcourt, 1982). In the South African context, fatalism could predispose individuals and groups to diseases (Leclerc-Madlala, Simbayi, & Cloete, 2009; Tenkorang, Rajulton, & Maticka-Tyndale, 2009). Fatalism is associated with hopelessness, lack of vision for betterment of the self, perception of the environment as sacred or too powerful for the individual, feelings of being cursed, and generalised behaviour that is not consistent with present reality or prevailing health threats.

Individuals with disabilities or chronic health conditions are reported to be largely external in locus of control if they have perceptions that they are not in control of their health. If an individual can manage the disability they tend to develop an internal locus of control (Gwandure, 2008a; Mackenbach, Borsboom, Nusselder, Looman, & Schrijvers, 2001). Among patients with depression, it was noticed that depressed patients were particularly sensitive to any impediments to their goals. When they experienced difficulties dealing with a problem they perceived themselves as total failures; their cognitive responses were negative, distorted and hopeless. There is a trend among individuals with an external locus of control to develop depression as they feel helpless about their health (Calhoun, Cheney, & Dawes, 1974; Cvenegros, Christensen, & Lawton, 2005; Goss & Morosko, 1970; Naditch, Gargan, & Michael, 1975; Ozmen, 2008; Thomas & Lincoln, 2006; Warehime & Woodson, 1971). In studies on locus of control and depression, it was found that depressive symptomatology, negative affect, and discontent were associated with external locus of control (Lefcourt, 1982). Internal locus of control is associated with low suicide rates (Boor, 1976; Gwandure, 2007a; Gwandure, 2007b; Peltzer, Kleintjes, Thompson, & Mashego, 2008; Rothmann & Strijdom, 2002). External locus of control is associated with anxiety and dysphoria (Burnes, Brown & Keating, 1971; Lochner et al., 2007; Morelli, Krotinger, & Moore, 1979; Platt & Eisenman, 1968; Powell & Vega, 1972; Rothmann, 2003).

Individuals with an external locus of control often report debilitating anxiety more than individuals with an internal locus of control. Debilitating anxiety is characterized by the prominence of anxiety in an individual's life to such an extent that individual feelings, thoughts and performance are weakened by the anxiety (Bellack & Hersen, 1993; Lefcourt, 1982). The individual becomes blocked, hesitant, fearful, and disinterested in overcoming their immediate challenges. In contrast, individuals with an internal locus of control report more of facilitative anxiety than individuals with an external locus of control. Such individuals can work most effectively under pressure and when the task is important. The nervousness that is experienced while facing challenges helps the individual perform better; the individual does not easily get distracted from the present task (Alpert & Harber, 1960; Burton & Naylor, 1997; Cheng, Hardy, & Markland, 2009; Hanton, Neil, & Mellalieu, 2008; Jones & Swain, 1995; Lefcourt, 1982). The individual with facilitative anxiety attacks challenges with verve and enthusiasm plunging headfirst into one activity after another (Lefcourt, 1982).

In clinical settings, external locus of control is associated with psychopathology (Botha & Pienaar, 2006; Harrow & Ferrante, 1969; Vuger-Kovacic, Gregurek, Kovacic, Vuge, & Kalenic, 2007). Training sessions for individuals with depression, schizophrenia, and mania showed improvement in locus of control towards internality after training. However, in some severe cases, patients with

schizophrenia remained the same while those with mania became more external in locus of control instead (Harrow & Ferrante, 1969). Patients presenting with disorders of thought, affect, behaviour, and social adjustment were found to be external in locus of control (Shybut, 1968; Smith, Pryer, & Distefano, 1971). Individuals with an external locus of control tend to develop fatalistic attitudes towards health recovery (Lundberg, Bobak, Malyutina, Kristenson, & Phikhart 2007). They tend to have less adequate coping skills and would rather rely on fate to deal with their health conditions than trust their own capabilities (Coelho & Bastos, 2009; Hoff, 2006; Rao, Pradham, & Shah, 2004; Rutter, 1991).

Fatalism among university students is expected to influence their health decisions as members of society with cultural beliefs, religious affiliations, and values that guide their behaviours. Issues about fate, religious beliefs and values are controversial in all societies of the world. Consequently, university students could behave in culturally appropriate behaviours but risking their health with respect to HIV susceptibility. They could behave in health appropriate ways but in contradiction to cultural or religious beliefs thus making them feel ostracized by their own families and communities. In some African communities individuals could become external in locus of control as they grow older because they become community leaders guided by cultural and religious beliefs that they have to respect and protect. Fatalistic ideas and psychopathology among university students could be expected among students living in difficult circumstances, from orthodox religious backgrounds and those who come from resource poor backgrounds (Furnham, Akande, & Baguma, 1999; Harkness & Super, 1999; Richter, 1999; Yamey & Greenwood, 2004). The university environment could be expensive, snobbish, elitist, racist, and xenophobic to such an extent that students could group themselves according to social class and ethnic identity (Gwandure, 2009a). The university could be a risk environment due to less contact between students and lecturers and the bureaucratic university administrative procedures could make it difficult for students to achieve cultural integration and adaptation. Students could become disillusioned about their own traditions, cultural practices, and religious beliefs in a university environment that could be blind to beliefs and doctrines. Coping strategies among university students involves both conventional methods of taking medication and self-mediation procedures that could expose students to psychopathology (Cockcroft, Grasko, & Fridjhon, 2006). Due to cultural difficulties experienced by some of the students at South African universities, it is reported that affected students could indulge in excessive alcohol use, engage in promiscuous behaviours, become violent, and some of them could become disillusioned about their future lives (Peltzer, 2000, 2003, 2005; Peltzer, Malaka, & Phaswana, 2002).

3.6.6 Fatalism health risk reduction training

Locus of control training programmes have been effective in reducing levels of fatalism among patients (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Health risks associated with fatalism were reduced by training participants in locus of control skills to deal with recurrent health problems (Goodnow & Pettigrew, 1955; Goodnow & Postman, 1955; Rotter, 1966). Participants are trained to differentiate between fact and myth in health risk reduction using social learning concepts (Cunningham et al., 2009; Wyckoff & Sidowsky, 1955). Even if extrasensory perception has received world publicity as a research area, its contribution to health promotion has not been well received in some countries. In some countries healthcare practitioners using the psi phenomenon as a guiding principle in their practice might not be allowed to register as professional healthcare providers. However, in South Africa alternative healthcare practitioners and traditional health providers are registered as providers of complementary health services (Fitzherbert, 1960; Greyson, 2006; Gulliksen; 1938; Magnani & Li, 2007). Health training to reduce the influence of culture, religion, beliefs, and myths about HIV and AIDS have been found to be effective (Bhui, 2009; Leclerc-Madlala et al., 2009; Tenkorang et al., 2009).

Fatalism could pose health risks in that the individual sees no connection between what they do and health outcomes. They believe that supernatural forces cause things to happen. Good supernatural forces provide good health, blessings, and wealth while bad spirits cause diseases, human suffering and poverty. An individual has a lesser role than the spirits in health control. Fatalistic ideas could be used in health risk reduction. Some African cultures could encourage HIV and AIDS risk reduction by promoting safe sex. African cultures can reduce HIV risk by promoting abstinence. It is against ancestral spirits and culture for people to engage in promiscuous sex outside marriage. People who are not married are strongly encouraged to get married; if they experience difficulties getting married, the elders can arrange the marriage. Elderly men and elderly women would facilitate the process and ensure that cultural formalities are met to dignify the marriage institution. Most African cultures are not comfortable living with too many unmarried men and women in their midst; they would suspect that the unmarried men and women could destroy other people's marriages or rape young girls and boys. Ancestral spirits do not approve of sex before marriage and do not bless sex between teenagers. This helps promote abstinence among adolescents. If an adult commits rape, the penalty is punitive and discourages society from engaging in unlawful acts. A public cleansing ceremony for the rapist is usually performed and compensation for the offended family is arranged in full view of all members of the community so that everyone realises that sinful behaviours offend the spirits and the supreme-being. The beliefs act as social controls to complement laws of the country. In fact, the majority of traditional Africans tend to know more of social control through taboos, rituals, rites,

moral rules of behaviour, cultural inhibitions and religious injunctions than they would know details of criminal or civil laws governing civil conduct. The traditional Africans tend to fear illnesses caused by violations of cultural norms, values and taboos. Some of the medical conditions that are associated with punishment for violating cultural taboos are schizophrenia, infertility, still births, and chronic medical conditions. The social problems associated with punishment by ancestral spirits for violating moral or ethical codes of conduct are having delinquent children, failure to keep stable marital relationships, misfortune, punishment and humiliation of offenders through violent experiences, bringing famine to errand families, failure to keep jobs, or causing the individual to lose their accumulated wealth. The individual develops the feeling that they are working for nothing because all the money they worked for will be taken away by agents of the ancestral spirits to punish the offender. The offenders could experience social ostracism. It could be argued that fatalistic beliefs are found in all parts of the world.

Most cultures have similar moral values which seek to promote life, health, and happiness. The different cultures and religions could have different ways of promoting their values, but essentially, all human cultures value ethical conduct. The socialisation processes vary across the world but the primary goal in human development is to maintain good health and social relations. In social learning theory, cultures socialise their members to fear certain phenomena and to develop guilt feelings when an individual violates moral standards upheld by society. Fear of diseases without taking action is regarded as risky in social learning theory. In order for a community to protect itself from extinction through adversities such as life threatening diseases, it socialise its members to build internal defence systems such as inculcating high guilt expectancy in members to maintain ethical behaviours for group survival. In social learning theory, it is argued that internal moral standards are more important in the protection of individuals and group than external control mechanisms. In this context, fear and guilt interaction within the individual in life threatening situations could be developed through locus of control training to shape human behaviour and personality. Community development programmes on behaviour change or HIV and AIDS risk reduction could incorporate cultural and religious values that instil guilty conscience and virtues of upholding morality.

In developing HIV and AIDS risk reduction programmes, fatalistic beliefs could be complemented with risk reduction methods that are scientifically correct. The social learning skills of developing ``skill conditions`` for an individual to learn how to solve their own problems and discouraging ``chance conditions`` in finding solution to problems could be useful in training interventions. The development and implementation of HIV and AIDS risk reduction programmes in communities with strong religious beliefs have generally succeeded when the focus of the training was on the risk behaviours and not the community`s religious doctrines. In South Africa, it is a human right to belong

to a religious or cultural group. The Bill of Rights states that an individual is free to belong to a cultural, religious, or linguistic community. In addition, the individual may not be denied the right to enjoy their culture, practise their religion, or use their language to express themselves. Individuals are also free to form, join, or maintain cultural, religious or linguistic associations and other organs of civil society.

3.7 Achievement-oriented behaviour

3.7.1 Definition of achievement-oriented behaviour

Achievement-oriented behaviour forms a large part of locus of control research (Pang, Villacorta, Chin, & Morrison, 2009; Lefcourt, 1976; Rotter, 1982). Researchers on locus of control believe that there are differences between individuals, groups, communities, and countries in terms of achievement-oriented behaviours and locus of control orientation. Locus of control is regarded as an antecedent factor in achievement-oriented behaviour and health control (Bembenutty, 2009; Kirchner, 2003; Marquez, Blissmer, & Prohaska, 2009).

Achievement-oriented behaviour or achievement behaviour is any behaviour directed toward the attainment of approved performance or goals (Collins, Hanges, & Locke, 2004; Crandall, Katkovsky, & Preston, 1962). Other researchers on achievement motivation describe achievement-oriented behaviour as an act of releasing tension within the individual. Achievement-oriented behaviour is a resultant of a conflict between approach and avoidance tendencies. Associated with every achievement-related action is the possibility of success with the consequent emotion of pride and the possibility of failure with the consequent emotion of shame (Ebbeling, Pearson, Sorensen, Levine, & Hebert, 2007; Hudley, Graham, & Taylor, 2007; Weiner, 1992). The strength of these anticipated emotions determine whether an individual will approach or avoid achievement-oriented activities (Latimer, Williams-Piehota, Katulak, Cox, Mowad, Higgins, & Salovey 2008; Weiner, 1992). Achievement behaviour is viewed as the resultant of an emotional conflict between hopes for success and fears of failure (Weiner, 1992). In social learning theory, achievement-oriented behaviour is explained in terms of academic performance, human need or motivation to excel and surpass others, and the expectancy held by the individual that achievement behaviours will lead to the attainment of achievement-related goals (Hall, Perry, Chipperfield, Clifton, & Haynes, 2006; Phares, 1976; Rotter, 1966, 1982).

The need for achievement is a quality that is associated with locus of control. Individuals who are high on the need for achievement generally believe in their own ability or skill to determine the outcome of their efforts (Rotter, 1966). The need for achievement is a concept aligned to locus of control and

Rotter (1966) acknowledges the work of McClelland, Atkinson, Clark, and Lowell (1953) and that of Atkinson (1958) in developing the social learning theory of personality. A striving for achievement was found to be associated with internal locus of control (Efran, 1963, Rotter, 1966). Among students, achievement-oriented behaviour correlated with internal locus of control (Crandall, 1962) and Franklin (1963) found a significant relationship between locus of control and achievement motivation. Individuals with an internal locus of control were found to have a stronger motivation in achievement situations than individuals with an external locus of control (Rotter & Mulry, 1965). The reason given for the higher achievement motivation in individuals with an internal locus of control is that they believe that their own actions can bring about the desired results (Rotter, 1966).

3.7.2 Achievement-oriented behaviour as goal directed behaviour

Individuals are motivated to achieve certain goals in social learning theory. In a health context, individuals are motivated to achieve personal health and seek to maintain a disease-free society. Individuals need to be motivated to achieve what they want. In doing so they are guided by expectancy, reinforcement value and the psychological situation. In order for achievement-oriented behaviour to occur in a specific situation in relation to a specific reinforcement is a function of the expectancy of the occurrence of the specific reinforcement following a specific behaviour in a specific situation and the value of a specific reinforcement in a specific situation (Rotter, 1982). In real life situations, individuals deal with a variety of stimuli and reinforcements hence the need to broaden the scope of achievement-oriented behaviour in social situations. Alternatively, it could be stated that in predicting achievement-oriented behaviour in individuals, the potentiality of the functionally related achievement-oriented behaviours to occur in a number of situations is a function of the expectancies of these behaviours leading to these reinforcements in these situations and the values of these reinforcements in these situations (Rotter, 1982).

The strength of an individual's needs can be used to predict human behaviour. In social learning theory, the human motivation to get desired outcomes could be described by terms that can be used interchangeably such as instinctual urges, drives, or needs (Rotter, 1982). The strength of these drives, regardless of which theory is used to describe them, is useful in predicting human behaviour. The internal motivational state of individuals could be utilised in predicting human behaviour (Rotter, 1982). In social learning theory, it is presumed that the relationship between goal preference or reinforcement value and achievement-oriented behaviour can be determined by including an individual's expectancy on the basis of past history and that behaviour will lead to a satisfying outcome and not punishment, failure, or negative reinforcement (Rotter, 1982). Achievement-oriented behaviour in social learning theory is influenced by an individual's expectancy for success which is

related to their life experiences. Previous successes and failures in various contexts shape personality to a finer texture.

Human drive or achievement-oriented behaviours in social learning theory could be affected by the psychological situation. This could be the family conditions, social environment, cultural values, or national interests. In this study, various contexts which affect achievement-oriented behaviours were explored using some of the motivation theories that were viewed by Rotter (1966) and other locus of control researchers as adding value to the social learning theory. The major contributors, as mentioned by Rotter (1966), to the development of the social learning theory and the locus of control construct, were Atkinson (1958), Crandall (1962) and McClelland (1961). In this study, their contributions were explored and discussed in terms of social learning theory and locus of control.

3.7.3 Achievement-oriented behaviour in a social context

The social environment can influence an individual's achievement-oriented behaviours (Bansal, Thind, & Jaswal, 2006; Zsolnai, 2002). The family has an influence on children's achievement motivation in adulthood. The family shapes personality through socialisation and protects children from negative social influence (Cavanagh & Huston, 2006; McClelland, 1961; Parcel & Menaghan, 1993; Rosen, Crockett, & Nunn, 1969). A family's structure influences the socialisation process by affecting the patterns of authority and support between parent and child and by influencing the degree of parental involvement in the child and by helping shape the expectations parents and children have of one another (Gross, Fogg, & Tucker, 1995; Rosen et al., 1969). While the family could encourage achievement motivation in children, in some situations, other families could discourage individual success.

Achievement needs develop in children as they encounter new experiences but individual differences in motivation are noticeable as children grow (Crandall, Katkovsky, & Preston, 1960). By nursery school age or early grade school age, individual differences are apparent in the strength of children's achievement needs. This is demonstrated by the achievement standards displayed by the child and the skills the child uses to attain various achievement goals (Crandall et al., 1960). In studying achievement-oriented behaviour among students, social learning theory researchers focus on the inferred goal of the behaviour, the unique characteristic behaviour involved and the nature of situations in which the behaviour occurred (Crandall et al., 1960; Friedel, Cortina, Turner, & Midgley, 2007; McCrae, 2009; Spera, 2005). The goal of achievement behaviour could be the attainment of approval and avoidance of punishment in young people. The approval or disapproval could be self-imposed or come from other people. The inferred goal of achievement behaviour could be influenced

by reinforcements such as approval and disapproval and other reinforcement regimens (Crandall et al., 1960). Approval might be expressed verbally or symbolically through rewards and prizes while disapproval could be in form of criticism, withdrawal of privileges or ostracism. The unique character of achievement-oriented behaviour studied is competence of performance. In essence, achievement-oriented behaviour is behaviour directed towards the attainment of approval or the avoidance of disapproval for competence of performance in situations where standards of excellence are applicable (Crandall et al., 1960; Corpus & Gilbert, 2009; Rogers, 2009; Rogers, Wiener, Marton, & Tannock, 2009). Parents tend to focus more on socially desirable behaviours than competence of performance. In this regard parents may chose behaviours warranting reinforcement and behaviours of the child warranting punishment even before the child has developed any appreciable degree of competence on their own.

Parental behaviour and an individual`s culture influences the development of behaviours that are considered to be socially desirable. Parents shape the development of children`s achievement behaviours by rewarding and punishing certain values. They could develop desirable achievement behaviours through: affection and rejection of certain behaviours, independence training, parental reaction to achievement behaviours, rewarding help-seeking behaviour, rewarding emotional support-seeking behaviour, rewarding approval-seeking behaviour and achievement efforts (Crandall, Preston, & Rabson, 1960). Society could also disapprove certain behaviours that are deemed to be socially undesirable and could discourage such behaviours by showing hostility, criticism, restrictiveness, punitiveness, coercisiveness, and lack of encouragement of skill development (Crandall, Preston, & Rabson, 1960).

In as much as the intended effort by parents or society is to develop young people, the socialisation process could have negative consequences on individual autonomy and volitional behaviours in health promotion (Armitage & Conner, 2000; Hoyt, Rhodes, Hausenblas, & Giacobbi, 2009; Milnes, Orbell, & Sheeran, 2002). Lack of self-initiative could be risky in HIV and AIDS prevention. Some families, communities or societies may not be at liberty to discuss HIV and AIDS issues with children and young people (Bhana & Pattman, 2009; Helleve, Flisher, Onya, Mukoma, & Klepp, 2009). Young people could be criticised, ridiculed, labelled as indecent, or may be coerced to follow religious or cultural practices against their knowledge and conscience regarding safe sex and risk sexual practices (Doyal, Anderson, & Paparini, 2009).

Studies on achievement-oriented behaviour indicate that all achievement-oriented behaviours are largely goal-directed (Crandall et al., 1960; Hirst, Knippenberg, & Zhou, 2009; McInerney & Liem, 2009; Stuntz & Weiss, 2009). The basic goal of achievement behaviour is the attainment of approval

and the avoidance of disapproval. Approval and disapproval constitute the defining cues for competence of performance and are the potential reinforcements for achievement behaviours (Crandall et al., 1960). These reinforcements affect the importance that individuals attach to various achievement goals. Consequently, the goals of achievement behaviours which have been rewarded should, in time, acquire secondary reward value. Therefore, individuals so rewarded would come to anticipate that the attainment of such goals would lead to a strong reward while the attainment of other goals may be less rewarding (Crandall et al., 1960; Johansen et al., 2009; Kavanagh, Gruenigen, Courneya, Gibbons, Waggoner, & Lerner, 2009; Moscarello, Ben-Shahar, & Ettenberg, 2009). Families and cultures can influence individuals and groups to develop different achievement behaviours or attainment values due to the importance that is placed on the attainment of approval and the avoidance of disapproval (Crandall et al., 1960).

The choice that the individual makes between pursuing achievement behaviours valued by the family and society and those frowned upon the family and society is dependent upon the individual's attainment value. The attainment value predicts individual differences in various achievement situations (Brophy, 2009; Eccles, 2009; Crandall et al., 1960; Senler & Sungur, 2009). Attainment value in social learning theory is the degree of preference in choice situations and is formed in the same way as Lewin's "valence" and Rotter's "need value" (Rotter, 1954; Rotter, 1982). When assessing individuals for achievement behaviour, their attainment value, that is, the importance that individuals attach to attainment of approval and the avoidance of disapproval, could be useful in predicting achievement-oriented behaviours in various situations. In health settings, if individuals engaged in lifestyles in order to conform to cultural, religious, peer group, or groupthink standards that could be regarded as risk behaviour in HIV and AIDS prevention (Brook, Morojele, Pahl, & Brook, 2006; Liang, Flisher, & Lombard, 2007).

Achievement standards could be used in predicting achievement-oriented behaviours among the youth. An achievement standard is a scale of excellence against which the competence of an individual's achievement efforts may be evaluated (Crandall et al., 1960). The achievement standards for measuring achievement behaviour among the youth could include additional factors such as height of standards, form, breadth, stability, and source (Crandall et al., 1960). Height of standards is the level of competence of achievement behaviour necessary to attain approval. This implies that an individual's achievement standards contain a cutting point on a scale of performance proficiency above which approval is expected and below which disapproval is anticipated (Crandall et al., 1960). In social learning theory, the height of standards in achievement behaviour is similar to the "minimal goal" espoused by Rotter (1954). When an individual's minimal goal is high, more competent performance is necessary to obtain approval than when the minimal goal is low (Crandall et al., 1960;

Rotter, 1954). In practice, the concept implies that when two youths with equal performance proficiency get similar external reinforcements, it is the youth with a high minimal goal who would experience the reward as failure and not the youth with a low height of standard (Kristijansson, Sigfusdottir, Allegrante, & Helgason, 2009; Crandall et al., 1960; Rotter, 1954). In health behaviour, it could be encouraged through health training that mere knowledge and meeting the bare minimum standards of HIV and AIDS prevention would not be enough. Taking a more holistic life perspective with high standards of self-protection and the protection of others as well could be central to HIV and AIDS preventive education (Ebbeling et al., 2007).

The forms of achievement standards as perceived by the youth can take various forms. There could be scales with cut-off points to denote success or failure, and approval or disapproval. Achievement standards could be in form of numerical scores, class rank, or reports. Individuals can be strict with their self-standards, they may take an "all-or-none" approach. They either succeed or fail. Some individuals could evaluate their own performance by responding to small increments in performance above the minimal goal with increased excitement and self-approval. Self-disapproval occurs when their proficiency gradually drops below their minimal goal (Crandall et al., 1960; Rotter, 1954). In health promotion, when an individual starts to experience relapses and to be involved in unsafe sexual relations, there is good reason to believe that they are falling behind their minimal goal. Individuals with high achievement standards could be distressed by the falling self-standards (Calogero & Watson, 2009; Crandall et al., 1960; Flett, Blankstein, & Hewitt, 2009; Mann & Ward, 2007).

Breadth of standards as a parameter of achievement standards refers to the degree that achievement standards may be specific to classes of achievement behaviour and areas of achievement experience or generalised across such behaviours and areas (Crandall et al., 1960). Some youths seem to apply similar standards to their achievement behaviour regardless of the situation or achievement area involved (Crandall et al., 1960). This is characteristic of individuals with high a standard of achievement who, regardless of the area they participate in, are satisfied only with exceptional proficient performance.

Stability of standards as a dimension of achievement standards denotes the degree to which an individual's standards are vulnerable to change as a function of the reactions of other persons or of new experiences (Crandall et al., 1960). In social learning theory, standards change with new experiences (Holtzman & Seirawan, 2009). An individual's level of aspiration may change as a result of specific successes and failures. In the same way, stability of standards varies with individuals. Some individuals are amenable to change their achievement standards while other may be rigid. In the

face of failure, some individuals may raise their standard while others may lower the standard. The raising and lowering of self-standards could be moderated by an individual's locus of control.

In HIV and AIDS research, the lowering of self-standards in health promotion could make individuals vulnerable to HIV infection. Compromising personal health due to complications posed by disease prevention plans should be received as a challenge that requires proactivism and the promotion of achievement-oriented health behaviours (Israel & Jozefowicz-Simbeni, 2009; Skidmore, Dede, & Moneta, 2009; Lanjananda & Patterson, 2009; Rotenberg, 2009).

Present source of achievement standards is a parameter of achievement standards which refers to the evaluation of achievement proficiency as being influenced by either internal or external forces. Some individuals attribute achievement effort to their achievement standards and they hold autonomous achievement standards. In contrast, other individuals characteristically look to other persons to define the competence of their performance. In effect, their standards mirror or reflect the standards or reactions of other people and such standards are called reflective achievement standards (Crandall et al., 1960). In locus of control research, individuals with autonomous achievement standards resemble behaviours of individuals with an internal locus of control while individuals with reflective achievement standards show behaviours characteristic of individuals with an external locus of control (Crandall et al., 1960; Wang, Koh, & Chatzisarantis, 2009). Individuals with autonomous achievement standards have incorporated achievement standards of significant others such as parents, culture, or society and have come to accept these standards as their own even in the absence of the significant others. It is these standards that the individual uses in novel situations to evaluate their own behaviour and these standards determine achievement-oriented behaviours in individuals. It could be argued that individuals with reflective achievement standards in sexual health tend to choose sexual partners based on the comments they receive from others about the attractiveness or fidelity of the their partners which could be a risk factor in HIV and AIDS risk reduction.

An individual's achievement expectancy, attainment value, and achievement standards can be used to predict achievement-oriented behaviours in various psychological situations. An individual's achievement-oriented behaviour is affected by the importance he or she attaches to his or her goals, that is, the attainment value, and the standards he or she employs to evaluate his or her performance and the expectations he or she holds regarding the probable success of his or her achievement efforts (Bhano & Javanovic, 2009; Crandall et al., 1960; Howell & Buro, 2009; Steinmayr & Spinath, 2009). Achievement expectancy is the probability held by the individual that their achievement effort will lead to goal attainment (Crandall et al., 1960). Achievement-oriented behaviours are characterised by task persistence.

In health promotion, health educators could target attainment value, achievement standards and achievement expectancy in predicting HIV and AIDS risk reduction behaviours. Strong attainment values and task persistence could be linked to health promotion behaviours. Achievement-oriented behaviour in HIV and AIDS risk reduction could be indicated by behavioural responses such as insistence on condom use, information seeking behaviours, partner persuasion to stick to safer sex habits, and the promotion of sexual health education between partners.

3.7.4 Achievement-oriented behaviour and beliefs about control of reinforcement

Achievement behaviours could be influenced by an individual's belief that they could be responsible for outcomes of their behaviour. Individuals could believe that their actions produce the reinforcements which follow their efforts or they may feel that the rewards and punishments meted out to them are at the discretion of powerful others or are in the hands of luck or fate (Mc Ghee, & Crandall, 1968; Crandall, Katkovsky, & Crandall, 1965). The same reinforcement could be viewed by another individual as outside of their influence. If an individual believes that they have little control over the rewards and punishments they receive, they could have little reason to modify their behaviour in an attempt to alter the probability that those events could recur (De Wit & Dickinson, 2009; Crandall et al., 1965; Gatzke-Kopp et al., 2009). Rewards and punishments in such situations lose a lot of reinforcing value because they are not linked to the strengthening or weakening of an individual's behaviour.

The development of internal locus of control and external locus of control among the youth could be influenced by parenting styles and socialisation processes. Young people could develop an internal control of reinforcement if society is protective, loving, warm, loving, praising, supportive, non-threatening, nurturant, approving, and non-rejecting (Katkovsky, Crandall, & Good, 1967). If adults are rejecting, punitive, domineering, and unpleasant, the youth could develop inferiority feelings. The youth could be delayed in assuming societal roles for which they could contribute positively to human welfare if given the chance. However, due to the historical destabilisation, dehumanisation of Black communities during Apartheid and the social, political and economic difficulties facing South African communities today, it could be argued that the majority of Blacks may not be able to provide adequate psychological and material resources to their families (Braude, 2009; Freund, 2009; Irwin, 2009).

3.7.5 Achievement-oriented behaviour and academic achievement

In terms of academic achievement, individuals with an internal locus of control tend to value achievement behaviours more than individuals with an external locus of control (Lefcourt, 1982; Phares, 1976). With respect to health promotion, individuals with high achievement behaviours tend

to take health risk as a challenge worth conquering and are usually involved in community mobilisation for health causes (Epp, 1995; Fiscella & Kitzman, 2009; Misra et al., 2009; McClelland, 1961).

Students who believe in the contingency between effort and outcomes usually work hard to achieve set goals. In a university environment, students know that they are expected to read in order to attain the desired qualification but it is not uncommon to find students who see no relationship between passing and studying or completing and submitting written assignments. In locus of control research, the university environment is considered as an environment that offers life successes and achievement opportunities. Achievement-oriented behaviours are not determined by an individual's level of intelligence but achievement motivation (McClelland et al., 1953; Witkow, 2009). A student's achievement motivation is manifested by the amount of time they spend on intellectual free-play activities and the intensity of striving in those activities (Crandall, et al., 1962; Lefcourt, 1982; Morris & Finnegan, 2009; Phares, 1976). Students with an internal locus of control in high school were found to spend more time doing homework than social loafing (Finnegan, Morris, & Lee, 2009; Franklin, 1963). It was also established that students with an internal locus of control were more persistent in their attempts to solve complex logical puzzles (Chang & Ho, 2009; Wang, 2009). In support of the relationship between internal locus of control and achievement-oriented behaviours, students with good grades were found have an internal locus of control orientation (Kennett & Reed, 2009; Li, Cheung, Chung, & Kwan, 2009; Mc Ghee & Crandall, 1968). These studies confirmed the relationship between an individual's perceptions of control and achievement-oriented behaviour (Denny & Steiner, 2009; Lefcourt, 1982). In a five-year study with university students, it was found that locus of internal locus of control orientation predicted success in university studies (Dowden, 2009). Most of the students with an internal locus of control completed graduate studies while most of the students with an external locus of control dropped out of university. Internal locus of control and high aptitude among first-year university students predicted success in graduate studies (Bjork, Bjorck, Clinton, Sohlberg, & Norring, 2009; Neuderth, Jabs, & Schmidtke, 2009; Nord, Connelly, & Daignault, 1974; Stumm, Gale, Batty, & Deary, 2009; Torres et al., 2009; Warner, 2009).

3.7.6 Race, ethnicity, culture and achievement-oriented behaviours

Achievement behaviours and preferences could vary with race, ethnic group or culture (Gwandure 2009a). Some races or ethnic groups prepare themselves for achievement and take pride in national or group successes while others are contented with the little things they have in life (Hamilton-Attwell, 1998). In the US, it was reported in the Coleman Report (1966) that a belief in personal control over academic awards was associated with achievement behaviours. It was highlighted in the report that a

student's attitude had a stronger relationship with achievement behaviour than other school factors combined. Achievement-oriented behaviours were described as the extent to which a student felt that he or she had some control over his or her destiny. In this Coleman Report (1966), it was indicated that African-American students and other minority students, except Asian students, had far less conviction than White students, that they could control their own environment and future (Coleman & Campbell, 1966; Lefcourt, 1976; Phares, 1976).

In the US today, African-American students are reported to have low academic and work-related performance records (Davis, 2003; Ferguson, 2003, Harper & Tuckman, 2006; Ho, Thomsen, & Sidanius, 2009; Roderick, 2003). African-American students in primary school, secondary school and in university are reported to experience harsh treatment and punishment by teachers and the majority of them are put in behaviour modification classes, special learning classes and most African-Americans are granted extended degree completion periods due to poor performance and a generalised reluctance to be seriously committed to work (Roderick, 2003; Webb-Johnson, 2002). The African-American students are considered to be violent, disrespectful, uncooperative, and tend to see no strong relationship between school attendance, completion of university studies and prospects of later gainful employment (Franklin, 1999; Noguera, 2003). Their teachers generally tend to ignore them because of their apparent lack of moral and ethical standards upheld by the school system (Taylor, Kuo, & Sullivan, 2002). They generally drop out of school or are expelled from school due to conduct disorder. The majority of them are convicted and sent to prison for serious offences by the age of thirty years (Bonhomme, Stephens, & Braithwaite, 2006). They constitute the majority of students attending disciplinary hearings and those facing academic exclusion in universities (Roderick, 2003). The majority of college students receiving treatment for substance abuse and those on rehabilitation programmes in US general hospitals are largely African-Americans (Artiles, Hary, Reschly, & Chinn, 2002). The majority of students presenting with psychopathology in US Universities are mainly African-Americans (Kistner, David, & White, 2003). The home-school dissonance tends to affect the psychological functioning of African-American students more than any other race in the US (Repetti, Taylor, & Seeman, 2002). There seems to be a disconnect between the student's home environment and the education system (Miller-Cribbs, Cronen, Davis, & Johnson, 2000). In their communities, achievement-oriented behaviours and individual accomplishments receive less attention than family values and collectivistic approach to life challenges. In contrast, the achievement-oriented and individualistic US educational system tends to foster independence, self-reliance, competitiveness, individuality, inner-directed behaviours, and the education system embraces values of the middle class (Arunkumar, Midgley, Urdan, 1999; Gay, 2000; Kistner et al., 2003; Kumar, 2006).

In a study with immigrant populations, it was established that some cultures promote achievement oriented behaviours more than others (Akande, 2008; Maehr, 2008; McClelland, 1961; Rosen, 1969). Immigrants with middle class values were found to have more achievement-oriented behaviours than resource poor immigrants and resource poor locals (McClelland, 1961; Rosen, 1969). The need for achievement was found to correlate with internal locus of control although the concepts were located in different theories (Phares, 1969; Rosen, 1969). Social mobility and achievement-oriented behaviours were more pronounced among Greeks and Jews in the US (Rosen, 1969). Achievement-oriented societies cultivate ideas and behaviours that promote human welfare through work, planning, and investment for the future (Koh & Wang, 2009; Lansford, Deater-Deckard, & Bornstein, 2009; Rosen, 1969). They seek to socialise their youth about the importance of education, and the sharpening of occupational and entrepreneurial skills to survive in a competitive environment (Koh & Wang, 2009; McClelland, 1961; Rosen, 1969). Middle class parents with tertiary level education tend to teach achievement-oriented behaviours in their children (Acharya & Joshi, 2009). They inculcate protestant work ethic values in their children. They teach their children to be diligent, hard working, and to be restrained in their expenditure. They maintain their social status by accumulating credible wealth and good health. Hard work and success in life are factors that are considered to liberate the individual from life stressors. However, In South Africa, the majority of university students have parents with low levels of education because Apartheid restricted educational opportunities of the Black populations and there were limited economic opportunities for the previously disadvantaged groups to be successful in business (Badat, 2009; Cook, 2009; Meel, 2009).

Achievement-oriented behaviours were found to differ between rural and urban communities (Rosen, 1969; Sarwar, Bashir, Khan, & Khan, 2009). In the US, rural communities tend to have less achievement motivation as compared to urban groups (Rosen, 1969). Researchers on achievement-oriented behaviours argue that an individual's psychological and cultural orientation towards achievement influence their motivation to succeed (McClelland, 1961; Rosen, 1969; Warikoo & Carter, 2009). An individual's desire to excel, enter the competitive race for social status, and willingness to appreciate the high value placed on personal achievement could determine their social mobility (Rosen, 1969). Achievement motivation can be enhanced through socialisation processes such as achievement training and independence training (Rosen, 1969; Turner, Chandler, & Heffer, 2009). Achievement training is brought about by the inculcation of norms and values, standards of excellence, setting achievable high goals, and setting high expectancy for success (Dotterer, McHale, & Crouter, 2009). Society or parents could foster the development of independence in individuals by encouraging individuals to be self-reliant and society could grant individuals the autonomy to decide for themselves, freedom of action, and taking responsibility for success or failure (Martin & Dawson,

2009; Niemiec & Ryan, 2009; Rosen, 1969). In essence, achievement training of the youth seeks to help the youth behave well and perform tasks correctly while independence training is about teaching the youth the values of self-determination and freedom (Rosen, 1969). However, it was observed by McClelland (1961) that there are notable ethnic differences in achievement motivation all over the world. Achieving ethnic groups stress excellence and goal directed behaviours. When training the youth about HIV and AIDS risk reduction, it could be important to help them develop values of freedom and independence and acting responsibly to avoid HIV infection.

In the US, White people show higher achievement behaviours than African-Americans (Herman, 2009; McClelland, 1961; Rosen, 1969). An individual's social class influences achievement motivation (Rosen, 1969; McClelland, 1961). Individuals from resource poor communities tend to show low achievement motivation irrespective of race (Lefcourt, 1976; Phares, 1969; Rosen, 1969). Different races, ethnic groups, and cultures show variations in achievement motivation with particular reference to activist-passive orientation, individualistic-collectivistic orientation and present-future orientation (Kouli & Papaioannou, 2009; Rosen, 1969). A society's activist-passive orientation refers to the extent to which the culture of a group encourages the individual to believe in the possibility of an individual manipulating the physical and social environment to their advantage (Niemiec & Ryan, 2009; Rosen, 1969). An activist culture encourages the individual to believe that it is both possible and necessary for them to improve their status, whereas a passive culture promotes the acceptance of the notion that individual efforts to achieve mobility are relatively futile (Gore, Cross & Kanagawa, 2009; Murphy, Brecht, Herbeck, & Hung, 2009; Rosen, 1969). The individualistic-collectivistic orientation of a group refers to the extent to which the individual is expected to subordinate their needs to the group. It refers to the degree to which society expects the individual to maintain close physical proximity to the family even that could limit the individual's career opportunities (Rosen, 1969; Williams, Newman, Sakamoto, & Massaquoi, 2009). The concept also refers to the degree to which society emphasises group incentives rather than personal rewards (Rosen, 1969). The collectivist society places a greater stress than the individualistic society on group ties and group incentives (Rosen, 1969). Present-future orientation of a group concerns the society's attitude toward time and its impact upon behaviour (Rosen, 1969; Utsey, Hook, Fischer, & Belvet, 2008). A present oriented society stresses the merit of living in the present emphasising immediate gratification. On the other hand, a future oriented society encourages the belief that planning and present sacrifices are worthwhile, or morally obligatory, in order to insure future gains (Adam, 2009; Rosen, 1969; Ralston, Holt, Treppstra, & Yu, 2008). The African society could be described as largely passive, collectivistic and present-oriented (Lefcourt, 1976; Rosen, 1969). Health educators

need to be aware of the achievement orientation of the target group so that their programmes could be well received by the participants.

Some cultures have learned the virtues of manipulating the environment to obtain rewards and prosper even if the external environment were hostile (Eide, Showalter, & Goldhaber, 2009; Rosen, 1969). Even though family and kinship ties are important in an individual's life, achieving societies regard loyalty to the group as not threatened by physical mobility. Individualistic societies encourage their youth to leave home in search of better opportunities (Rosen, 1969; Stewart, 2008). Parents plan, work hard, aspire to achieve, and save money for the future of their children (Rosen, 1969). In non-achieving societies, values could be placed on beliefs in fate, fostering a tradition of resignation, predestination, the importance of the extended family, seeing the future as unpredictable or capricious, and a strong belief in employing relatives at work or keeping relatives around (Rosen, 1969; Zhou, Leung, & Bond, 2009). Low achieving societies are vulnerable to diseases (Hayness, Ruthig, Pery, Stupnisky, & Hall, 2006; Shim, Ryan, & Anderson, 2008).

3.7.7 Achievement-oriented behaviour and health promotion

Some communities are more prone to disease infection than others. In health promotion and disease prevention initiatives in Africa, it is common to find communities that are vulnerable to diseases due to lack of means of protecting themselves (Friedland et al., 2009; Manderson, Aagaard-Hansen, Allotey, Gyapong, & Sommerfeld, 2009; Stewart, 2009). Preventable diseases such as malaria, cholera, tuberculosis, bilharzia, polio, sexually transmitted diseases and malnutrition could affect some communities, countries, and continents worse than others (Abzug & Pelton, 2009; Hoque & Hoque, 2009; Lauren et al., 2009). In South Africa, preventable diseases affect resource poor communities and previously disadvantaged groups worse than the privileged groups (Essuon, Simmons, Stephens, Richter, Lindley, & Braithwaite, 2009; Schneider, Bradshaw, Steyn, Norman, & Laubscher, 2009). There are challenges faced by some Black communities such as sanitation, inadequate housing, health inequality, high infant mortality rate, shortening life span of the adult population and that South Africa has the highest per capita violence-related mortality rate in the world (Kritzinger, et al., 2009; Levine & Robins-Browne, 2009; Mintz, & Guerrant, 2009; Stein, 2009). The harsh health, physical, social, political, and economic environments experienced by the majority of Black South Africans could have a negative impact on their achievement behaviours, locus of control, and health risk reduction behaviours (Basile, Espelage, Rivers, McMahon, & Simon, 2009; Bembenuddy, 2009; Carter-Edwards, Godette, White, & Tyson, 2009; Lefcourt, 1976; Phares, 1976).

The South African society could mitigate some of these challenges by promoting achievement-oriented behaviours in their communities (Holt, Clark, Kreuter, & Scharff, 2000; Petersen, Bhana, & McKay, 2005). Communities that do not take action to remedy health inadequacies could be at risk of being affected by a number of diseases that are preventable (Meehan, Mackenzie, Shingadia, & Booy, 2009; Sliwa et al., 2008). Health education programmes could help communities change their health habits and work hard to promote healthy environments. The communities could train and socialise their youth about health values through community health action programmes and HIV and AIDS-related projects (Chirowodza, Van Rooyen, Joseph, Sikotoyi, Richter, & Coates, 2009; Smith, Harper, Potts, & Thyle, 2009; Schneider, Hlope, & Van Rensburg, 2008). Achievement-oriented behaviours in health promotion could be realised through community projects such as the development of plans for reducing targeted diseases in specific locations. The HIV and AIDS projects could engage local leaders and external health promoters as partners in health development. The involvement of local leadership could create a sense of community ownership of health outcomes (Campbell, Gibbs, Maimane, Nair, & Sibiyi, 2009; Nakibinge, Maher, Katende, Kamahi, Grosskurth, & Seeley, 2009; Schenk, 2009). Taking individual responsibility for health outcomes is an achievement standard that could be internalised by individuals and communities. The initiative could motivate the community to maintain risk reduction behaviours among its members and the achievement of health standards could be upheld as indicative of community success (Dolan & Tsuchiya, 2009; Lazarus, Struthers, & Violari, 2009; Petersen et al., 2009).

Training programmes in HIV and AIDS risk reduction could focus on risk awareness and individual responsibility in risk reduction (Minkler, 1999; Mittelmark, 2001). Health training programmes could emphasise social responsibility for health. They can identify local health needs and lobby policy makers for better health. High priority in community health promotion should be placed on health impact assessment reviews and the need to take action to improve health standards. It is also argued in health promotion studies that knowledge of consequences for the group for an individual's behaviour is important in predicting health risks in a study population (Andrew, Netemeyer, & Burton, 2009; Krewski et al., 2009; Yach, Stuckler, & Brownell, 2006). Achieving individuals and communities would seek to improve their knowledge about a disease in order to prevent illness or deaths (Labeau et al., 2009; Schenk, 2009). The training programmes could make participants take pride in preventing HIV and AIDS as an achievement target and not simply attending training courses to get attendance certificates or salary increment (Rotheram-Borus, Swendeman, Flannery, Rice, Adamson, & Ingram, 2009). Training participants about staying healthy as an achievement quality and use of models in health promotion training could be effective in reducing health risks. Social marketing in HIV and AIDS risk reduction in South Africa could focus on modelling achievement-oriented behaviours

among the youth and highlighting health-protective behaviours worth emulating (Anderson, 2009; Basu & Wang, 2009; Sargent, Gibson, & Heatherton, 2009).

HIV and AIDS risk reduction programmes could plan strategies that set goals for individuals and communities as achievement standards (Harrow, Hansford, & Astrachan-Fletcher, 2009). Communities could be optimistic about the success of their health projects if they are constantly supported by HIV and AIDS specialists working in their area. Communities could, through their leadership, building a trusting relationship between healthcare providers and the communities. Both partners could cultivate the idea that an individual's health and the community's general health are positive outcomes for health promotion. The communities could realise that healthcare providers only serve as facilitators for achieving community health targets (Harvey & Bellack, 2009; Hobbs, & McLaren, 2009). If both parties are pragmatic in their approach to health problems affecting the community, there could be positive health outcomes (Bricker, Rajan, Zalewski, Andersen, Ramsey, & Peterson, 2009). Communities and health educators could achieve this target by developing programme implementation calendars in which every member of the community is expected to take part. Community participatory methodologies such as the participatory rural appraisal technique could be used in developing achievement-oriented behaviours of the community and in health promotion training of community health workers (Kaponda et al., 2009; Williams, 2009).

3.7.8 Achievement-oriented behaviour health risk reduction training

Locus of control training programmes have succeeded in reducing health risks associated with low achievement-oriented behaviours (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Individuals and communities could be trained to improve their health by making use of locus of control training techniques (Friedland et al., 2009; Manderson et al., 2009; Stewart, 2009). Using locus of control concepts of achievement-oriented behaviour in health training programmes has been shown to reduce the occurrence of preventable diseases and health conditions such cholera, bilharzia, polio, sexually transmitted diseases, unwanted pregnancies or dysentery (Abzug & Pelton, 2009; Hoque & Hoque, 2009; Lauren et al., 2009; Lefcourt, 1976).

Achievement-oriented behaviour is associated with locus of control and health promotion (Denkowski, Denkowski, & Omizo, 1983). Achieving societies or communities tend to have better health and health facilities than non-achieving societies (Poter, & Waisberg, 1992). They invest in health and education of their youth so as to remain competitive in a fast-changing global environment. Achievement-oriented behaviours are guided by societal standards that approve or disapprove certain behaviours. Desirable behaviours are rewarded and undesirable behaviours are punished. In so doing,

an individual's autonomy and health initiatives could be affected by the values of their community. The youth from disadvantaged backgrounds or collectivistic societies could have low expectancy about individual success while those from individualistic communities could have high expectancy for individual success. In this context, achievement-oriented behaviours are associated with the avoidance of contracting diseases because an achieving individual does not want to be distracted from achieving their life dreams by ill health. High achievers are guided by goals they set to reach. In terms of social learning theory, achievement-oriented behaviours result from individual learning processes. Behaviours that are reinforced are pursued while behaviours that are punished are avoided. Consequently, an individual's achievement-oriented behaviours could be developed through group socialisation or individual training. Exposing individuals and groups to locus of control-based achievement-oriented behavioural modification or training programmes could help transform non-achieving individuals and groups into achievers. Societies that are not keen to compete with others in health promotion activities could be at risk of health hazards.

In terms of achievement-oriented behaviours and health promotion, it could be argued that most of the developing countries tend to have low scores on the human development index as reported by the World Health Organisation. They tend to be vulnerable to diseases which could be largely due to lack of initiative in preventing the diseases. Even if resources might be inadequate, achievement-oriented behaviour at a national level could solicit health funds from international health organisations that could assist countries with material resources and capacity building training programmes. However, in the context of locus of control and health, overreliance on donor organisations could create a dependence syndrome that could weaken the desire to individually manage and determine personal health. In African universities, most of the students depend on government subsidies to finance their education. Achievement-oriented behaviours should be fostered in students who receive financial aid so that they realise the relationship between bursaries and achievement otherwise the financial assistance could be wasted. Achieving students would seek to avoid academic exclusion and contracting diseases. They could use the financial assistance to buy books and pay for other living expenses. If the challenges experienced by the student are perceived as overwhelming, the student could develop psychological distress which could have a negative effect on a student's locus of control and health.

The transition from home to university could pose social and economic challenges that could affect a student's achievement-oriented behaviours. Most of the traditional African families uphold values of "umuntu ngumuntu ngabantu" philosophy which supports collectivist approaches towards life situations. South African universities are modelled along western, capitalistic, and individualistic ideologies. The levels of aspiration for achievement and health promotion could be different between students from previously disadvantaged groups and students from privileged groups. In an African

context, individuals may not visit medical centres, hospitals, and clinics for general health check up unless they feel they are really ill. Among traditional African males, health-seeking and help-seeking behaviours may not be regarded as forms of achievement-oriented behaviours. That could be regarded as feminine behaviours in a traditional African context. The concept of health, illness, and treatment could be construed differently among the middle class and disadvantaged groups. Diseases that could be mostly feared by the middle class may not be the ones individuals from the previously disadvantaged groups may regard as threatening.

Whereas the belief in the strength of the extended family is held in high esteem in collectivistic societies, such beliefs are regarded as characteristic of non-achieving societies in social learning theory. The health values of the family could influence the behaviour of students in university. The students could be dependent on the extended family for their upkeep and social support. Students receiving study loans could use some of the money to assist unemployed parents, relatives, or siblings to meet some of the living expenses. In achievement motivation research it is argued that people from rural communities tend to have low achievement motivation. It is now common among South African universities to find a large number of students in university residences coming from rural areas. It is also argued that rural communities could be vulnerable to diseases due to lack of public information on health promotion. Limited exposure to print and electronic media about health issues could make rural communities susceptible to diseases.

Traditional African communities are usually considered to be ``passivistic`` in achievement motivation research. In health matters, passivistic communities tend to believe in family methods of promoting health. There could be strong ties between family members and the immediate community to such an extent that new health information provided by professionals may not be taken as important since outsiders are considered as strangers. Collectivistic communities tend to focus on the present and not future orientation. It could be common among university students to focus on the present and ignore future health consequences. The unpredictable social, economic, and political environments could affect students` achievement motivation to focus on the future. As members of the extended family, they could be affected by the current instability in the South African labour market. Students in university could be affected by retrenchments and company closures as that could imply the withdrawal of bursaries by some of the affected organisations. These external events affecting the family could have a negative impact on locus of control and health control among university students in South Africa.

It is observed that less developed communities tend to be more vulnerable to diseases and groups in the endemic areas tend to be passive about their health as well. The apparent lack of initiative about

health in some communities in South Africa could be linked to infrastructural challenges. Some municipal authorities may frustrate communities by not providing adequate services. Lack of adequate housing and social amenities could make it difficult for the members of the public to access essential healthcare services. It could be argued that some of the youth in neglected areas could be unemployed and hence resort to drugs, crime, and violence. In such situations, non-achievement-oriented behaviours of individuals and groups could be a result of long periods of neglect by local authorities. It could be expected in studies on achievement-oriented behaviours among university students to find low scores on achievement motivation and academic performance among students from resource poor communities. Low achievement drive could lead to lack of initiative in health control which might result in health risks. Perhaps one of the challenges of health training programmes could be that of motivating uninterested individuals and communities to be motivated by the desire to stay health and prevent HIV and AIDS.

3.8 Deferment of gratification

3.8.1 Definition of deferment of gratification

Deferment of gratification refers to the postponement of immediate small rewards for future large rewards. The concept is also referred to as delay of gratification, delay of reward or willingness to delay gratification (Lefcourt, 1976; Mischel, 2009; Phares, 1976). In order for the individual to be able to control their environment, to achieve competence, or to reach positions of power and influence, it generally requires that the individual eschews the lure of the present for the greater promise of the future (Brenner, 2002; Phares, 1976). Present temptation seems to be more attractive than activities that could lead to the attainment of a large goal in the future (Bembenutty & Karabenick, 1998; Fries & Dietz, 2007; Phares, 1976). The youth could drop out of university to find work in order to satisfy their current sensual needs (Bradshaw, O'Brennan, & McNeely, 2008; Molde, Pallesen, Bartone, Hystad, & Johnsen, 2008; van der Veen & Peetsma, 2009). The youth could marry early before they finish university studies due to their inability to defer gratification (Akanle, 2007; McAdam, & Mirza, 2009; Phares, 1976; Vohs & Finkel, 2006). Delay of gratification looks at the ability of individuals to resist present little monetary incentives for future huge sums of money or capital investments, and the ability to self-regulate in relation to indulgence (Wulfert, Block, Santa Ana, Rodriguez, & Colman, 2002). It is argued in social learning theory that distant goals require the sacrifice of immediate pleasures (Lefcourt, 1982). Current pleasures can seduce an individual away from a long and seemingly fruitful enterprise (Fries & Dietz, 2007; Lefcourt, 1982). The concept is simply illustrated when individuals are given two choices, one an immediate small prize, and the other, an option to wait for a large gift to be delivered after some time (Lefcourt, 1982; Mischel,

2009). Delay capacity is evident when the individual chooses to wait for a larger reward to come (Lefcourt, 1982; Mischel, 2009). A generalised attitude, belief, or expectancy regarding the nature of the causal relationship between an individual's behaviour and its consequences might affect an individual's choices or preferences in different situations (Fries & Dietz, 2007; Rotter, 1966).

In practice, human behaviour is largely guided by the choice between immediate rewards and delayed rewards (Mahrer, 1956; McClure, Laibson, Loewenstein, & Cohen, 2004; Myerson & Green, 1995). Delay of reward can result in the decline of the value of the reward for some individuals (Mahrer, 1956; Petry & Casarella, 1999). With decreased value, learning could be less effective and some individuals could choose immediate rewards over delayed rewards. In terms of social learning theory, it is stated that the reinforcement value of any external reinforcement may be ideally defined as the degree of preference for any reinforcement to occur if the possibilities of their occurring were all equal (Mahrer, 1956; Mischel, 2009; Rotter, 1954). An individual's expectancy is defined as the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour on their part in a specific situation or situations (Rotter, 1954). In social situations, an individual's experience with reinforcements could make them develop some level of probability or expectancy that the delayed reinforcements will occur (Mahrer, 1956; Mischel, 2009). The level of the probability is presumed to be an important factor in the preference strength for the immediate or delayed reinforcements (Bembenutty, 2009; Evans & Beran, 2007; Lee, Lan, Wang, & Chiu, 2008; Mahrer, 1956; Rotter, 1954). It is contended in social learning theory that a decrease in the expectancy of occurrence of delayed reinforcements will result in a decrease in the strength of the preference for these reinforcements (Everitt & Robbins, 2005; Mahrer, 1956; Rotter, 1954; Wittmann & Paulus, 2008; Woolverton, Myerson, & Green, 2007). The demand for immediate gratification is associated with low socio-economic status, limited upward mobility, less investment in the future, and low educational status (Bembenutty & Karabenick, 1998; Ray & Najman, 1986).

3.8.2 Deferment of gratification and expectancy

An individual's expectancy is based on the probability that a particular reinforcement will occur as a function of a specific behaviour on their part in a specific situation or situations (Phares, 1976; Rotter, 1954). Even though expectancy could be independent of the value of the reinforcement, there might be specific conditions in which a learned relationship exists between expectancy and reinforcement value (Leung, 2008; Phares, 1976; Vansteenkiste, Lens, de Witte, & Feather, 2005; Williams, Anderson, & Winnett, 2008). Expectancies are learned, modified, or extinguished on the basis of reinforcement (Declercq, de Houwer, & Baeyens, 2008; Gerber & Hendel, 2006; Hogarth, Dickinson, Hutton, & Elbers, 2006; Phares, 1964).

Researchers on delay of gratification argue that delay in a reinforcement sequence significantly alters the course of expectancy (Medina, Saegert, & Gresham, 1996; Schwartz, 1966). Expectancy is based on the reinforcements previously experienced in the same situation and the reinforcements which were experienced in other situations for functionally related behaviours (Schwartz, 1966). Expectancy which is based on previous experiences in the same situation is referred to as specific expectancy while expectancy that is based on related situations is called generalised expectancy. Both situation specific expectancy and generalised expectancy determine human behaviour in novel situations (Schwartz, 1966). Individual behaviour in delay of gratification is influenced by their expectancy that the promised reward would come. An individual's economic behaviour is also influenced by their expectancy (Leiser, Azar, & Hadar, 2008).

An individual's choice of action is based on their expectancy that their behaviour would lead to the attainment of particular reinforcements (Mischel & Staub, 1965). An individual's expectancy that the delayed reward would be forthcoming is a main determinant of the choice to defer immediate gratification for the sake of a larger delayed reward (Mischel & Staub, 1965; Soman et al., 2006). An individual's ability to delay gratification is associated with promise-keeping history, social responsibility, and length of the delay interval (Lieberman & Forster, 2008; Mischel & Metzner, 1962). Individuals with a high generalised expectancy for success would delay gratification and work towards the successful completion of set tasks to achieve the promised larger reward (Mischel & Staub, 1965). Individuals with low generalised expectancy showed difficulties relating to waiting for future larger rewards (Mischel & Staub, 1965). It was observed that individuals with low generalised expectancy would behave as if they had failed on tasks similar to those on which reward was contingent (Kellow & Jones, 2008; Mischel & Staub, 1965; Yukselturk & Bulut, 2007). Because they perceived themselves as failures before the event, individuals with low generalised expectancy were less willing to wait for larger rewards than individuals with a high generalised expectancy for success (Johnson, Ruggero, & Carver, 2005; Mischel & Staub, 1965).

In terms of social learning theory, the implications for training programmes on delay of gratification could focus on increasing an individual's willingness to work and await larger rewards. Individuals could be trained in ways of that could increase expectancy for success and self-discipline (Beran & Evans, 2009; Hirsh, Peterson, & Morisano, 2008; Mathias, Marsh-Richard, & Dougherty, 2008; Mischel & Staub, 1965). In health promotion, individuals could be exposed to training programmes that could make them realise the connection between high expectancy for success and disease prevention.

Studies on ``father-absent`` and ``father-present`` have assessed young people`s delay of gratification behaviours when parents are away (Mischel, 1961). Preference for delaying immediate gratification by the youth in the absence of adults or parents was associated with maturity, future orientation, financial planning, social adjustment, and social responsibility (Mischel, 196; Webley & Nyhus, 2006). The youth who preferred immediate small rewards to larger rewards in the absence of parents or elders showed delinquent behaviours, low need for achievement, and were acquiescent or yea-saying in their response to questions relating to immediate gratification (Mischel, 1961). Inability to delay gratification by the youth in the absence of adults was associated with the development of psychological disorders, deviant tendencies and crime among the youth (Chisholm, Quinlivan, Petersen, & Coall, 2005; Kruger, Reischl, & Zimmerman, 2008; Mischel, 1961).

The implications of the ``father-absent`` and ``father-present`` studies on willingness to delay gratification and health could be that the individual should be able to internalise the contingency between delay of gratification and future benefits. As the youth develops and matures they begin to participate in an environment that extends beyond the immediate family and therefore their expectations with respect to promise-keeping, trust and choice-behaviour in terms of delay of gratification become contingent upon various factors and experiences other than those within the household itself (Mischel, 1961). In HIV and AIDS risk reduction programmes in universities, the training could emphasise the need for students to delay gratification and engage in behaviours that promote health in the absence of parents or significant others.

3.8.3 Deferment of gratification and temptation

Researchers on delay of gratification have found a strong relationship between an individual`s ability to delay gratification and their ability to resist temptation (Rossier, Bolognini, Plancherel, & Halfon, 2000; Mischel & Ayduk, 2002). The ability or willingness to delay gratification is associated with ego strength or impulse control (Alberts, Martijn, Nievelstein, Jansen, & de Vries, 2008; Carver, 2005; Mischel, & Gilligan, 1964; Schmeichel & Vohs, 2009; Vitaro, Arseneault, & Tremblay, 1999). An individual`s choice behaviour for immediate, smaller rewards as opposed to larger benefits is influenced by their locus of control. The conflict of choice is brought about by the pain of choosing something though less desired just because it is readily available as opposed to the choice of a more valued larger reward which is however delayed until a later time (Field, Santarcangelo, Sumnall, Goudie, & Cole, 2006; Kalenscher, Ohmann, & Gunturkun, 2006; Lowenstein, Rick, & Cohen, 2008; Mischel, & Gilligan, 1964).

The choice of either an immediate reward or delayed reward is behaviour which is influenced by an individual's expectancies of reinforcement. Resistance to temptation is expected to be a stable personality attribute. There could be a relatively consistent preference for immediate gratification and unwillingness to defer gratification for the sake of larger rewards in some individuals (Krueger, Caspi, Moffitt, & White, 1996; Mischel, & Gilligan, 1964). Many tempting situations can be viewed as offering gratification which is immediately available (Magen & Gross, 2007; Mischel, & Gilligan, 1964). In most societies, if an individual yields to temptation, it is regarded as deviancy (Mischel, & Gilligan, 1964; Shmueli & Muraven, 2007). If an individual resists temptation, abstains from risk sexual practices, and does not engage in deviant behaviours to get immediate needs, it could imply that they are able to defer immediate gratification (Jemmott, Jemmott, & Fong, 1998; Magen & Gross, 2007; Mischel, & Gilligan, 1964).

Response to temptation is associated with internal locus of control, superego strength, impulse control, and reward value of the prohibited gratification (McCuddy & Peery, 1996; Mischel, & Gilligan, 1964; Nir & Neumann, 2009). Sexual relations could be tempting (Baumeister, 2002; Garos, Kluck, Beggan, Martindale, Wheeler, & Zacchilli, 2008; Ward, Hudson, & Marshall, 1995). Individuals could be trained in locus of control-based methods of delaying sex and maintaining abstinence (Koehler & Chisholm, 2009).

3.8.4 Deferment of gratification and psychopathology

It is reported in deferment of gratification research that individuals with psychological disorders find it difficult to delay gratification (Bialer, 1961; Goldberg, Millstein, Schwartz, & Halpernfelsher, 2009; Krueger et al., 1996; Lawton, Conner, & McEachan, 2009). Psychological disorders are associated with inability to delay gratification, external locus of control and substance abuse (Archer, Kostrzewa, Beninger, & Palomo, 2008; Lefcourt, 1976; Mitchell, Fields, Esposito, & Boettiger, 2005; Phares, 1976; Plunkett, & Buehner, 2007). Special populations such as people with schizophrenia, psychosis, dissociative disorders, depression or mental retardation could show behaviours deficient in willingness to delay gratification (Cummins, Nadorff, & Kelly, 2009; Phares, 1976). Students in university could experience psychological distress resulting in some developing depression, stress, or other debilitating health complaints (Carey, Walker, Rossouw, Seedat, & Stein, 2008; Ghandour, Karam, & Maalouf, 2009; Revell, Vansteenwegen, Nicholas, & Dumont, 2008).

Impulse control is associated with willingness to delay gratification (Wulfert, Block, Santa Ana, Rodriguez, & Colman, 2002). The ability to self-regulate is associated with delay of gratification (Moulding, & Kyrios, 2006; Wulfert et al., 2002). Lack of impulse control is associated with addictive

behaviours, substance abuse, risky sexual behaviours, aggression, low academic performance, low truancy, low social competence, low self-esteem and violence (Casey, Jones, & Galvan, 2008; Wulfert et al., 2002). Lack of impulse control or self-control in children could persist into adulthood if not treated in childhood (Casey et al., 2008; Wulfert et al., 2002). Impulse control or self-regulation and delay of gratification could be assessed in situations where young people are given money incentives that accrue interest on money not used immediately. They could be assessed on their ability to delay the consumption of tasty food and any other immediately available rewards (Wulfert et al., 2002). Adolescents with self-regulatory deficits showed higher levels of unwillingness to delay gratification (Hoffmann, Friese, & Roefs, 2009; Wulfert et al., 2002). The youth in university could show non-delay of gratification behaviours such as consuming huge amounts of alcohol, transgressing against university rules, being involved in cigarettes and marijuana, and non-use of condoms (Hofmann, Friese, & Strack, 2009; Wulfert et al., 2002).

Impulsivity and the sense of control over one's destiny could be explained in terms locus of control. The ability to delay gratification and impulses when making a decision is strongly associated with mature ego functioning (Baumeister & Vohs, 2007; Gottdiener, Murawski, & Kucharski, 2008; Letzring, Block, & Funder, 2005; Shipe, 1971). The choice of delayed reinforcement among the youth is related to age, intelligence, social responsibility, achievement motivation, resistance to temptation, academic achievement, and severity of emotional disturbance (Ayduk, Rodriguez, Mischel, Shoda, & Wright, 2007; Shipe, 1971; Trentacosta & Shaw, 2009; Walton & Roberts, 2004). Impulse control influences social maladjustment, employability, social competence, recognition errors, lack of success striving, and choice of delayed gratification (Shipe, 1971; Trentacosta & Shaw, 2009). Impulsivity and locus of control change with increasing age (McIntyre, Blacher, & Baker, 2006; Shipe, 1971). Impulsivity in delay of gratification can be modified with training. The majority of individuals with psychological disorders could have impulsive behaviours, external locus of control orientation and they could show unwillingness to delay gratification in some psychological situations (Shipe, 1971; Walton & Roberts, 2004). In delay of gratification studies, it is reported that individuals with an internal locus of control are more likely than individuals with an external locus of control to delay impulse action, use foresight, and to plan ahead for the future (Shipe, 1971; Walton & Roberts, 2004)). Young people with an internal locus of control are more likely than the youth with an external locus of control to see themselves as being responsible for the outcome of events concerning themselves. They could expect to attain greater success by perceiving and capitalising on the relationship between success and individual effort as realistic (McIntyre et al., 2006; Shipe 197). Among students in vocational colleges, it was established that students with internal control and low impulsivity showed higher achievement levels (Shipe, 1971; Steinberg, Graham, O'Brien, Woolard,

Cauffman, & Banich, 2009). Social adjustment was also associated with internal locus of control and low impulsivity (Attance, 2008; Levy, Micco, Putt, & Armstrong, 2006; Shipe, 1971).

Cheating is associated with unwillingness to delay gratification among the youth (Mischel, 1961; Srull & Karabenick, 1975). The preference for delayed reinforcement among the youth correlated positively with social responsibility (Gibson, Khey, & Schreck, 2008; Mischel, 1961). In studies about reporting false results or cheating, it was established that young people with an external locus of control cheated more than young people with an internal locus of control (Greene & Paxton, 2009; Srull & Karabenick, 1975). The youth with an external locus of control reported of success in instances when success was not achievable (Karabenick & Srull, 1978; Srull & Karabenick, 1975). Individuals with an internal locus of control have a generalised tendency of showing personal integrity and responsible behaviours. It is reported in social learning research that there is a positive relationship between preference for immediate smaller rewards and lack of social responsibility (Mischel, 1961; Suhler & Churchland, 2009). This behaviour could be explained in terms of social learning theory as demonstrating that an individual's choice behaviour could be a function of their expectation that the reward would actually occur (Mischel, 1961). An individual's level of trust or willingness to postpone immediate smaller gratification for the sake of a later but larger reward in a choice situation may be regarded as indicative of social responsibility (Mischel, 1961). Delay of gratification and social responsibility are negatively related to delinquent and criminal behaviour (Mischel, 1961; Ramseyer, Pele, Dufour, Chauvin, & Thierry, 2006).

In HIV and AIDS risk reduction training, cheating behaviours about personal health could be targeted in health training. Individuals could lie about their health status or report false health behaviours just to please people around them and trainers. It is not uncommon in South Africa to find higher prevalence rates of HIV infection among population groups that could be expected to be more enlightened about HIV and AIDS (Anderson, Elam, Gerver, Solarin, Fenton, & Easterbrook, 2008; Kalipeni & Ghosh, 2007).

3.8.5 Deferment of gratification among the youth

Willingness to delay gratification among the youth is associated with locus of control of control (Bembenuddy, 2007; Suvivuo, Tossavainen, & Kontula, 2008; Zigler, 1992). It is argued in locus of control research that children and young adults with an external locus find it difficult to delay gratification (Burns & Dillon, 2005; Eigsti et al., 2006; Ford, Rose, & Thrift, 2009; Lefcourt, 1976; Strickland, 1973). Individuals with a generalised expectancy that events that happen to them are a result of their own personal behaviour choose rewards that are more valuable over time in contrast to

individuals who believe that the events that happen to them are beyond their personal control and understanding (Ayduk, 2007; Mischel, 2007; Strickland, 1973; Takaki & Yano, 2006). The ability to delay gratification is linked to the belief in behaviour-reinforcement contingency that could be assessed along a dimension of internal-external control of reinforcement (Hutchens, Senserrick, Jamieson, Romer, & Winston, 2008; Strickland, 1973).

Research on delay of gratification among the youth gained popularity after Bialer's (1961) study. The argument of the research was that children or young people might have limited conception of the relationship between outcomes of events and their own actions (Wulfert, Block, Ana, Rodriguez, & Colsman, 2002). Young people as a group could have a tendency to view their experiences, both positive and negative, as being largely influenced by adults. Adults or elders could be perceived as controlling their wellbeing. Children and adolescents with such a world view could have an external locus of control (Bialer, 1961; Cramer & Kelly, 2004; Gilligan & Lee, 2006; Harvey & Delfabbro, 2004). If their goal-directed behaviour is blocked or frustrated, the unpleasant experience could be construed as imposed by some outside agency (Bialer, 1961). If an undertaking by the youth is pursued to a satisfactory conclusion, or gratification is achieved, it is categorised as a pleasant experience (Bialer, 1961; Tavares, Zilberman, & Hodgins, 2005). The relevant cues to which the immature child or young adult responds could be conceptualised in hedonistic terms associated with the activity or its outcomes (Bialer, 1961; Frangou, Wilkerson, & McGahan, 2008; Hayward, 2007; Lasane & O'Donnell, 2005; Ljubotina, Galic, & Jukic, 2004).

It is contended in delay of gratification research that as the young individual gains maturity, they begin to realise that they can influence the outcome of events by their own actions (Arbuthnott, 2009; Bialer, 1961; Quayle, Vaughan, & Taylor, 2005; Shani, Igou, & Zeelenberg, 2009). The young adult could view their goal-directed behaviour as being internally controlled by themselves (Bialer, 1961). The child or young adult could have a shift or modification in delay of gratification and locus of control as they grow older (Bunge & Wright, 2007; Francis & Susman, 2009; Santucci, Silk, Shaw, Gentzler, Fox, & Kovacs, 2008). Their experiences could shift external locus of control orientation towards internal locus of control orientation (Bialer, 1961; Bunge & Wright, 2007). The young adult develops the ability to categorise events in terms of success and failure (Bialer, 1961; Kennett & Keefer, 2006; Kennett & Reed, 2009; Renn, Allen, Fedor, & Davis, 2005). If goal-attainment is recognised by the young adult as being due to their own ability, they could then attribute success to their own effort and hence they could become more internal in locus of control. When the young adult learns to conceive an unfavourable outcome as being due to their shortcomings, it should not only be perceived as unpleasant; but construed as failure (Beran, & Evans, 2006, Bialer, 1961; Stroebe, Mensink, Aarts, Schut & Kruglanski, 2008; Stroebe, Papies, & Aarts, 2008). This ability to

distinguish personal success and failure helps the young adult develop a sense of responsibility for the consequences of their own actions and not blame external forces as responsible for their success or failure. In delay of gratifications studies, an individual's ability to identify with success could lead to internal locus of control and task persistence in view of getting larger rewards in the end (Hoffman, Rauch, & Gawronski, 2007; Heslin, 2005; Ng, Eby, Sorenson, & Feldman, 2005).

The ability to delay immediate gratification requires the individual to be competitive by setting self-standards to guide long-term plans. The standards become reference points for self-judgement of success or failure (Bialer, 1961; Cervone, Shadel, Smith, & Fiori, 2006; Evans & Rosenbaum, 2008; Hoyle, 2006). Ego-involvement prevails when the situation in which the activities take place is of such a nature that the youth feels his or her ability is being put to the test (Bialer, 1961; Daniels, Hayness, Stupnisky, Perry, Newall, & Pekrun, 2008). Success builds an individual's ego and internal locus of control orientation. Positive outcomes drive the individual to postpone immediate bodily needs in favour of the completion of present tasks with envisaged bigger future benefits. In delay of gratification experiments, participants could be given "repetition-choice situations" tasks. In these tasks, experimentally imposed conditions designed to foster competition and ego-involvement are employed (Bialer, 1961; Plichta et al., 2009). Individuals are asked to choose between repeating a previously completed (pleasant or successful) task and a previously interrupted (unpleasant or failed) task. In this situation it is argued by researchers on delay of gratification that the conceptually mature individual, sensitive to the competitive aspect of the situation and the feeling of being put to the test, should construe completion of a task as success and interruption as failure (Bialer, 1961; Park, Crocker, & Kiefer, 2007; Thomas, 2007). In an effort to mitigate the feeling of threat-to-self engendered by having failed to meet the test, the individual could be expected to choose the interrupted task for repetition (Berns, Laibson, & Loewenstein, 2007; Bialer, 1961). In contrast, the conceptually immature youth would be expected to categorise the situation in terms of pleasantness and unpleasantness and to repeat the completed task as a return to a previously pleasant situation (Bialer, 1961; Nowlis, Mandel, & McCabe, 2004). It was observed by researchers of deferment of gratification that in repetition-choice situations among the youth, there is a motivational system under which behaviour is directed in response to cues which are essentially hedonistic (Bialer, 1961; Heatherton & Baumeister, 1996). With the development of conceptual maturity and internal locus of control, a second motivational system arises (Bialer, 1961; Barber, Munz, Bagnall, & Grawitch, 2009). At this stage, the youth learns to direct behaviour in response to cues associated with personal success or failure (Bialer, 1961; Muraven, Baumeister, & Tice, 1999). While both motivational systems operate in the more mature youth, situations exist in which systems may be in conflict (Bialer, 1961; Seeling & Rosof, 2001). One such situation would be that in which the attainment of a highly valued reward can

be achieved only through the endurance of biological or physiological unpleasantness and tension (Bialer, 1961; Loewenstein, Read, & Baumeister, 2003). Another situation might be one in which an event which is pleasant would be associated with failure by the more mature youth (Bialer, 1961; Poynor & Haws, 2009). The youth's ability to delay gratification would be regarded as evidence of willingness to defer gratification in pursuit of set goals.

In demonstration of delay of gratification, researchers have given children, young adults, and old people the opportunity to choose between an immediate small reward and a future greater reward. This obviously causes tension in the individual about what to choose (Roets & Van Hiel, 2008; Van Harreveld, Rutjens, Rotteveel, Nordgren, & Van der Pligt, 2009). Those who cannot resist the tension any further would not be able to continue delaying the gratification. They could respond favourably to the hedonistic cues present in the environment (Bernthal, Crockett, & Rose, 2005). They choose immediate pleasure over delayed greater pleasure (Bialer, 1961; Semple, Zians, Grant, & Patterson, 2006). The immature youth would not consider their choice of a reward of less value as failure but the mature youth would view the immediately available small reward as failure. The mature youth would value rewards that are associated with enduring unpleasantness and challenge. The mature young adult would be aware that their own efforts can forestall failure and that they are able to maintain the tension generated by the postponement of immediate need-satisfaction (Baumeister & Alquist, 2009; Etticott & Ogloff, 2006; Jahromi & Stifter, 2008). They could therefore choose to delay gratification (Bialer, 1961; Oren, 2008).

In terms of delay of gratification research, individuals are expected to show developmental changes that reflect a shift in locus of control through experience or training. Locus of control should gradually move from external locus of control to internal locus of control with age, training and experience and it is expected to stabilise in adulthood (Bialer, 1961; Scales, Benson, & Mannes, 2006). As individuals mature their response to pure hedonistic cues should become less excited and shift towards sensitivity cues associated with success and failure (Bialer, 1961; Lewis & Carpendale, 2009). Maturity in individuals is demonstrated when they shift from the tendency of choosing immediate gratification to a willingness to delay gratification (Bialer, 1961; McInerney, 2004; Sumter, Bokhorst, & Westenberg, 2008).

The ability to delay gratification among the youth is associated with health control. The ability to defer gratification is a concept that is widely believed to affect individuals with an external locus of control (Bembenutty & Karabenicks, 2004; Phares, 1976; Ray & Najman, 1986). Individuals who live for the present are also found to engage in high-risk sexual practices (Benotsch, Kalichman, & Kelly, 1999; Crepaz & Marks, 2002). Willingness to delay gratification is discussed in the context of client

or consumer behaviour and investment decisions that may affect short-term and long-term business plans (Fuchs, 2004; Deaton, 2002). Individuals and groups that have tendencies to satisfy present bodily needs at the cost of future time planning are reported to experience: less medical and business insurance cover, less investment in education, illness, unwanted pregnancies, crime, high mortality rate, substance abuse and violence (Deaton, 2002; Levy, Micco, Putt, & Armstrong, 2006). The locus of control-based model could assess for aspects of willingness to delay gratification in love relationships and the need to delay sex and marriage among the youth until it is safe and appropriate to do so.

Health risk reduction training programmes among the youth could seek to modify willingness to delay gratification and external locus of control towards internal locus of control (Attarri, Sartippour, Amini, & Haghighi, 2006; Elfstrom & Kreuter, 2006). Young people are assumed to mature with age in social learning theory, so it could be essential to emphasise that health control and HIV and AIDS prevention is a sign of maturity (Margolis, MacGowan, Grinstead, Sosman, Kashif, & Flanigan, 2006). The behaviour change training programmes could emphasise the conceptualisation of successful delay of gratification in HIV prevention as indicative of success and the failure to delay gratification as evidence of failure. Ego-involvement in HIV and AIDS risk reduction could be linked to personal pride in avoiding the temptation of failing to delay gratification among the youth (Levy et al., 2006; Mattson, 2005). The ability to resolve conflict within the individual about the choice between immediately available tempting risk sexual practices and delayed safer sexual practices could be a sign of inner-directedness, maturity and willingness to delay gratification by the individual.

3.8.6 Deferment of gratification and task persistence

In delay of gratification studies, an individual's generalised expectancy about whether or not they have power over what happens to them in their attempt to meet their psychological needs guides their behaviour in need gratification (Baumeister, Shmueli, & Muraven, 2007; Mischel, Zeiss & Zeiss, 1974). The individual's perception that positive or negative reinforcement in need gratification could be controlled by the individual determines task persistence in pursuit of set goals. If an individual believes that positive or negative events are unrelated to their behaviour in certain situations or that events are beyond their control, task persistence could be weakened (Mischel et al., 1974; Nielson & Jensen, 2004). The experience of success or working for delayed reinforcement requires effort, competence, and perception of control over tasks (Apkarian et al., 2004; Lefcourt, 1972).

An individual's expectancy regarding control over outcomes could affect their on-task behaviours. Individuals who perceive outcomes as contingent upon their performance tend to keep working on a

task until they get results (Ang & Lim, 2007). Individuals with an internal locus of control tend to work harder or longer on given tasks than individuals with an external locus of control (Ang & Lim, 2007; Mischel et al., 1974; Phares, 1976). Individuals with an internal locus of control could perceive the presenting psychological situation as instrumental in the attainment of larger rewards (Foll, Rasclé, & Higgins, 2006). They work on the present environment to satisfy their long-term needs.

Task persistence is also expressed in achievement behaviour. Individuals with an internal locus of control take longer decision time when dealing with challenging work that requires the use of skills and cognition (Rotter & Mulry, 1965; Sheppard & Crocker, 2008). Time spent on a task by an individual reflects the value or importance of the reward (Lodewyk, Winnie, & Jamieson-Noel, 2009; Srull & Karabenick, 1975). Individuals with an internal locus of control are more likely to see the congruency between effort and outcomes than individuals with an external locus of control in task performance. Individuals with an internal locus of control tend to spend more time working on ``skill`` tasks than ``chance`` tasks because they place higher value on outcomes determined by their own actions than on events beyond their control (Jones, 2008; Srull & Karabenick, 1975). On the contrary, individuals with an external locus of control tend to spend more time dealing with chance tasks and activities that require luck to complete successfully (Srull & Karabenick, 1975; Wijnbenga & Van Witteloostuijn, 2007). In this context, individuals with an external locus of control tend to prefer smaller rewards to satisfy their immediate gratification as they do not take time to plan for the size of the next reward.

In HIV and AIDS training programmes, health promotion strategies could focus on task persistence in reducing health risks. Individuals should be encouraged to keep working on improving their sexual behaviours and relationships. Behavioural consistency and persistence in social situations such as negotiation for safer sex, condom use, and maintenance of sober habits before sex could help partners reduce HIV and AIDS risks (Broadus & Bryan, 2008; Yotebieng, Turner, Hoke, Van Damme, Rasolofomanana, & Behets, 2009).

3.8.7 Deferment of gratification, social class, and ethnicity

In locus of control research, individuals from disadvantaged backgrounds generally show behaviours that are deficient in postponement of immediate gratification (Fisher, Eke, Cance, Hawkins, & Lam, 2008; Lefcourt, 1976; Phares, 1976; Supplee, Skuban, Shaw, & Prout, 2009). Among environmentally disadvantaged individuals attending vocational rehabilitation and individuals receiving welfare grants, it was established that poor and less educated individuals were generally unwilling to delay gratification (Evans, Gonnella, Marcynyszyn, Gentile, & Salpekar, 2005; Lefcourt, 1972). The better-

educated, more achievement-oriented and less deprived racial groups showed internal in locus of control orientation and they were more willing to defer gratification (Lefcourt, 1972; Phares, 1976; Vallejo & Lee, 2009).

Individuals from disadvantaged backgrounds are less able to depend upon their home environments and would be less willing to wait for a promised larger reward than would individuals from privileged backgrounds (Liu & Ali, 2005; Walls & Smith, 1970). For example, individuals from resource poor rural areas were not able to delay gratification (Kirby, Winston, & Santiesteban, 2005; Mischel, 1961). An individual's socio-economic status could influence their delay of gratification behaviours (Christopher, Zabel, Jones, & Marek, 2008; Walls & Smith, 1970). Learning to defer gratification is associated with middle class hegemony (Reyes-Garcia et al., 2007; Ray & Najman, 1986). The need for instant gratification is viewed as a sign of immaturity and is believed to account for the limited upward mobility of the working class (Funder, Block, & Block, 1983; Kwak, Zinkhan, Delorme, & Larsen, 2006; Ray & Najman, 1986).

Some ethnic groups have cultures which tend to promote impulsivity, indulgence, and members of the group generally settle for relatively little rewards as long as the rewards can be obtained right away (Mischel, 1961; Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007). The members of the group do not generally work or wait for larger reinforcements in the future but utilise immediately available rewards even if they might be relatively trivial in value (Mischel, 1961). This behaviour is common in developing countries where there is generally a communal ownership of goods and services among resource poor communities. Such societies tend to be collectivistic in their approach to gratification and sharing of goods and services for the common good is highly valued (Mpofu, 1994). In such situations, individuals tend to satisfy immediate needs otherwise any further delays could result in the expected reward being taken away by others in competition or communal ownership of goods and services (Phatlane, 2003). In individualistic societies or developed societies, individuals tend to strive for long-term term goals (Saez-Marti & Zilibotti, 2008). They are more willing and able to postpone immediate gains and gratifications for the sake of larger rewards and returns in the future (Lee & Kacen, 2008; Mischel, 1961). Even among the poor classes, they try to maintain savings for the future of their children in developed countries. It is argued that there could be a ``national character`` with respect to delay of gratification (Mischel, 1961; Woehr, Arciniega, & Lim, 2007). Some cultures, regional groupings, and countries promote delay of gratification while others promote immediate gratification at a national level (Crone, Hullens, Van der Plas, Kijkuit, & Zelazo, 2008; Mischel, 1961). The behaviour of some communities in developing countries could be guided largely by the ``pleasure principle`` while that of developed countries could be described as being guided by the ``reality principle`` of psychoanalysis (Chen, Ng, & Rao, 2005; Mischel, 1958).

Individuals from low socio-economic backgrounds are more "immediate minded", impulsive, and less likely to trust society and its agents for the possibility of future rewards (Douvan & Adelson, 1958; Iwasaki & Liu, 2009; Zytoskee, Strickland, & Watson, 1971). In this context, White youth from disadvantaged lower-class backgrounds were less likely to delay gratification than White youth from middle class backgrounds (Otto, Schots, Westerman, & Webley, 2006; Straus, 1962; Zytoskee, Strickland, & Watson, 1971). It is also argued in social learning theory that if social conditions are adverse and society is male-dominated and violent, girls and women are more likely than boys and men to be external in locus of control (De Wall, Baumeister, Stillman, & Gailliot, 2005; Females in difficult circumstances, despite their race, would show less tendencies of delaying gratification than men (Shobe & Dienemann, 2007; Zytoskee, Strickland, & Watson, 1971). They might be satisfied with small rewards they might get as long as the rewards can be satisfying in terms of looking after their children. Delay of gratification is weakened in adverse situations such as family neglect, intimate partner violence, wars, or family abandonment by the husband or partner (Dunkle, Jewkes, Brown, Gray, McIntyre, & Harlow, 2004). The adverse conditions could also affect men, but generally, to a lesser extent in South Africa (Abrahams, Jewkes, Martin, Mathews, Vetten, & Lombard, 2009).

In the US, minority groups are reported to show behaviours relating to unwillingness to delay gratification (Lefcourt, 1972; Wills et al., 2007). It is argued that minority groups tend to report lower delay of gratification and obtain low academic grades in university (Bembenutty, 2007; Bembenutty & Karabenick, 1998). In studies about delay of gratification, it was noted that the majority of African-Americans preferred immediate rewards to delayed larger future rewards (Aspy, Vesely, Oman, Rodine, Marshall, & McLeroy, 2007; Lefcourt, 1972; Strickland, 1972). The African-Americans were found to be more external in locus of control and more likely to choose immediate reinforcements than were the Whites (Lefcourt, 1972; O'Hea, Bodenlos, Moon, Grothe, & Brantley, 2009). Black students showed lack of trust when the individual or experimenter promising them future rewards was White due previous broken race-related promises (Halbert, Armstrong, Gandy, & Shaker, 2006; Strickland, 1972). The lack of trust for White authority figures was attributed to a history of cultural oppression of Blacks (Halbert et al., 2006; Smith, Davis, & Krakauer, 2007; Strickland, 1972). Most of the African-American students who participated in delay of gratification research came from poor inner-city locations as compared to White students who came from a relatively better socio-economic class (Branson, Davis, & Butler, 2007; Strickland, 1972). Poverty, racism, and lack of political control was associated with non-delay of gratification among African-Americans (Strickland, 1972).

3.8.8 Deferment of gratification and future orientation

Individuals are expected to have a sense of time and they should be able to plan what they intend to achieve at specific stages of their lives. Temporal experience is linked to an individual's personality and future orientation (Husman & Shell, 2008; Shybut, 1968). Some individuals have clear time perspectives while others have distorted ideas about their future (De Volder & Lens, 1982; Howell & Buro, 2009).

It is healthy for an individual to be aware of their past, present, and future (Liu & Aaker, 2007; Shybut, 1968). Individuals with psychological disorders have a shorter future time perspective as compared to healthy individuals (Mannetti, Leder, Insalata, Pierro, Higgins, & Kruglanski, 2009; Shybut, 1968). For example, individuals with conduct disorder, depression, and anxiety have marked distortions about their future (Platt & Eisenman, 1968; Shybut, 1968; Wong et al., 2006). Individuals with distorted future time perspectives are more likely to be external in locus of control than well adjusted individuals (Mitchell et al., 2005; Rubio et al., 2008; Shybut, 1968).

It is argued in social learning theory that internally oriented individuals are more likely to be future-oriented and capable of conceptualising segments of time (Attance & Jackson, 2009; Platt & Eisenman, 1968). Individuals with an internal locus of control may perceive the passage of time as meaningful and can plan events according to time perspectives. They have a general concern for future events (Gol & Oner, 2009; Platt & Eisenman, 1968). In studies on time perspective among university students, it was established that high academic achievers were predominantly future-oriented and that highly optimistic students were also future-oriented (Kauffman & Husman, 2004; Platt & Eisenman, 1968). Students with strong plans for the future were able to control their impulses (Platt & Eisenman, 1968). In contrast, delinquent adolescents were less future-oriented and external in locus of control (Platt & Eisenman, 1968).

In delay of gratification research, it is argued that a shortened time perspective is associated with external locus of control and unwillingness to delay gratification (Liu & Aaker, 2007; Platt & Eisenman, 1968). If an individual believes that the consequences of their behaviour are under the control of outside forces they could perceive themselves as less capable of conceptualising segments of personal and impersonal time, whether in the past or in the future (Platt & Eisenman, 1968). The individual with an external locus of control could perceive their future as being populated with fewer events than does an individual with an internal locus of control (Howell, 2009; Platt & Eisenman, 1968). Individuals with an external locus of control may not be able to make realistic estimates of future events and as a result they may not delay gratification (Mischel & Metzner, 1962; Simeon,

Hwu, & Knutelska, 2007). Individuals from disadvantaged backgrounds have a tendency of not delaying gratification and have a present-time orientation whereas individuals from the middle class or privileged backgrounds may show a generalised tendency of showing future-time orientation (Crone et al., 2008; Walls & Smith, 1970).

Distorted future orientation is associated with depression and suicide ideation (Gannon & Polaschek, 2006; Melges, Weisz, 1971; Thompson, Crosby, Wonderlich, Mitchell, Redlin, Demuth, Smyth, & Haseltine, 2003). Individuals who view their future as unpleasant, hopeless, and uncertain could have few plans for the future (Connor & Rueter, 2009; Melges & Weisz, 1971). If an individual has a negative attitude towards the future, they are more likely to engage in self-damaging behaviours (Benotsch et al., 1999; Crepaz & Marks, 2002; Twenge, 2004). The individual may feel that they cannot on their own alter or extricate themselves from present difficulties (Connor & Rueter, 2009; Melges & Weisz, 1971). In this regard, helplessness, hopelessness, and a narrow view of the future could degenerate into suicidal behaviours (Arehart-Treichel, 2009; Melges & Weisz, 1971). The individual with suicide ideation may not delay gratification and they could be at risk of health risks. Among university students, self-damaging and suicidal behaviours could include substance abuse, heavy drinking, violence, sexual promiscuity, and low academic performance (Moore & Foreman-Peck, 2009; Jessor, Carman, & Grossman, 1968).

3.8.9 Deferment of gratification and health

Researchers on deferment of gratification and health argue that individuals who have difficulties postponing immediate gratification usually report health problems relating to self-destructive behaviours, aggression, excessive consumption of food, beverages or alcoholic substances, and sex-related problems (Chao, Szrek, Pereira, & Pauly, 2009; Straus, 1962). Individuals who experience problems with regard to self-regulation in deferment of gratification may have risky health habits that cause ill health (Evenden & Ryan, 1996; Williams & Thayer, 2009). Among humans and animals, inability to delay gratification can lead to impulsive behaviour that could be characterised by aggression or violent behaviour towards getting immediate gratification (Evenden & Ryan, 1996; Gibson, Morris, & Beaver, 2009). Excessive consumption can result in obesity and diseases of the heart, liver, or kidneys (Guerrieri, Nederkoorn, & Jansen, 2008; Seeyave et al., 2009; Whitaker, 2009). Increased alcohol and drug intake could result in addictive disorders such as pathological gambling, excessive smoking and drug and substance abuse (Hariri, Brown, Williamson, Flory, de Wit, & Manuck, 2006; Urassa, Moshiro, Chalamilla, Mhalu, & Sandstrom, 2009). Substance abuse is a risk factor in HIV and AIDS risk reduction (Griffin, Botvin, & Nichols, 2006; Meade, Graff, Griffin, & Weiss, 2008). Failure by the individual to get immediate rewards could result in frustration and

anger that could cause peptic ulcers, hypertension, or generalised anxiety disorders (Corral-Verdugo, Fraijo-Sing, & Pinheiro, 2006; Francis, & Armstrong, 2007; Rothmann & Van Rensburg, 2002; Salley, 2008; Szmigin, Griffin, Mistral, Bengry-Howell, Weale & Hackey, 2007).

Some of the university students who have difficulties delaying gratification are reported to be sensation-seeking, materialistic and most of them could show symptoms associated with debt-related stress (Myers, Doran, Trinidad, Klonoff, & Wall, 2009; Winters, Fahnhorst, & Baumel, 2009). They are more likely to abuse credit cards and to have an uncaring attitude towards debt thus allowing themselves to live beyond their means (Norvilitis, Merwin, Osberg, Roehling, Young, & Kamas, 2006). Indulgence is associated with external locus of control and unwillingness to delay gratification (Lefcourt, 1976; Myrseth, Fishbach, & Trope, 2009; Phares, 1976). It is contended in delay of gratification research that individuals with a healthy lifestyle tend to place less importance on the value of present excitement and they have a greater tendency to plan ahead (Divine & Lepisto, 2005).

3.8. 10 Deferment of gratification health risk reduction training

Early researchers on locus of control have demonstrated that delay of gratification can be improved through training (Bialer, 1961; Lefcourt, Phares, 1976, Rotter, 1976). Health trainers using locus of control concepts focus on the choice between immediate rewards and delayed rewards (Mahrer, 1956; McClure, Laibson, Loewenstein, & Cohen, 2004; Myerson & Green, 1995). Delay of gratification training has proved effective in reducing hurried health decisions and it has succeeded in developing expectancy for larger health rewards in future among patients and participants (Leung, 2008; Phares, 1976; Vansteenkiste et al., 2005; Williams et al., 2008). Health expectancies can be learned, modified, or extinguished through training (Declercq et al., 2008; Gerber & Hendel, 2006; Hogarth et al., 2006; Phares, 1964). Role plays, focus group discussions, and games are used in locus of control-based deferment of gratification training (Lee et al., 2008; Lefcourt, 1976; Phares, 1976).

The concept of delay of gratification was widely researched on children and adolescents in the development of the social learning theory of personality. As more interest grew in the concept, researchers broadened their scope to include the social, political, economic, educational, and health settings. The researchers later sought to understand patterns of delay of gratification behaviours in business management and consumer behaviour.

Delay of gratification among the youth is generally believed to be low and this is expected in social learning theory. However, some societies train their youth to have a futuristic orientation. Delay of gratification is a learned characteristic of human behaviour, it stabilises with maturity. Infants are expected to show less delay of gratification tendencies than adults. Among university students, it

could be expected that some of them could still be testing social boundaries of what the adult world approves and disapproves. Delay of gratification is reported to be low among poor communities and the working class in general. In terms of social learning theory, deprivation of basic biological needs in childhood and deprivation of goods and services for longer periods in adulthood could result in less delay of gratification.

Delay of gratification is associated with the ability to resist temptation. In social learning theory, an individual's ability to delay gratification could be related to their locus of control. An individual's ability to defer immediate gratification could be affected by their expectancy, problem solving skills, underlying psychological distress, maturity, age, culture, and their future orientation. Training programmes on delay of gratification could help participants focus on task persistence for larger future goals, the development of long-term plans and the need to delay the satisfaction of immediate physiological needs.

Health training programmes on delay of gratification could target areas where self-regulation is inadequate. In HIV and AIDS programmes, emphasis could be placed on sexual promiscuity, non-condom use, unplanned sex, unwanted pregnancies, abortion, substance abuse, and the need to maintain protective behaviours in sexual relations. All forms of tempting sexual situations could be explained in terms of deferment of gratification techniques.

3.9 Personal values and expectancies

3.9.1 Definitions of personal values and expectancies

In locus of control research, personal values and expectancies are closely linked to locus of control and personal health (Lefcourt, 1976; Phares, 1976). Personal values are associated with personal causation, that is, the individual making things happen as wished (Lefcourt, 1976; Le Roux, Schmidt, & Schepers, 2008). It is argued in locus of control research that when an individual initiates intentional behaviour, they experience themselves as having originated the intention and the behaviour (deCharms, 1972; Erwee, 1986; Kahn, Aulakh, & Bosworth, 2009). The individual in this case is the locus of causality of the behaviour and the individual is said to be intrinsically motivated (deCharms, 1972; Eyal, Sagristano, Trope, Liberman, & Chaiken, 2009; Haugli, Steen, Laerum, Finset, & Nygaard, 2000). Since the individual is the originator, they are referred to as the "origin" in locus of control research (Eyal et al., 2009; Nygaard & Kunszenti, 1999; deCharms, 1972). In contrast, if something external to the individual impels them to behave in a certain way, the individual experiences themselves as an instrument of the outside source and in this case the outside source is the locus of causality (deCharms, 1972; Elliott, 1997). The individual would be described as extrinsically

motivated (deCharms, 1972; Rummel & Feinberg, 1990). Since the individual is impelled to behave in a certain way due to external influences, the individual is referred to as a ``pawn`` in locus of control research (deCharms, 1972; LaBrie, Kenny, Lac, Garcia, & Ferraiolo, 2009; Nygaard & Kunszenti, 1999). This line of thought promotes personal causation in behaviour change programmes and health promotion. An individual's values should be centred on ``personal causation`` in order to obtain desired rewards (Phares, 1976; Haugli et al., 2000). In social learning theory, expectancy is defined as the subjectively held probability that a certain reinforcement or goal may be obtained by means of a given behaviour (Chance, 1959; Rotter, 1954). An individual's expectancy for success in a specific situation is determined by the individual's specific experiences in that situation and by related experiences from situations regarded as similar or familiar (Fischer & Smith, 2008; Phares, 1976; Rotter, 1954). In this context, previous experience is used to judge and resolve current problems.

3.9.2 Achievement and success as value orientations

It is argued in social learning research that an individual's values tend to influence their achievements and successes (Murphy & Topel, 2006; Rotter, 1954; Rotter et al. 1972). The personal values would determine the health values the individual would pursue. In health settings, the degree to which an individual values their health would approximate to the degree to which they engage in health preventive behaviours (Tang, Ash, Bates, Overhage, & Sands, 2006).

Society promotes the development of personal and health values in its members. What is considered as a health success in one community may not be regarded as a health achievement in another community (Sanchez-Castillo et al., 2005). Health values could vary according to society (Mansyur, Amick, Harrist, Franzini, & Roberts, 2009). Society rewards behaviour that is considered valuable by its members (Steffen, Larson, & Butler, 2006). They could value military prowess, ritual knowledge, asceticism, and any other social institutions (Mansyur et al., 2009). In the US, individual values are centred on personal health, individualism, protestant work ethic, and entrepreneurship (Eckersley, 2005; Pearson & Rawlins, 2005). In South Africa, there could be a generalised tendency towards the upholding of ``ubuntu`` or collectivistic values among the majority African populations (Outwater, Abrahams, & Campbell, 2005; Schneider, Hlope, & Van Rensburg, 2008). Group values tend to supersede individual values and community success is deemed to be better than individual achievements. It is considered to be desirable behaviour in almost all societies of the world that success is linked to moral standards of behaviour (Outwater et al., 2005; Schneider et al., 2008).

The values that society upholds tend to affect health behaviour (Coast, 2004). In social learning theory, health values could be affected by attributions of success and failure, personal ambitions,

aspirations for success, fear of losing valuable things in life due to poor health, and fear of contracting deadly diseases (Brouwer, Musselman, & Culham, 2004; Eitner, Wichmann, Paulsen, & Holst, 2006; Lefcourt, 1976). The health values could guide the individual in achieving health standards. In social learning theory, health values could raise an individual's aspirations to succeed and the values could guide the individual's choices, behaviours, goals, dreams, or ambitions in life (Allegrante et al., 2009; Rotter, 1954).

3.9.3 Expectancies and health behaviour

Individuals with an external locus of control and low expectancies could be vulnerable to diseases (Hartman, Shim, Barber, & O'Brien, 2006; Lefcourt, 1976; Sherman, Nelson, & Steele, 2000). An individual's personal values and expectancies could shape their health values (Bandura, 2006; Chance, 1959). The individual's expectations could be that certain behaviours could lead to health reinforcement (Kushiyama, Shimazaki, Murakami, & Yamashita, 2009; Rotter, 1966). If the individual fails to get reinforcement in certain situations, the individual's expectations for getting reinforcements in similar situations could be altered or decreased (Au, Watkins, Hattie, & Alexander, 2009; Peleg, Barak, Harrel, Rochberg, & Hoofien, 2009; Rotter, 1954). The generalisation of expectancies is based on functional relatedness or need relatedness (Brausch & Gutierrez, 2009; Lam, Morrison, & Smeesters, 2009; Chance, 1959). In order to predict the occurrence of a particular health behaviour in a given situation, it is necessary to have information about the individual's expectancy that the particular behaviour could lead to a given health outcome or reinforcement and how much of the given health outcome, or reinforcement or goal is valued by the individual relative to other health outcomes or goals available to the individual (Chance, 1959; Yang, Kleinman, Link, Phelan, Lee, & Good, 2007).

An individual's expectancy could also change with new experiences or training (Chance, 1959; Litt, Kadden, Kabela-Cormier, & Petry, 2008; Rotter, 1966). In HIV and AIDS risk reduction programmes, it could be possible to establish the general expectancies of participants before training as a form of needs analysis (Kalichman, Simbayi, Vermaak, Cain, & Jooste, 2007). When the expectancies are established, the training could focus on building individual and group capacity to promote health-preventive behaviours and to demonstrate how expectancies are associated with positive health outcomes (Jerome, Halkitis, & Siconolfi, 2009).

3.9.4 Level of aspiration and health promotion

An individual's level of aspiration refers to hopes and ambitions about personal health (Catford, 1990; Lefcourt, 1976; Lewin, Dembo, Festinger, & Sears, 2007). An individual's aspiration also

encompasses expectations, effect of success on an individual's hopes, effect of failure on the individual's ambitions or goals and the concept also looks at the individual's defences against personal failure (Iyer, & Miller, 2008; Lefcourt, 1976; Lefcourt, 1982; Ohtsubo & Miller, 2008; Rotter, 1982). It is the level of future performance in a familiar task, which an individual knowing their level of past performance in that task, explicitly undertakes to reach (Smith, Littlejohns, Hawe, & Sutherland, 2008; Rotter, 1941). Individuals could differ on their levels of aspiration as indicative of personality difference (Rotter, 1982; Smith et al., 2008).

In the assessment of an individual's level of aspiration, individuals are asked how well they will do on the task. They could estimate their performance before the task and after success or failure on the task. They can repeat the task if they still hope that they will succeed. In doing so, the assessor is able to determine the effect of success or failure on an individual's set goals (Komduur, Korthals, & Molder, 2009; Rotter, 1982). Other methods, such as the use of questionnaires, are also employed to measure an individual's level of aspiration (Lefcourt, 1976; Macduff, 2006).

Individuals who expected to get high scores on future success were found to obtain high scores on aspiration tests (Iyer & Miller, 2008; Rotter, 1941, 1982). Researchers on level of aspiration argue that for the individual to succeed in what they do they need to keep the aspiration level as high as possible regardless of level of performance because the high aspiration helps in driving aspiration level above performance (Baum, Rowley, Shipilov, & Chaung, 2005; Rotter, 1941, 1982). Individuals need to make the level of aspiration approximate the level of future performance as closely as possible, keeping in touch with reality, so as to keep the level of aspiration at the level of performance (Lee & Venkataraman, 2006; Rotter, 1941, 1982). There is need to avoid failure in achieving health targets by individuals. Failure is associated with the lowering of the individual's level of aspiration (Regev, Shtub, & Ben-Haim, 2006). High aspiration levels are associated with inner-driven behaviours to accomplish set goals. High levels of inner-directed behaviour are associated with high ego levels in individuals (Rotter, 1941; Rotter, 1966, 1982; Trento et al., 2006). An individual's expressed goals or aspiration level tends to regress towards the mean of the performance of the group the individual identifies with (Rotter, 1941, 1982; Trento et al., 2006). The level of aspiration of individuals with a history of failure is generally low (Marmot, 2007; Rotter, 1941, 1982).

In health promotion, it could be argued that an individual's level of aspiration could be a driving force in the promotion of safe health behaviours to reduce HIV infection (Burker, Evon, Galank, & Egan, 2005; Hall & Jones, 2007; Jones & Newman, 2009; Smith, Catellier, Conlisk, & Upchurch, 2006). Individuals could aim to behave in ways that prevent HIV and AIDS as a health target (Apostolopoulos, Sonmez, Kronenfeld, Castillo, McLendon, & Smith, 2006; Doyal, Anderson, &

Paparini, 2009). Communities could be trained in methods of promoting high aspiration in HIV and AIDS prevention and risk reduction (Marmot, Fiel, Bell, Houweling, & Taylor, 2008; Smith et al., 2006).

3.9.5 Personal values and expectancies health risk reduction training

Research on locus of control training and health risk reduction regarding personal values and expectancies has shown that health risks associated with low personal values and expectancies could be reduced or prevented through training (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Training participants and patients in boosting their personal values and expectancies for better health was found to be effective in health recovery and disease risk reduction (Laffrey & Insenberg, 2003; Le Roux et al., 2008; Phares, 1976).

Participants are exposed to skills of personal health causation, initiation of intentional health behaviour, and origination of intentional health behaviour (deCharms, 1972; Erwee, 1986; Kahn et al., 2009; Yi et al., 2009). Previous studies indicate that participants with low health values and low expectancies could be trained using locus of control techniques to reduce health risks such as depression, or suicide ideation (Lefcourt, 1976; Murphy & Topel, 2006; Rudy, Murphy, Harris, Muenz, & Ellen, 2009). High personal values and expectancies training is associated with reduced health risks among participants. Locus of control training was found to be effective in reducing health risks among participants with an external locus of control (Hartman et al., 2006; Lefcourt, 1976; Phares, 1976; Sherman et al., 2000). Locus of control training could improve personal values, expectancies, and it can reduce volitional exposure to health risks (Bandura, 2005; Chance, 1959). The training focuses on the individual's expectancies that certain personal values and behaviours could lead to desired health reinforcement (Bandura, 2005; Bandura, 2007; Kushiya et al., 2009). Locus of control training on personal values and expectancies could focus on the role of reinforcement in the sustenance of risk health values and sexual practices (Au et al., 2009; Hernando, del Romero, Garcia, Rodriguez, del Amo, & Castilla, 2009; Li et al., 2009; Peleg et al., 2009; Phares, 1966; Rotter, 1954). The training programmes could help participants develop personal aspirations and life ambitions in the context of HIV and AIDS in South Africa. Locus of control training on values, aspirations, ambitions, and expectancies for better health could reduce HIV and AIDS risk among participants or patients (Burker et al., 2005; Hall & Jones, 2007; Jones & Newman, 2009).

The prevention of health risks could be related to personal values and expectancies of health outcomes. It could be argued that if the individual has distorted personal health values and poor health outcome expectancies, that could be indicative of health risk. The individual might set low health

standards for themselves. The individual is expected to be the originator of behaviour change in health promotion and HIV and AIDS risk reduction. If the individual regards themselves as passive and acting as a pawn in disease prevention, the probability of contracting diseases could be high. It could be argued that among the youth in South Africa, some youths could perceive themselves as originators in HIV and AIDS risk reduction while some might view themselves as pawns to an insurmountable and unpreventable health pandemic.

Personal values and expectancies in health promotion and risk reduction could be associated with the desire to stay healthy. Individuals who value health protect themselves from getting ill. They cultivate situations and relationships that promote good health. Individuals with an internal locus of control are more likely than individuals with an external locus of control to develop values, expectancies and dreams that incorporate HIV and AIDS risk. They could regard HIV and AIDS as a challenge that can scatter and disorient an individual's hopes about a bright future. Individuals with high personal values could be positive about the future and they could maintain safer sexual practices.

It could be argued in social learning theory that some individuals could have lifestyles that are devoid of personal ambition or aspiration. In social learning theory, healthy behaviours are associated with the development of dreams about the future and having values that the individual seeks to protect. The individual could have both short and long-term ambitions and would show health behaviours that are directed at fulfilling those aspirations. In situations where the individual may have low aspiration levels, diminished ability to protect ambitions and inaction towards the attainment of health standards, it could be argued in terms of social learning theory that the individual could be at risk of contracting diseases. In terms of locus of control research, it could be argued that a lack of interest in an individual's own life may be a risk factor in disease prevention because it is expected that the individual would take the initiative to protect themselves against diseases. Among university students, it could be expected that most of them could have high values, expectancies, and aspirations about their future careers and would engage in health risk reduction behaviours to protect their life ambitions.

3.10 Social alienation

3.10.1 Definition of social alienation

Social alienation is a concept that was described by Rotter (1966) as related to locus of control. In general, the term could be used to describe apathy, authoritarianism, psychosis, obsession, lack of attachment, non-conformity, cynicism, hoboism, political apathy, personalisation in politics, prejudice, privatisation, regression, and suicide (Dean, 1961, 1969; Krause & Broderick, 2006; Rotter, 1966). The alienated individual is detached from the world of nature and their own nature (Harrow,

Hansford, & Astrachan-Fletcher, 2009; Nettler, 1957). The individual could be alienated when their interests go against majority interests (Harrow et al., 2009; Nettler, 1957). Even though alienation is a concept with origins in sociological theories and other disciplines, social learning theorists found it useful in the development of the locus of control construct (Rotter, 1966; Seeman, 1959). It is argued in social learning theory that the alienated individual feels unable to control their own destiny (Legerski, Cornwall, & O'Neil, 2006; Rotter, 1966). They could feel they are a small cog in a big machine and at the mercy of forces too strong or too vague to control (Kaur & Upmanyu, 2007; Rotter, 1966). An alienated individual is affected in terms of their social class and ethnic group status (Battle & Rotter, 1963; Chak & Leung, 2004). The individual could hold the expectation that their own behaviour cannot determine the outcome they desire (Battle & Rotter, 1963; O'hea, Grothe, Bodenlos, Boudreaux, White, & Brantley, 2005). An individual who is alienated is more likely to be external in locus of control and to show health risks (Gore & Rotter, 1963; Hoge, Austin, & Pollack, 2007). They are generally not informed about their health condition and some alienated individuals may hardly look for health information or assistance (Butler, Fearon, Atkinson, & Parker, 2007; Caldwell & Smith, 2006; Gore & Rotter, 1963; Miller, Sorokin, Wang, Feetham, Choi, & Wilbur, 2006).

There are so many definitions of alienation. Some of the definitions are psychological, philosophical, sociological, political, and economic (Johnson, 1973; Seeman, 1959). Alienation could be described as the state in which individuals feel no sense of belonging to their community or nation (Muntaner, Benach, Haden, Gimeno, & Benavides, 2006; Nettler, 1957). For the purpose of this study, the social psychological aspects of the concept are discussed within the broad context of the social learning theory (Dean, 1961, 1969; Geis & Ross, 1998; Seeman, 1959). The psychological meaning of alienation presented in locus of control research is mainly derived from sociological theories. Rotter (1966) argued that, even though the social learning theory had concepts that were related to other disciplines, this resemblance or similarity only served to strengthen and enrich the social learning theory (Rotter, 1954, 1966, 1982). Alienation is characterised by powerlessness, meaninglessness, normlessness, isolation, and self-estrangement (Brooks, Hughes, & Brooks, 2008; Dean 1961; Ewertzon, Lutzen, Svensson, & Andershed, 2008; Rovai & Wighting, 2005; Seeman, 1959).

3.10.2 Social alienation and powerlessness

Alienation is associated with powerlessness (Navarro, 2007; Seeman, 1959). The alienated individual perceives the social environment as depriving them of their decision-making powers and the initiative to choose what is good for them (Seeman, 1959; Vickers & Parris, 2007). The alienated individual could have perceptions that they are separated from the effective control of their destiny (Dean, 1961;

Stanistreet, Watkins, Bromley, & Swami, 2008). The individual could become helpless in resolving their own problems (Dean, 1961, Navarro, 2007). The youth could have perceptions that their prerogative in sexual health matters is expropriated by authority figures or parents (Dean, 1961; Seeman, 1959). In some harsh social relationships, there could be alienation among individuals and the degradation of humanity into commodities (Ferguson & Lavalette, 2004; Seeman, 1959). Succinctly, Seeman (1959) referred to situations of alienation in which individuals were strangers to each other in the workplace and the degradation of human existence and human relations into impersonal entities characterised by wanton exploitation and abuse of humanity (Seeman, 1959; Vickers & Parris, 2007). In social situations, this could happen in instances where individuals fail to communicate effectively amongst themselves due to economic, social and political forces surrounding them (Ferguson & Lavalette, 2004; Navarro, 2007). The affected individuals could feel rejected and abused by powerful people in society (Stanistreet et al., 2008; Vickers & Parris, 2007). It is not uncommon for the youth in South Africa to complain that there is sexual coercion and exploitation of young men and women by rich ``sugar daddies`` and ``sugar mommies``. The affected individual could become frustrated and powerless because of the perceived lack of power to effect the desired change (Hagglund & Gerd, 2007). The discrepancy between actual power or control wielded by the individual and the degree of control or power the individual desires to have could be debilitating (Seeman, 1959; Seeman, Seeman, & Budros, 1988).

It is also pointed out in sociological research that powerlessness is an expectancy variable which is closely related to locus of control (Green, Lewis, Wang, Person, & Rivers, 2004; Seeman, 1959). Loss of power could result in loss of control perceptions. When an individual`s sense of personal control over the reinforcement situation is dependent upon external conditions such as chance, luck, or the manipulation of others, then it is argued that the individual is more likely to develop an external locus of control (Green et al., 2004; Seeman, 1959). The concept of powerlessness as an expectancy variable used in health, social, political, economic, and educational contexts could imply an individual`s sense of influence over events around them (Armstrong-Stassen & Schlosser, 2008; Shrestha, Shrestha, & Deepak, 2009; Seeman, 1959).

In a health context, individuals presenting with powerlessness tend to show symptoms of depression, stress, or dissociative disorders (Nosaka & Andrew, 2004; Sand, Strang, & Milberg, 2008). Individuals who feel helpless may not be able to effectively prevent illness (Baptiste-Roberts et al., 2007; Milberg, Strang, & Jakobson, 2004). Learned helplessness is associated with inaction, substance abuse, and disease proneness (Smith & Bohm, 2008). Powerlessness is a risk factor in health promotion (Iliffe, Karicha, Harari, Swift, Gillman, & Stuck, 2007). Perceptions of powerlessness could lead to abuse of alcohol and drugs which could result in alcohol-related diseases, drug-related

diseases and behavioural problems. The individual could be in trouble with the law (Davison, 2007; Smith & Bohm, 2008).

3.10.3 Social alienation and meaninglessness

Alienation is associated with perceptions of meaninglessness in individuals (DiPietro & Pizam, 2008; Seeman, 1959). Some individuals search for meaning in what they do while others find their life experiences empty and meaningless (O'Donnell, Schwab-Stone, & Ruchkin, 2006; Frankl, 1966; Frankl, 1972; Frankl, 1988). The individual may not perceive their existence and experiences as real but a monotonous lifestyle characterised by life and death (Goldsmith, Veum, & Darity, 1996; Lester, 1989; Watt, Watson, & Wilson, 2007). The individual could be alienated from understanding the events in which they are engaged (Seeman, 1959; Suarez-Mendoza & Zoghbi-Manrique-de-Lara, 2007). They could participate in life activities but without deriving meaning or satisfaction from such engagements. The individual could be unclear about what they believe in and goals they are expected to pursue (Yilmaz & Sarpkaya, 2009). The individual could conceive the world as meaningless when they cannot choose with confidence among alternatives available to them. They could see the world as prescribing and choosing life events and outcomes for them (Seeman, 1959; Suarez-Mendoza & Zoghbi-Manrique-de-Lara, 2007). The alienated individual could view their negative life experience as imposed on them by external forces and they are only used as a scapegoat by society to justify the wrongs perpetrated by powerful people in society against the weak (DiPietro & Pizam, 2008; Seeman, 1959). The reasoning of the alienated individual could be that the ordinary person does not know where HIV and AIDS came from or its true origins but they have to protect themselves from something they did not create or cause. The alienated individual could perceive their own behavioural choices and actions as not efficacious in bringing about positive outcomes in their lives (Bjornstad, 2006; Koelen & Lindstrom, 2005). They could have low expectancies about future outcomes (Seeman, 1959; Smith, Calam, & Bolton, 2009). Alienated individuals could have a weakened sense of their ability to control outcomes and a weakened sense to predict behavioural outcomes (Bjornstad, 2006; Seeman, 1959).

In health risk reduction and prevention training programmes, it could be encouraged that training facilitators identify individuals and groups experiencing meaninglessness in their lives and include them in the training programmes. Meaninglessness could a risk factor in disease risk reduction or prevention (Schwartzman, Serbin, Stack, Hodgins, & Ledingham, 2009; Smith et al., 2009). Individuals experiencing meaninglessness could also report health complaints such as dissociative disorders, stress, depression, or suicide ideation (Arokach, 2006; Skodlar, Tomori, & Parnas, 2008). Such individuals could be at risk of self-harm or they could engage in risky sexual practices (Koen, Cele, &

Libhaber, 2006; Kim et al., 2007; Petersen, Louw & Dumont, 2009). In HIV and AIDS risk reduction, such individuals may not use condoms consistently and they could engage in substance abuse and sexual promiscuity as they might not value existence as reality to be enjoyed or the need to protect themselves from diseases or other life-threatening situations (Myers, Sumner, Ullman, Loeb, Carmona, & Wyatt, 2009; Samuels, 2009).

3.10.4 Social alienation and normlessness

It is argued in social learning theory that individuals experiencing alienation could be at risk of developing normless behaviours (Pritchard, 1995; Seeman, 1959; Waisanen, 2008). Anomie or normlessness refers to a situation in which social norms and values regulating human conduct breakdown (Balachandran, Raakhee, & Sam, 2007; Seeman, 1959; Srole, 1956). Morality may no longer be viewed as effective in controlling human behaviour. Normlessness is characterised by a painful uneasiness or anxiety, a feeling of separation from group standards, and a feeling of pointlessness or that no certain goals exist (Dean, 1961; Shahar, 2009). The individual feels lonely, cut off, unwanted, unloved, and unvalued (Dean, 1961, 2005; Srole, 1956). There could be rulelessness, excessive freedom and liberalism, non-recognition of authority figures, and anarchy in an individual's life (Seeman, 1959; Weyrauch, 2007). There could be feelings of purposelessness in an individual's activities (Dean, 1961; Ghorpade, Lackritz, & Singh, 2008). There could be an absence of values that might give purpose or direction to life (Adair, 2008; Dean, 1961; Twenge, Zhang, & Im, 2004). The individual could lose intrinsic and socialised values and consequently they could feel insecure and hopelessly disoriented (Dean, 1961; Huschka & Mau, 2006). This condition could be a social disorder in that common human values are submerged in the welter of private individual interests seeking satisfaction at the expense of others (Seeman, 1959).

Normlessness occurs when the individual perceives no difference between conformity and deviance in obtaining desired rewards. There could be a conflict of norms in an individual's life (Bjarnason, 2009; Dean, 1961). This situation happens when the individual feels that the disciplining effect of collective standards has been weakened (Rayce, Holstein, & Kreiner, 2009; Seeman, 1959). The normless individual could regard the culturally prescribed way of obtaining reinforcement as not congruent with the available means for their attainment (Kopp, 2005; Seeman, 1959). They could engage in non-sanctioned behaviours to get sanctioned results or immediate rewards that are approved by society. As long as they get what they want, individuals with normless behaviours could be less concerned about the cultural appropriateness of intent or legitimacy of action (Brockett & Golden, 2007; Seeman, 1959; Wilson & Donnermeyer, 2006). The expectancy held by the individual with anomic tendencies could be that socially unapproved behaviours are required to achieve given goals

(Seeman, 1959). It could be expected that individuals experiencing normlessness or anomie could be involved in sexual assault or forced sex. They could be at risk of infecting their partners with HIV or spread HIV through casual sex.

Anomie or normlessness is associated with meaninglessness and external locus of control (Seeman, 1959). In a community or society showing symptoms of anomie, individuals could show maladaptive behaviours and rebellious tendencies (Seeman, 1959; Spann, Molock, Barksdale, 2006). The greater majority of individuals in such a community might attribute their difficulties to mystical forces, fortune, chance and luck (Seeman, 1959). Individuals who engage in deviant behaviours may believe in supernatural forces to protect them from being caught or punished for their wrongful acts (Bull, 2004; Martino-McAllister, 2004).

Normlessness could be a risk factor in health promotion. Individuals who are careless about their lives could care less about preventing and controlling the spread of diseases (Ridge, Ziebland, Anderson, Williams, & Elford, 2007). They could infect others without much remorse as such individuals are reported to be violent and negligent (Worth, Patton, & Goldstein, 2005). In HIV and AIDS risk reduction and prevention research, violence is documented as a risk factor (Dunkle, Jewkes, Brown, Gray, McIntyre, & Harlow, 2004). Normless individuals may not take the initiative and responsibility to protect themselves and others since they could have the belief that whatever happens to them is a result of predestination or luck (Morah, 2007; Seeman, 1959).

3.10.5 Social alienation and isolation

Alienated individuals could experience social isolation (Goetzel & Ozminkowski, 2008; Loo & Rolison, 1986; Seeman, 1959). The isolated individual could be described as detached from society's cultural standards and the individual could be regarded as estranged from society and its cultural values (Bekhet, Zauszniewski, & Nakhla, 2008; Seeman, 1959). The isolated individual is characterised by low levels of public participation in health programmes, low spatial mobility, anonymity, low participation in voting for health change, fewer memberships in organisations, job turnover, and fewer visits by friends (Dean, 1961; Edmunds, 2006; Schloredt, & Heiman, 2003).

The isolated individual generally has a low reward value or low opinion of the beliefs that are typically highly valued by their society (Schlichle, Yssel, & Merbler, 2005; Seeman, 1959). Their degree of commitment to their culture could be considered as "apart from societal expectations" (Seeman, 1959). Such individuals could be regarded by society as "innovators" (Hazen & Alberts, 2006; Seeman, 1959). This implies that the alienated and normless individual would "innovate" culturally disapproved means to achieve their goals (Seeman, 1959). The alienated and isolated

individual could be considered as ``rebellious`` or a dissident (Lopes, 2005; Rawal, 2008; Seeman, 1959). The rebellious individual could try to lead other individuals outside the enviroing social structure to envisage and seek to bring about a new, greatly modified social structure (Hellstrom, 2004; Ochieng, 2006; Seeman, 1959). The alienated and isolated individual could be viewed as against the reigning social values and standards (Elliot, Cunningham, Linder, Colangelo, & Gross, 2005; Seeman, 1959). Such rebellious or liberal ideas could make elders or community leaders uncomfortable to such an extent that such people with liberal ideas could be forced to leave their immediate community or they could face extreme levels of social isolation (Kerr et al., 2009; Lopes, 2005).

Isolation is associated with psychological disorders (Ikin, 2004; Van Vlierberghe & Braet, 2007). Lonely individuals could be at risk of developing health problems (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Caspi, Harrington, Moffitt, Milne, & Poulton, 2006; Rubin, Coplan, & Bowker, 2009; Zaitsoff, Fehon, & Grilo, 2009). Isolated individuals might not show positive health-seeking behaviours and they might stigmatise their illnesses (Salmon, Booth, Phongsavan, Murphy, & Timperio, 2007). If individuals do not disclose their personal health or volunteer health information to others, chances could be that such individuals might not be helped and their health condition might deteriorate (Benyamini, Leventhal, & Leventhal, 2000; Laverack, 2006).

3.10.6 Social alienation and self-estrangement

Alienated individuals could report experiences of self-estrangement (Crinson & Yuill, 2008; Seeman, 1959). The alienated individual could experience himself or herself as behaving strangely (Seeman, 1959; Young & Brewer, 2008). The individual becomes estranged from himself or herself (Holmes & Gastaldo, 2006; Seeman, 1959).

Self-estrangement refers to the loss of intrinsic meaning or pride in an individual`s work or other activities (Dettart-Davis & Pandey, 2005; Seeman, 1959). The individual fails to derive satisfaction from the work they do or activities they engage in and is thus self-alienated from what they do (Jones, 2008; Seeman, 1959). Self-estrangement occurs when the individual does not find life activities meaningful and satisfying (Hall & Fincham, 2005; Seeman, 1959). Self-estrangement could result in the development of external locus of control in that the individual with perceptions of alienation could behave or act in such a manner as to please significant others (Mirowsky & Ross, 2007; Seeman, 1959). The individual could be unable to find self-rewarding activities to satisfy their needs (Evans, Vallano, & Pelham, 1995; Mauldin, 2008; Seeman, 1959).

Individuals experiencing self-estrangement could be at risk of developing psychological disorders such as dissociative disorders, depression, suicide ideation, or stress (Burston, 2006; Shapiro, 2006; Sloan, 2008). They could be at risk of homelessness, deserting parents or spouses, and substance abuse (Arrigo & Takahashi, 2006; Exline, Yali, Sanderson, 2000). Self-estrangement could be a risk factor in disease prevention (Hovey, Kim, & Seligman, 2006; Masvaure, Terry, Adlis, & Mhloyi, 2009). The self-estranged individual might not make use of health facilities available to them in their community (Myles, 2004; Pronyk, Makhubele, Hargreaves, Tollman, & Hausler, 2001). Individuals experiencing self-estrangement could be trained to be in touch with themselves through internal locus of control-based training. They could be trained to protect themselves against HIV and AIDS to treat love and sexual relations as real.

3.10.7 Social alienation and student integration in university

Some students in universities might experience alienation due to various factors. A student could feel unease and uncomfortable in university (Huschka, & Mau, 2006). They could feel excluded from the social and organisational culture of the university (Levin, Van Laar, & Foote, 2006; Smedly, Myers, & Harrell, 1993). They could develop a sense of non-belonging, non-sharing, and that they are not welcome at the university (Case, 2008; Hajda, 1961; Skuy, & Erikson, 1980).

The alienation could stem from incidences such as participation in a peer group activities and specific encounters with a small or large group. It could be worsened by the student`s continuous and intense feelings of low self-concept (Esplen, Stuckless, Berk, Burler, & Gallinger, 2008; Hajda, 1961). Other factors could be the student`s culture, race, peer group, birthplace, disability, neighbourhood, university residence, or socio-economic status (Mao et al., 2008; Hajda, 1961; Shoho, Katims, & Wilks, 1997).

University students could experience alienation due to the contradiction between their own expectations and society`s expectation of university students or graduates (Hajda, 1961; Poyrazli & Lopez, 2007). Some students could view university studies as `` a point of no return`` characterised by seriousness and hard work while others might regard the university as a `` youth hostel`` in which they enjoy their youth to the full (Boland, Fitzpatrick, Scallan, Dally, Herity, Horgan, & Bourke, 2006; Hajda, 1961). The student could be viewed as alienated by society when they fail to have cultural or religious affiliation, intense attachment to their families and parents, and when they choose new friends in university and ignoring the old high school friends (Dervic, Oquendo, Grunebaum, Ellis, Burke, & Mann, 2004; Hajda, 1961). This new life orientation could cause conflict in the individual (Reason, Terenzini, & Domingo, 2006). They could be straddling the fence and not being decisive on

which dimension to follow, that is, old ways of life or the new university life (Oldfield, 2007; Witt, 1989). The alienated university student is one who finds the university not accommodating their values and expectations (Smedly, Myers, & Harrel, 1993). When the students return home on vacation, they could also find their families, religious groups, cultural groups, and their immediate communities rejecting them for their newly acquired behaviours that are associated with university life or middle youth in general (Kazarian, 2005). They could have perceptions of alienation in that they could have the feeling that they are strangers outside the university (Henderson-King & Smith, 2006; Hajda, 1961). Students who find their studies difficult could also be alienated by the academic life of intellectualism (Johnson, 2007). Those who do well could regard themselves as the future elite and tend to look down upon colleagues with low grades in university (Hajda, 1961; Van der Berg, 2007). Those struggling to get good grades could face academic exclusion (Koen, Cele, & Libhaber, 2006) and would have to return home and possibly face yet another form of rejection from parents, friends, family, or the community for letting them down (Brown & Beckett, 2007; Flett, Blankstein, & Hewitt, 2009; Koen et al., 2006). The contradiction between a student's new life in university and society's expectations could have a negative impact on the student's locus of control and coping behaviours (Martin, Richardson, Bergen, Roeger, & Allison, 2005).

The university student's alienation could be associated with university bureaucracy and the affordability of university fees. The student could have the feeling that those wielding authority in university could be hostile to their effort to get a tertiary qualification (Fitzgerald, 2009; Hajda, 1961). The university codes of conduct and academic expectations could make some students feel marginalised or unwanted (Fazey, & Fazey, 2001; Nadelson, 2007).

Students failing to fully integrate in university life could develop health problems. They could engage in self-injury or escapade (Heath, Toste, Nedecheva, & Charlebois, 2008). Some students could develop violent behaviours and endless student protests (Motala, Hoppers, & Pendlebury, 2006). Some alienated students could lead solitary lives, engage in substance abuse, stop attending classes, fail to submit written assignments, avoid contact with lecturers, fail to attend tutorials and some may not attend seminar paper presentations (Kaplan, Liu, & Kaplan, 2005). Such avoidance and lack of commitment towards academic work and full participation in university life are risk factors associated with psychopathology (Brown, 2009).

3.10.8 Social alienation and health risks

Highly alienated students often complain of headaches, insomnia, feeling blue, not being able to work, having worries about their academic work, loss of appetite, and confusion about their goals in

life (Love, 2008; Hajda, 1961; Khajawa & Dempsey, 2008). Alienation is positively associated with anxiety (Hajda, 1961; Ross & Zhang, 2008). It is associated with psychoneurosis and schizophrenia (Dean, 1961; Kahler, 2009). Alienated individuals could feel rejected by their peers and hence could be lonely and feeling helpless (Agrawal & Chahar, 2007; Dean, 1961; Gwandure, 2007a). Individuals reporting alienation have been found to show symptoms of suicide ideation and perceptions of being socially marginalised (Cole & Espinoza, 2008; Ferracuti & DeMarco, 2004; Fisher, 2007). They could be prone to chemical addiction, violence and crime, and they are reported to be bad partners in love relationships and marriage (Cast, Schweingruber, & Berns, 2006; Nettler, 1957).

Among university students, alienation could lead to substance abuse, depression and external locus of control (Dennis, 2009; Ostrove & Long, 2007). Substance abuse and depression are risk factors in HIV and AIDS risk reduction (Burke, 2008; Dennis, 2009; Kalichman, Sikkema, DiFonzo, & Luke, 2002; Seth, Raiji, DiClemente, Wingwood, & Rose, 2009). Students experiencing alienation may not join health promotion clubs, utilise campus health facilities, or attend behaviour change workshops offered by the university (Bell et al., 2009; Dixon & Kurpius, 2008).

3.10.9 Social alienation health risk reduction training

Social alienation can predispose individuals to health risks that can be reduced through health training. Locus of control-based health training to reduce social alienation was found to be effective by early researchers on locus of control and health (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Some of the locus of control techniques that could be used in health risk reduction training are personal effectiveness in dealing with meaninglessness, social isolation, powerlessness, normlessness and self-estrangement (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Health training programmes could focus on loneliness as a health risk (Love, 2008; Hajda, 1961; Khajawa & Dempsey, 2008). The social learning principles of making an individual's health environment meaningful through the setting of achievable health standards and objectives could help reduce health risks associated with social alienation (Agrawal & Chahar, 2007; Dean, 1961; Rotter, 1954).

Alienation is a concept that could be used to explain some of the disoriented, purposeless and goalless behaviours of university students. The concept is used to assess locus of control. External locus of control is associated social alienation. In health promotion, external locus of control is a risk factor in disease prevention. Health training and psychotherapy could reduce health risks associated with social alienation (Bleiberg & Markowitz, 2005).

Alienation among South African students could be associated with the historical imbalance in which Africans, Coloureds, Indians, and the Chinese were racially segregated. The effects of racial discrimination and unequal distribution of resources could have a negative impact on university

students today because some of the racial inequalities are not yet resolved. There are remarkable racial and class inequalities with regard to education, health, and economic development in South Africa.

Locus of control-based training programmes to reduce perceptions of social alienation among South African students and the youth in general could focus on rebuilding the apparently shattered personal image and integrity. Perceptions of racial and class inequality could be overcome by focusing on self-centred teaching in which the individual takes the initiative and responsibility for changing the status quo. Although past injustices could have a psychological effect on present psychological functioning, individuals trained in the use of locus of control-based techniques could be able to shift their attention from the external factors affecting them towards internal personal characteristics that could help them change the course of events.

The training programmes could focus on empowering students experiencing powerlessness in a university environment. It could be argued that powerlessness might result in the individual not taking a strong stance to prevent or reduce HIV and AIDS risks (Brown, Danovsky, Lourie, & DiClemente, 1997). If the individual experiences the world as meaningless that could be a risk factor in HIV and AIDS risk reduction. Health educators could target meaninglessness in their training interventions as a health risk. Individuals should value life and should strive to find meaning in love and sexual relations. Training interventions targeting normlessness as a health risk could focus on violence and behavioural pathology as risk factors in HIV and AIDS risk reduction. In South Africa, intimate partner violence has been documented as one of the factors that are associated with the higher rate of HIV infection in women than men. Trainers could indicate the health risks of social isolation on psychological functioning among the youth. Self-estrangement as a health risk could be discussed in the context of dissociative disorders and health risks among university students. It could be argued that individuals experiencing alienation and psychopathology might not be personally effective in preventing or reducing HIV and AIDS risk.

3.11 HIV and AIDS risk among the youth in South Africa

3.11.1 Definition of HIV and AIDS risk

HIV refers to human immunodeficiency virus that kills the body's CD4 cells (Centre for Disease Control and Prevention (CDC), (2007). HIV risk refers to the possibility of the virus being passed from one person to another if someone with HIV infection has sex with or shares drug injection needles with another person or through accidental happenings or from mother to baby during pregnancy or during delivery if the mother is HIV positive (Centre for Disease Control and Prevention, 2007). AIDS refers to acquired immunodeficiency syndrome (Centre for Disease Control and Prevention, 2007). The disease destroys the immune system. When the immune system fails the

individual becomes ill and can die (Centre for Disease Control and Prevention, 2007). AIDS risk occurs when individuals who are HIV positive behave in ways that will result in the immune system failing to prevent further infections and thus HIV infection degenerates into full-blown AIDS. In this study, the clinical distinction between HIV and AIDS was not considered. HIV and AIDS are conditions treated as one syndrome in this study. The reason for not splitting the two medical conditions was that the study looked at the social aspects of risk and not the clinical details of the different phases of HIV leading to full-blown AIDS. Moreover, participants in this study were not tested for HIV or AIDS and hence the clinical stages of disease progression among participants were not necessary. In the same vein, some of the participants could have been HIV negative thus rendering the use of the term HIV or AIDS inappropriate in describing them. In view of this controversy surrounding the distinction between the two terms, it was found suitable in this study to refer to HIV and AIDS as one term. Consequently, HIV and AIDS risk in this study referred to lack of relevant knowledge about HIV and AIDS, negative attitudes about HIV and AIDS, myths about HIV and AIDS, and behaviours that could expose individuals to HIV infection (Centre for Disease Control and Prevention, 2007). HIV and AIDS risk is reported to be highest among the youth in South Africa.

3.11.2 High prevalence of HIV and AIDS among the youth in South Africa

The youth account for 45% of all new HIV infections globally and almost 90% of this number is made up of young people in Sub-Saharan Africa (Bhana & Petersen, 2009). Young people in South Africa are reported to be at risk of HIV and AIDS. The prevalence of HIV and AIDS is highest among the 15 to 49 age group in South Africa (Noble, 2006; Peltzer, 2005). The same risk patterns were observed among the 15 to 24 age group which constitutes the majority of university students (Brookes et al., 2004; Pettifor et al., 2004). The HIV and AIDS pandemic among the youth seems to be complicated by the fact that there seems to be a gap between knowledge of HIV and AIDS and sexual behaviours. The youth tend to attend workshops on HIV and AIDS and sometimes engage in HIV and AIDS education campaigns but some of them fail to stick to safe methods of HIV and AIDS prevention or risk reduction (Pettifor et al., 2005).

It was observed that young women were significantly more likely to be infected with HIV in comparison to men in South Africa (Pettifor et al., 2005). The prevalence rate among young women was 15.5 % as compared to young men 4.8 % (Pettifor et al., 2005). Genital ulcers in the past 12 months were associated with HIV infection among the youth of South Africa (Pettifor et al., 2005). Unusual vaginal discharge among young women was associated with HIV and AIDS risk (Pettifor et al., 2005). Higher prevalence of HIV infection was found among women and men with older partners (Pettifor et al., 2005). Dependence on older partners for financial and other forms of security among the youth was found to be a risk factor in HIV and AIDS risk reduction or prevention (Pettifor et al., 2005).

There is documented evidence in South Africa which indicates the link between intimate partner violence and HIV and AIDS risk (Dunkle, Jewkes, Brown, Gray, McIntyre, & Harlow, 2004). Young people could be involved in violent relationships that may make them vulnerable to HIV and AIDS risk (Dunkle et al., 2006). Intimate partner violence for both young men and women could involve sexual coercion, sexual assault, dominance and threatening behaviour, prevention of partner from earning an income, taking away a partner's income, abandonment and neglect without provision of money for household needs, sex in exchange for material favours, limited negotiation for safer sex or disregard of partner's emotions (Manfrin-Ledet & Demetrius, 2003; Pronyk et al., 2006; Sandra & Martin, 2004). As a youth group, university students could experience sexual violence that could impact negatively on their ability to practise safe sex in the context of HIV and AIDS risk. The social, political, and economic environments prevailing in South Africa could have a negative impact on university students' locus of control and health promotion initiatives (Fassin & Schneider, 2003).

3.11.3 Training models used to reduce HIV and AIDS risk among the youth

Health models are important in disease prevention and in reducing infectious diseases at individual and community levels through training (Darbes, Crepaz, Lyles, Kennedy, & George, 2008). Health educators use so many models to reduce health risks and each model has risk factors that it targets as critical in risk prediction and risk reduction (Rolison, & Scherman, 2002). Health prevention models have been used in reducing the prevalence of diseases such as malaria, cholera, bilharzia, or sexually transmitted diseases (Bunel, Mermin, & De Cock, 2006; Kalichman, Cain, & Jooste, 2008). Health prevention models help educators and clinicians in modifying human behaviour for better health. Individuals are helped deal with their health conditions and they are made aware of their own health-impairing habits. Individuals are encouraged to improve their health by engaging in health-protective behaviours (De Genna, Stack, Serbin, Ledingham, & Schwartzman, 2006; Munro, Lewin, Swart, & Volmink, 2007). It is argued by supporters of health models in disease prevention and risk reduction that most of the illnesses such as lung cancer, cirrhosis of the liver, coronary heart disease, diabetes, hypertension or obesity are largely caused by poor health habits and reluctance of individuals to engage in health-protective behaviours (Darnton-Hill, Nishida, & James, 2004). It is argued in health promotion that most of the deaths are caused by human negligent behaviour (Brennan et al., 2004). Human behaviour and lifestyle have a profound effect on health and longevity (Rimm & Stampfer, 2004).

Health risk reduction models are built on factors that are considered to be essential in predicting health risks. These factors are targeted in health training programmes. Some of the risk reduction models are built on psychological theories while others are based on identified risk factors in a target population. The common factors in health models are social factors, genetic or biological factors, emotional factors, symptoms, attitudes, beliefs, and cultural values as represented in Table 1 below.

Table 1: Common health models used in HIV and AIDS risk reduction

Model	Factors assessed	Developers/Authors/Researchers	Year
The Health Belief Model.	Perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and health motivation.	Becker	1974
		Rosenstock	1974
		Strecher, Champion, & Rosenstock	1997
		Janz & Becker	1984
Theory of Reasoned Action/Theory of Planned Behaviour	Behavioural beliefs, normative beliefs, control beliefs, attitude towards behaviour, subjective norm, perceived behavioural control, behaviour intention and behaviour	Edwards	1954
		Fishbein	1967
		Ajzen & Fishbein	1970
		Ajzen	1985
		Ajzen	1991
The Transtheoretical Model	Stages of behaviour change: pre-contemplation, contemplation, preparation, action and maintenance.	Prochaska & di Clemente	1984
The precaution adoption process model	Stages of behaviour change: unaware of issue, unengaged, considering whether to act, or deciding not to act, deciding to act, action, and maintenance.	Weinstein	1988
		Weinstein & Sandman	1992
The Health Action Process	Stages of behaviour change: self-efficacy, outcome expectancies, risk perception, goal, plan, initiative, maintenance, recovery, disengagement.	Schwarzer	1992
The Protection Motivation Theory	Severity, susceptibility, response effectiveness, and self-efficacy	Rogers	1975
The KAPB Methodology	Knowledge, attitudes, perceptions, and beliefs regarding HIV and AIDS in South Africa	du Plessis, Meyer-Weitz, & Steyn	1993
		World Health Organisation	1989
The Information-Motivation-Behavioural Skills Model	AIDS knowledge, behavioural intentions, self-efficacy, and protected sex	Fisher & Fisher	1992
		Fisher, Fisher, & Malloy	1994

Sources (du Plessis et al., 1993; Kalichman, Simbayi, Cain, Jooste, Skinner & Cherry, 2006; Morrison & Bennett, 2006).

Most of the models are used in predicting health risks. The health educator looks for specific attributes in an individual or group of trainees or patients before implementing a health training programme or behaviour change intervention. Individuals are generally expected to have normative beliefs that guide their health behaviour (Andrykowski, Beacham, & Harper, 2006; Weinstein, 2007). In an African context, cultural factors could facilitate health action in some situations. Conversely, some cultural values could make individuals vulnerable to HIV infections in other contexts (Shisana & Simbayi, 2002).

Health models could identify health risk by assessing an individual's level of fear of the disease. Affective beliefs and emotions could influence behaviour (Friedman, 2001). Individuals who have great concerns about their health and lifestyle could engage in a number of health-protective behaviours while individuals who perceive themselves as not vulnerable to infection may not take adequate action to prevent illness (Edelman, Christian, & Mosca, 2009). In HIV and AIDS research, it is argued that individuals who do not fear HIV infection could be at risk of re-infection if they are already HIV positive or they could wantonly infect others (Epperson, Platais, Valera, Barbieri, & El-Bassel, 2009). Anticipated regret and a sense of guilt are associated with the intention to engage in health-protective behaviours such as use of condoms. Highly conscientious individuals are regarded as more likely to promote individual health and that of others (Roberts, Smith, Jackson, & Edmonds, 2009). Self-identity is associated with the desire to prevent illness and the fear of losing self-image due to illness. Individuals are more likely to engage in health-protective behaviours that are consistent with their self-image or self-concept (Malterud & Tonstad, 2009). Personal values are important in health promotion as individuals with a high self-image tend to work towards disease prevention or risk reduction (Mouattapa, Weiss, & Hermann, 2009). An individual's self-identity in health promotion has been associated with weight loss, smoking cessation, and reduction in sedentary lifestyle through physical exercise (Van den Putte, Yzer, Willemsen & Bruijn, 2009).

Ambivalence is considered as a risk factor in health risk reduction models. An individual's attitude towards the target disease could either be positive or negative (Ogden, 2007). Ambivalence is characterised by the conflict caused by competing evaluative judgments. It refers to conflict avoidance and indecisiveness in taking a health action (Radsma & Bottorff, 2009). Individuals experiencing ambivalence could be counteractive, indifferent, or evasive in disease prevention initiatives (Radsma & Bottorff, 2009). Ambivalence could be a risk factor among health educators, healthcare providers and their patients in HIV and AIDS risk reduction training programmes (Weir et al., 2009). Ambivalent healthcare providers and patients have a skeptical attitude towards the efficacy of

interventions provided. The health educator may not follow the requirements of the training programme while the patient may not take the medication as prescribed.

Some models have personality as a key factor in predicting health risk. An individual's personality is used to predict behaviour in a health context. This could encompass biological traits or social attributes of personality. Personality is associated with a wide range of health behaviours such as smoking, dieting, or sexual practices (Mehrotra, Noar, Zimmerman, & Palmgreen, 2009; Perrig-Chiello, Jaeggi, Buschkuehl, Stahelin, & Perrig, 2009). In this study, personality factors of Rotter's social learning theory of personality were identified as key to HIV and AIDS risk prediction and risk reduction. Locus of control as a personality construct was used to design a risk reduction training programme for university students. The social learning theory risk factors identified for the purpose of designing a locus of control-based training programme for HIV and AIDS risk reduction in this study were social systems control, self-control, fatalism, achievement-oriented behaviour, delay of gratification, personal values and expectancies, and alienation.

3.11.4 HIV and AIDS risk factors among the youth in South Africa

HIV and AIDS risk factors among the youth are best captured by examining the World Health Organisation (1989) KABP model. So many of the psychosocial factors associated with HIV and AIDS risk can be explained using the KABP methodology. Even though some researchers argued that the methodology is not effective in predicting HIV and AIDS risk, it could be reasonable to use the model as a basic method of understanding the complexity of the problem (Gao, Zhang, & Jin, 2009). This method of assessing HIV and AIDS risk does not involve the actual testing of participants for HIV. It only guides health educators and counsellors in identifying individuals at risk of HIV infection or spreading it to others. The KABP methodology has been found suitable in assessing HIV and AIDS risk in South Africa (du Plessis et al., 1993). The variables assessed among the youth in South Africa are knowledge, attitude, beliefs and practices (Katz & Low-Ber, 2008).

3.11.4.1 Knowledge about HIV and AIDS among the youth in South Africa

The level of knowledge about a disease is usually associated with an individual's ability to prevent or reduce chances of infection (Delobelle, Rawlinson, Ntuli, Malatsi, Decock, & Depoorter, 2009). Knowledge about a disease is generally associated with intention to reduce risk by engaging in health-protective behaviours (Schaalma et al., 2009). HIV and AIDS knowledge is constantly changing due to massive research on the subject globally. New ideas come and go and the public is constantly updated about new developments in the field. At the moment hope is pinned on the use of antiretroviral medicine and the new HIV vaccine drug which seems to be breaking new ground in HIV

cure. The groundbreaking research provides hope of a cure following HIV clinical trials in Thailand in 2009 (National Institute of Allergy and Infectious Diseases (NIAID) (2009). The new vaccine has demonstrated a modest HIV preventive effect among participants by cutting the risk of infection by 31% among 16000 volunteers in Thailand. This knowledge is important for maintenance of hope among HIV positive youth that a cure could be found in their lifetime. There are HIV clinical trials using microbicides in reducing HIV infection among young women in South Africa (McGowan, 2006; Romano, Malcom, Garg, Rohan, & Kaptur, 2008). There is ongoing research about the effectiveness of circumcision in preventing HIV infection among men in South Africa (Auvert et al., 2009; Mahiane et al., 2009). Such knowledge about current developments in HIV and AIDS research could help participants live with hope of success. Participants living with HIV and AIDS could use the information to engage in health-protective behaviours to avoid re-infection and spreading the disease. They would not want their HIV status to deteriorate into full-blown AIDS. It is demonstrated that HIV and AIDS knowledge has helped HIV positive individuals realise the medical benefits taking antiretroviral drugs in boosting their health (Malow, Rosenberg, & Divieux, 2009). Among HIV negative individuals, knowledge about HIV and AIDS could influence some individuals to remain faithful to their partners and to avoid risk sexual situations (Forrest, Kaida, Dietrich, Miller, Hogg, & Gray, 2009).

It is argued in HIV and AIDS risk research that individuals with low knowledge levels are more likely to be infected with HIV (Djokic et al., 2009; Tenkorang, Rajulton, & Maticka-Tyndale, 2009). Longitudinal studies have shown that individuals with limited knowledge about HIV and AIDS contracted the disease much earlier than individuals with higher knowledge levels (Lan, Lundborg, Mogren, Phuc, & Chuc, 2009; Murphy, Brecht, & Huang, 2009). HIV and AIDS training programmes could reduce risk by increasing knowledge through training (Jones, Tshimanga, Woelk, Nsubunga, & Sunderland, 2009; Medley, Kennedy, O'Reilly, & Sweat, 2009). Participants with low levels of HIV and AIDS knowledge tend to show high risk profiles on measures of HIV and AIDS risk (Hiner, Mandel, Weaver, Bruce, McLaughlin, & Anderson, 2009).

3.11.4.2 The attitude of the youth towards HIV and AIDS in South Africa

Researchers on HIV and AIDS risk identify an individual's attitude as related to HIV and AIDS vulnerability (Lau & Woods, 2009; Selikow, Ahmed, Flisher, Matthews, & Mukoma, 2009). It is posited in HIV and AIDS risk studies that if an individual fears HIV infection there could be a high likelihood that the individual could behave in ways that could reduce the risk of HIV infection (Flisher, Evans, Muller, Lombard, 2004; Kalichman & Simbayi, 2009). It is also contended that HIV and AIDS preventive efforts such as voluntary counselling and testing, use of antiretroviral drugs,

male circumcision, cervical protective barriers, suppression of herpes simplex virus, use of vaginal microbicides, and use of the prophylactic HIV-1 vaccine have not yielded encouraging results as yet in South Africa perhaps due to the influence of negative attitudes towards these interventions (Kalichman & Simbayi, 2009).

The youth in South Africa could be described as having an ambivalent or negative attitude towards HIV and AIDS considering the rising rate of new HIV infections (Ahmed, Flisher, Matthews, Mukoma, & Jansen, 2009; DiClemente & Crosby, 2009; Parsitau, 2009). The youth seem to continue engaging in risk sexual practices and even if most of them could be aware the risk of contracting HIV (Peltzer, 2005). Young people in South African universities are reported to be sexually promiscuous in the same way as the youth that is not in universities behave. It is interesting to note that the same sexual practices are reported among university students overseas (Ma et al., 2009; Patel & Trisha, 2009; Tan, Pan, Zhou, Wang, & Xie, 2007).

Stigma could affect an individual's ability to prevent or reduce HIV and AIDS risk (Kalichman & Simbayi, 2003; Wong et al., 2009). In South Africa, HIV and AIDS stigma is associated with shame, guilt and social disapproval for people living with HIV and AIDS (Kalichman & Simbayi, 2003). The prejudice and discrimination against people living with HIV and AIDS (PLWHA) could involve emotional and physical abuse. This negative attitude towards the subject and affected individuals could degenerate into racism, homophobia, misogyny, misandry, or misanthropy (Deacon, Uys, & Mohlahlane, 2009; Nel & Judge, 2008). Some communities could associate HIV and AIDS with prostitution, poverty, substance abuse or illiteracy (Cluver, Gardner, & Operario, 2008; El Bassel, Witte, Wada, Gilbert, & Wallace, 2004).

HIV and AIDS stigma among university students could be characterised by non-attendance at HIV and AIDS workshops, low health-seeking behaviours, negative attitude towards condoms, behaving against ethical standards or knowledge taught in university, low illness behaviour, low sick role behaviour or the avoidance of institutions and associations that deal with HIV and AIDS risk reduction (Relf, Laverriere, Devlin, & Salerno, 2009; Zhang et al., 2007). Stigma could interfere with the learning of new health behaviours that could prevent or reduce HIV infection and hence exposing students to HIV and AIDS risks (Maman et al., 2009). Training programmes on HIV and AIDS risk reduction could target stigma as a health risk (Shain, Piper, Newton, Perdue, Ramos, Champion, & Guerra, 1999).

3.11.4.3 Beliefs about HIV and AIDS among the youth in South Africa

Beliefs are associated with health behaviours (Wakefield, Ruffin, Campbell, Roberts, & Wilson, 2008). Young people in South Africa could have beliefs and myths about HIV and AIDS that may make them vulnerable to HIV infection (Ragnarsson, Onya, & Aaro, 2009). Some people could rely on traditional beliefs and medicine in HIV and AIDS prevention in South Africa (Peltzer, Friend-du-Preez, Ramaglagan, Fomundam, & Anderson, 2008). Traditional beliefs and cultural values are usually inseparable and play a role in health decisions. Traditional beliefs and cultural values regarding courtship, sexual networking, transactional sex, and prevention of sexually transmitted diseases could affect the way individuals with strong traditional beliefs respond to HIV and AIDS risk (Leclerc-Madlala, Simbayi, & Cloete, 2009). Some people could trust traditional methods of disease prevention that were used in South Africa before the colonial era as these methods of disease prevention and cure have proved to save humanity since time immemorial. They attend to pregnant women, treat physical and mental health problems and some of them are treating people with HIV and AIDS (Peltzer, 2009). The World Health Organisation takes cognisance of the contribution of indigenous medicines as complementary and alternative health care practices (Sorsdahl et al., 2009). The South African laws recognise traditional health practitioners as providers of complementary healthcare (Republic of South Africa, Act Number 22, 2007).

Traditional and religious practices could be problematic when they recommend health practices that go against mainstream health practices. Some religious and cultural groups might be against HIV voluntary counselling and testing, use of antiretroviral treatment, or allowing the youth to talk of sex and HIV in the presence of adults (Roura, Busza, Wringe, Mbata, Urassa, & Zaba, 2009; Watt, Maman, Jacobson, Laiser, & John, 2009). Traditional and religious beliefs could affect the way university students could behave as members of the larger community. Training programmes on health risk reduction could target the negative aspects of beliefs in HIV and AIDS risk reduction (Amornkul et al., 2009; Heeren, Jemmott, & Tyler, 2009)

3.11.4.4 Risk practices among the youth in South Africa

Young people in South Africa are reported to engage in behaviours that could make them susceptible to HIV infection or cause their HIV status to deteriorate to full-blown AIDS (Parry, Carney, Petersen, Dewing, & Needle, 2009). The commonly reported HIV and AIDS risk practices are having multiple partners, having sex while drunk or high on drugs, intravenous drug use, non-use of condoms, inconsistent use of condoms, dry sex, vaginal douching, felching, syringe exchange, anal sex, transactional sex, unprotected sex, exposure to infected blood, having sex with a partner with sexually

transmitted diseases, reusing condoms and other forms of sex that can result in condom failure (Goldberg, Chiapetta, Gold, 2007; Peltzer, Simbayi, Kalichman, Jooste, Cloete, & Mbelle, 2009).

Other risk factors include unawareness of one's HIV status, unwanted pregnancies, backyard abortions, residing in urban crowded places without security, lack of communication between parents and children about HIV and AIDS, infrequent visits to clinics in the past 12 months for getting new information on HIV and AIDS and health care products for individuals who are sexually active, and not having routine medical check-ups (MacPhail, Pettifor, Moyo, & Rees, 2009; St Lawrence, 1993). Sunmola, 2004). Africans and Coloureds are reported to show higher HIV prevalence than Indians and Whites (Shisana & Simbayi, 2002). People who cannot read and speak English and those who are not exposed to the electronic and print media are reported to show higher HIV prevalence and risk profiles (Shisana & Simbayi, 2002). People living in informal settlements and shacks with limited access to HIV and AIDS training programmes were also reported to show higher HIV prevalence and HIV and AIDS risk than people living in developed communities (Shisana & Simbayi, 2002). Some religious and traditional healing practices could use risk methods such as use of unprotected needles, or razors (Shisana & Simbayi, 2002). For example, the way traditional circumcision is performed in South and other African countries raises controversy about possible exposure to HIV infection (Baeten, Celum, & Coates, 2009; Peltzer & Kant, 2009) although researchers now indicate the efficacy of male circumcision in reducing HIV infection for the circumcised man and not his female or male sexual partner (Baeten, Celum, & Coates, 2009; Connolly et al., 2008).

University students could engage in risk sexual practices due to the influence of peers, internet pornography, drugs, abusive usually older partners, or someone they depend on financially (Rosengard, Anderson, & Stein, 2006). The youth could engage in risk practices out of novelty, sensation-seeking or sexual adventures (Pettifor, O'Brien, MacPhail, Miller, & Rees, 2009; Rosengard et al., 2006). Young people could engage in anonymous sex in which they invite strangers to have sex with them without even establishing the strangers' HIV status (Klein, 2009). They might have unprotected oral sex, eroticise ejaculation fluids, practise oral stimulation of the anus or rimming, and they could have pleasure in "bukake" that is, ejaculating directly onto the partner's face or mouth (Klein, 2009). Young people could enjoy "double penetration" that is, two men having sex with one woman or man at the same time (Klein, 2009). They could engage in "rough sex" that is better known among the youth involved in such practices as "partying and playing sex". This type of sex is rough and violent but regarded as some form of entertainment or recreation (Klein, 2009). There are wild practices which are usually associated with substance abuse and psychopathology such as "bug chasing" in which the youth actively tries to become HIV infected by performing all risk sexual practices (Klein, 2009). The HIV positive youth could seek to infect partners through a practice called

``gift giving`` (Klein, 2009). A sexual practice called ``uninhibited`` or ``no holds barred sex`` involves liberal sex in which partners may have sex without seeing each other`s face or knowing each other or having sex without any form of reservation or control (Klein, 2009). In such situations the sexual partners do not ask each other about their HIV status. The relationship is cemented by the satisfaction of their sexual drives and nothing else about personal relationships or sexual health. In South Africa such practices are associated with people who abuse drugs and alcohol. Some of the illicit drugs which are associated with HIV and AIDS risk are cocaine, marijuana, mandrax, and heroine (Peltzer et al., 2009).

Studies on drugs and alcohol abuse among the youth indicate that the practice affects both males and females in South Africa. The prevalence and intensity of most illicit drugs used is reported to be higher among males with low education and living in urban areas (Peltzer et al., 2009). In contrast, women who abuse drugs are reported to be educated and living in rural areas (Peltzer et al., 2009). The use of drugs is associated with an individual`s HIV status in South Africa (Shisana et al., 2005). The abuse of drugs and alcohol is associated with having multiple sexual partners (Peltzer et al., 2009). Greater frequency of drunkenness and drug use is associated with having more than one sexual partner, sexual risk behaviour, and failure to use condoms consistently (Peltzer et al., 2009). Drugs and alcohol if taken to excess could result in unprotected sex and thus making the individual susceptible to HIV infection.

In a study on drug use and HIV risk behaviour among three urban communities in South Africa, it was revealed that drugs and alcohol were associated with HIV and AIDS risk (Peltzer et al., 2009). It was observed that individuals who used drugs had sex when they were high and shared needles before sex (Peltzer et al., 2009). They had partners who used cannabis. Individuals who used drugs were found to have vaginal sex without condoms (Peltzer et al., 2009). The findings of the above study were similar to a previous national HIV population-based survey in which 62% of the population reported that they had not used a condom during the last intercourse (Peltzer et al., 2009; Shisana et al., 2005). In the national survey, 66% of the population believed that they could not get HIV while 34% believed they probably or definitely could be infected (Shisana et al., 2005; Peltzer et al., 2009). Substance abuse is associated with forced sex, intimate partner violence and HIV and AIDS risk (Speizer, Pettifor, Cummings, MacPhail, & Kleinschmidt, 2009).

It could be argued in this study that most of the HIV and AIDS risk practices found in South Africa could affect university students as well. As young people, they could have sensation-seeking behaviours that could result in HIV infection (Zaba, Isingo, Wringe, Marston, Slaymaker, & Urassa, 2009). The problem with HIV and AIDS risk is that there seems to be a weak link between an

individual's level of education and their sexual practices. In one national survey it was found that among Africans, those with higher levels of education also showed higher levels of HIV and AIDS prevalence (Shisana & Simbayi, 2002). University students could be at risk of HIV and AIDS. The prevalence of HIV and AIDS in the general population and among the youth could reflect the escalation of the pandemic among university students in South Africa (Keller et al., 2009). Health educators could use a variety of training models in order to reduce some of the health risks among the youth in universities.

The high prevalence rate of 16.2% HIV infection among the 15 to 49 age group in South Africa could imply that university students constitute a population group that is at risk of HIV infection. It could be argued that risk HIV and AIDS behaviours found among the youth are general practices that could be moderated by incorporating a personality dimension into the training programmes. In locus of control research, personal health promotion is regarded as a personality-related attribute that could be improved through the modification of an individual's socially acquired personality. The social learning theory argues that all behaviours are learned and all undesirable behaviours could be unlearned through training. An individual's locus of control orientation could be modified with training and since locus of control influences behaviour, it could be posited that HIV and AIDS risk behaviours could be reduced by modifying an individual's locus of control. Individuals with problems relating to substance abuse, promiscuity, and myths about health have been helped before through locus of control modification. It could be argued that locus of control-based training interventions could be effective in reducing HIV and AIDS risk among university students. This study postulated that locus of control could be a risk factor in HIV and AIDS prevention and control among university in South Africa.

3.11.5 Conclusion

The variables that are used to build the locus of control-based training programme could be useful in assessing HIV and AIDS risk among the youth in South Africa. Health risks and risk sexual practices reported in the literature review as affecting the youth overseas could be practised by the youth in South Africa. Due to globalisation of the world and advances in technology the world is now apparently living together as one community or village. Health problems affecting one regional block would soon be experienced in other regions of the world. The change of locus of control through training and socialisation has been successful in developed countries. Health education training programmes have largely succeeded in changing the health behaviours of individuals and groups in developed countries. This has yielded health benefits such as high life expectancy and a low prevalence of HIV and AIDS. This could be achieved in South Africa through training individuals and

communities in social systems control at local and national levels. Self-control is associated with human civilisation, human development and economic development. Self-regulation could be achieved through training. Risk sexual practices could be reduced with training. Inclusion of the concept of fatalism in HIV and AIDS risk could be challenging in the South African context where people from diverse ethnic and cultural backgrounds have various beliefs systems. It is argued in this study that health-protective behaviours could be exercised in any religious or cultural context as long as there is communication and open dialogue between health workers, medical scientists, and consumers of healthcare services and products irrespective of their faiths or beliefs. It is argued that achievement-oriented behaviour could be essential in reducing health risks. Nations that are low achievers are usually reported to be on the list of countries receiving donor funding to eradicate preventable diseases and such countries could perennially need assistance. Usually, there is little initiative to rebuild their own capacities. There is an association between unwillingness to delay gratification and poverty. Countries that do not build economies for the future tend to live for the day. In the event of a health pandemic, such countries may not be able to treat their people or protect communities from diseases. It is posited in this study that training the youth in delay of gratification skills could reduce HIV and AIDS risk and sexually transmitted diseases. Building personal values and expectancies for good health among the youth could help them have a sense of being. Individuals with high integrity and health values are expected to make an effort to protect themselves and others from HIV infection. The university environment could be a health risk environment in which students could be alienated. The alienated students could experience meaninglessness, self-estrangement, normlessness or isolation. Individuals living in social environments in which they face rejection, abuse, or institutional exclusion are more likely to engage in escape behaviours that could give them a sense of security and tranquillity. Psychopathology is associated with HIV and AIDS risk.

CHAPTER 4

METHODOLOGY

4.1 Introduction

This chapter discusses the methodology used in the collection and analysis of data. The chapter presents the setting, research design, the development of the locus of control-based training programme, piloting the training programme, implementation of the training programme, evaluation of the training programme, participant sampling procedure, data collection, data analysis, and the ethical considerations of the study.

4.2 Setting

Participants in this study were drawn from three university residences of the East Campus Cluster. The residences were Men`s Hall of Residence, Jubilee Women`s Residence, and Sunnyside Women`s Residence. The residences have health and leadership training programmes that aim to improve students` health and psychological wellbeing on campus. The residences accommodate about 500 first year students. The policy of the the university in the allocation of rooms to students is that students who live outside Johannesburg are given first priority. Students who come from provinces where there are no other universities are given preferential treatment as well. The majority of students who are given accommodation come from rural areas, informal settlements, farming towns, and other remote settlements. Preference in the allocation of accommodation is also given to students from previously disadvantaged backgrounds. They might not be able to afford expensive apartments in the city of Johannesburg. This study sample was chosen because it is the group that is considered to be worst affected by HIV and AIDS in South Africa and worldwide.

4.3 Research Design: Pretest-Posttest Repeated Measures Design.

The methodology involved testing participants on locus of control-based variables and HIV and AIDS risk reduction behaviours before training and after training. A pretest-post-test design involves taking two or more responses from a single individual in different time periods (Hair, Black, Babin, Anderson, & Tatham, 2006; Howitt, & Cramer, 2008). The design assessed variations in health risk reduction behaviours with training. The changes in risk behaviours were attributed to the efficacy of

the training programme. The influence of extraneous variables was accounted for in the design. The repeated measures design in this study compared baseline data of the participants before training with post-training data of the participants in order to assess the impact of the training programme (Agresti & Finlay, 2008; Keppel & Wickens, 2004).

4.4 Development of the training programme

The content of the training programme was based on Rotter's social learning theory and HIV and AIDS risk reduction methodologies. The training content incorporated the principal elements of social learning theory in an attempt to reduce HIV and AIDS risk among university students in South Africa. The training programme identified locus of control-based themes that participants went through. These were: social systems control, self-control, fatalism, achievement oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation. The locus of control-related factors were identified by Rotter (1966) as the main contexts that could be used in health risk reduction interventions (Lefcourt, 1976; Phares, 1976).

The training content under the theme of social systems control looked at health risk reduction skills relating to mastery over the environment. Cognitive bases of control were included in the context of locus of control and personal effectiveness (Lefcourt, 1976; Phares, 1976; Rotter, 1966). The roles of personal power and social influence in obtaining health outcomes were included. Skills needed in negotiation for safer sex and risk reduction were incorporated in the theme of social systems control.

The theme of self-control within the context of social learning theory included concepts such as dealing with tempting situations, peer pressure, social influence, gullibility, suggestibility, self-regulation and risk sexual behaviours in health promotion (Lefcourt, 1976; Phares, 1976; Rotter, 1966). This theme emphasised self-restraint and positive health outcomes.

The training content under the theme of fatalism focused on superstition and personal health control. The content looked at myths, beliefs, culture, religion, and practices that could be detrimental to health. The emphasis was on separating myths from realities in health promotion and risk reduction.

Achievement-oriented behaviours were included in the training programme as health-protective behaviours. Participants were expected to demonstrate how they would achieve personal health by doing something positive about their health. Lack of initiative and effort in disease risk reduction were included as health risk factors (Lefcourt, 1976; Phares, 1976; Rotter, 1966). The content included health-seeking behaviours, perceptions about personal health and the need to excel in whatever the person does. Perceptions about the contingency between personal health and individual health habits

were included in the training programme. The training content included perceptions about the contingency between a student's university grades and fairness of lecturers or the university system as a whole.

The theme of deferment of gratification focused on the link between delay of gratification and health risks. The training content targeted impulsivity and future orientation as key factors in health risk reduction (Lefcourt, 1976; Phares, 1976; Rotter, 1966). The content looked at behaviours associated with unwillingness to delay gratification. The consequences of non-delay behaviours in health promotion and risk reduction were included in the training programme.

Personal values and expectancies were included in the training programme to reduce health risks. Low personal values and low expectancies in life were included as risk factors in health promotion (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Negative self-image, negative body image, and negative affect about health outcomes were included as risk factors in health promotion. The focus of the training programme was on modifying distorted health values and expectancies for success. Lack of ambition or aspiration in life was included as a health risk according to Rotter's social learning theory.

The theme of social alienation looked at an individual's perceptions of powerlessness, normlessness, and isolation in health risk reduction (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Low social skills, self-handicapping behaviours, and perceptions of an unjust world were included in the training programme to deal with some elements of psychopathology among the youth. Learned hopelessness, learned helplessness, self-estrangement and dealing with meaninglessness were included in the training programme. The training programme is included in this study as Appendix B in the Appendices section.

4.5 Piloting the training programme

The training programme was piloted on a sample of 60 first-year university students. Notices were put up in Halls of Residence in the East Campus Cluster inviting students to participate in the study. The invitation indicated that the study looked at the relationship between personality and HIV and AIDS risk. The posters indicated that only 60 participants were required to participate in the study. Students were enrolled onto the training programme as they came until the required number was reached. Participants for the pilot study were given the same battery of tests as participants in the main study. The training involved small learning group discussions, short role plays and peer talk on HIV and AIDS using locus of control-based principles of health promotion and health risk reduction. The

facilitator provided cards with locus of control-based learning points for each session. The training content was the same as that for the main study. Participants were tested before training and after training. The training duration was two hours.

The reliability coefficients of instruments were established as follows: social systems control scale, .89 (Cronbach alpha), self-control scale, .90 (Cronbach alpha), fatalism scale, .86 (Cronbach alpha), intellectual achievement responsibility scale, .90 (Cronbach alpha), deferment of gratification scale, .89, (Cronbach alpha), personal values and expectancies, .88 (Cronbach alpha), social alienation, .87 (Cronbach alpha), and HIV and AIDS risk questionnaire, .90 (Cronbach alpha). The measuring instruments were found suitable for the purpose of the study (Hair et al., 2006). The content of the training programme was found suitable for the target population. Measuring instruments with items that were not suitable for the study sample were modified. The data collected in the pilot study were used to modify the measuring instruments and in refining the training programme before implementation.

4.6 Implementation of the training programme

The researcher implemented the training programme. Students were randomly assigned to small training groups and they were expected to keep their training groups until the end of the training programme. These groups were maintained for administrative reasons and to keep track of the training groups. The duration of the training programme was four sessions of two hours each on four consecutive weekends. The training sessions were held in the evenings on weekends. Students were trained in 15 small learning groups of about 17 students per session to allow for interactive learning. The researcher gave participants cards with locus of control-based principles that they used in their discussions and role plays about health risk reduction in the context of HIV and AIDS risk. The training cards had basic principles of social learning theory in reducing health risks associated with social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies and social alienation. Each card contained health risk reduction techniques for one variable. The groups exchanged the cards and the activities varied according to the group's creativity. Each presentation was related the locus of control-based principles of health risk reduction and this was discussed in the context of HIV and AIDS risk in South Africa. The researcher supervised the training programme and assisted where participants needed help. The researcher encouraged participants to assess the connection between the theoretical principles used to predict human behaviour and HIV and AIDS risk.

4.7 Evaluation of the training programme

Before the training began, baseline data on health risks associated with the locus of control-based variables and HIV and AIDS risk were collected from participants. The study collected pre-training scores on locus of control orientation, social systems control, self-control, fatalism, achievement-oriented behaviours, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk. After training, the same variables were tested one month after training and three months after training to assess the degree of learning and change in health behaviour as a result of the training. The efficacy of the training programme was evaluated by measuring the difference between baseline data (pre-training data) and post-training data (Agresti & Finlay, 2008). The difference between pre-training scores and post-training scores determined the efficacy of the training programme in reducing locus of control-related health risks and HIV and AIDS risk (Hair et al., 2006). If the participants' locus of control orientation improved towards internality it would then be assumed that the training programme contributed positively towards locus of control modification or a change in personality. The difference in psychological functioning before training and after training was evaluated using inferential statistics to determine the efficacy of the training programme in HIV and AIDS risk reduction (Cornuz et al., 2002; Gross, Fogg, & Tucker, 1995).

4.8 Participants and sampling

The study invited 300 first year undergraduate students who resided in the East Campus Cluster to participate in the study irrespective of their HIV and AIDS status. The residences were Men's Hall of Residence, Sunnyside Women's Hall of Residence and Jubilee Women's Hall of Residence. The rationale for recruiting participants irrespective of their HIV status was based on the fact that all the participants could benefit from the training programme. The training programme sought to reduce the risk of HIV infection for HIV negative participants and to reduce re-infection for HIV positive participants. Those who did not know their HIV status were expected to reduce health risks by engaging in HIV risk reducing behaviours. The study did not test participants for HIV and AIDS or ask them to disclose their HIV status as a precondition for participating in the study. This was an ethical requirement of the study to protect the psychological wellbeing of the participants throughout the study.

The study aimed to recruit resident male and female first-year students at the University of the Witwatersrand where the researcher was based. This group was targeted because it was the age group that was reported as worst affected by HIV and AIDS in the literature survey. The group was also a convenient sample. It was easy to recruit first-year students as participants because first-year classes at the university of the Witwatersrand were large. In addition, resident students could

participate in the training programme in the evenings at weekends as part of the University of the Witwatersrand's ongoing student development programme on personal health.

A total of (N = 257) students participated in the study. Participants who did not attend all the training sessions and those who did not complete all the questionnaires were excluded from the study. There were (N= 170) female participants and (N = 87) male participants. All the participants were Black and the mean age was 18 years. In South Africa "Black people" refers to Africans, Coloureds, Indians, and the Chinese. These were Indians, (N = 6), Coloureds, (N = 3) and Africans, (N =148). The age range of the sample was from 17 to 20 years. The study did not include or exclude participants on the basis of gender, colour, religion, race or any other forms of discrimination.

The study sample accommodated an attrition rate of 10 to 15% due to participant drop-out. The sample size including the attrition rate was considered to be adequate for the purpose and design of the study (Bollen & Long, 1993; Hair et al., 2006).

4.9 Procedure

When the Human Ethics Committee of Nelson Mandela Metropolitan University approved the research procedure of this study, permission to carry out the study with students as participants was sought from the Registrar of the University of the Witwatersrand. When permission was granted, posters were put on notice-boards of the University of the Witwatersrand East Campus Cluster Halls of Residence and dining halls inviting first year students to participate in the study. The purpose of the study was stated in the posters. The posters indicated that the research was investigating the efficacy of a locus of control of control-based training programme in reducing HIV and AIDS risk among students. The posters indicated that the responses that the prospective participants provided would be used in the design of a HIV and AIDS training programme for university students. The researcher explained to the potential participants the general requirements of the study. They were told that they were going to complete self-report questionnaires and to attend four training sessions of two hours duration each. Students were told that codes were going to be used for identifying participants and that no individual names were going appear on any part of the study.

4.10 Measuring instruments

Before the training sessions started, participants were administered the questionnaires to assess psychological functioning in relation to health risk reduction. At the end of the training programme participants were administered the same questionnaires to establish if the training programme had an

impact on behaviour change and HIV and AIDS risk reduction. The following questionnaires were administered:

4.10.1 The demographic questionnaire

Participants were asked to provide information about their age, gender, marital status, race, faculty, year of study, home province, home language, and nationality. These variables were considered to have an influence on locus of control and health control (Lefcourt, 1976; Phares, 1976). The study assessed the role played by these demographic variables in HIV and AIDS risk reduction. The demographic questionnaire is appended as Appendix A in the Appendices section of this study

4.10.2 Rotter`s locus of control scale

This instrument was developed by Rotter (1966) to measure an individual`s locus of control orientation. Individuals were categorised as ``internal`` or ``external`` but the internality-externality scale runs on a continuum (Rotter, 1990). Rotter`s scale is widely used in South Africa and internationally (Magwaza & Bhana, 1991). The scale has 23 items and scores below 12 points fell in the internal locus of control category and scores above 12 points indicated external locus of control orientation. It took about 10 minutes to complete the questionnaire.

4.10.3 Social systems control scale

The instrument was developed by Reid and Ware (1973) within the social learning theory to measure an individual`s ability to work on the environment to get the desired health outcomes. The test assessed the extent to which participants believed they could improve their health and that of others within the prevailing socio-political realm of South Africa. The questionnaire has 26 items that assess an individual`s perceptions of health control and influence over their social environment. The reliability coefficient of the questionnaire for this study was .89 (Cronbach alpha). The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. It took about 20 minutes to complete the questionnaire (Casper, 1990; Ong, 1994; Ross, Kalucy, & Morton, 1983).

4.10.4 Self-control scale

The self-control scale within locus of control research was developed by Reid and Ware (1974) to measure an individual`s impulsive behaviours, desires, and emotions in a health context. The instrument has 26 items and the reliability coefficient of the scale established in this study was .90

(Cronbach alpha). The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. It took about 20 minutes to complete the questionnaire.

4.10.5 Fatalism scale

The measuring instrument was developed by Reid and Ware (1973) within locus of control research to assess fatalistic ideas and attitudes of individuals about their personal health (Lefcourt 1976, Phares 1976). Beliefs about luck, fate, or fortune in health risk reduction were assessed (Reid & Ware, 1973). The instrument also assessed perceptions of ability, hard work, and personal responsibility in determining health outcomes (Reid & Ware, 1973). The instrument has 28 items. The reliability coefficient of the instrument established for the purpose of this study was .86 (Cronbach alpha). The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. It took about 20 minutes to complete the questionnaire.

4.10.6 Intellectual Achievement Responsibility Questionnaire

This questionnaire was developed by Crandall, Katkovsky and Crandall (1965) to measure participants` achievement-oriented behaviours and responsibilities (Lefcourt 1976, Phares 1976). It was used in this study to assess participants` perceptions of individual responsibility for health outcomes. The instrument has 68 items. The reliability coefficient of the instrument established for the purpose of this study was .90 (Cronbach alpha). The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. It took about 30 minutes to complete the questionnaire.

4.10.7 The Deferment of Gratification Scale

The instrument was developed by Ray and Najman (1986) to measure willingness to delay gratification in service of long-term more valuable rewards (Bembenutty & Karabenick, 1998; Bulwer, 2006; Hamilton-Attwell, 1998). The 20-item scale assessed inclination towards financial savings, impulse buying, planning and patience, waiting for future rewards, spending behaviours, and haste decisions in love relationships. The reliability coefficient of the instrument for the purpose of this study was .89. The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. It took about 10 minutes to complete the questionnaire.

4.10.8 Personal values and expectancies questionnaire

This questionnaire was developed by Lefcourt, Reid and Ware (1976) to assess an individual's reaction to threat and the degree to which an individual would fear losing valuable things in life. The instrument assesses whether or not an individual is concerned about their personal health and threats to life. The instrument assesses personal health values, ambitions, aspirations and fears of being hindered from achieving what an individual planned to achieve due to external forces such as ill health (Lefcourt, 1976). The instrument has 26 items. The questionnaire had a reliability coefficient of .88 (Cronbach alpha) in this study. The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. The scale took about 20 minutes to complete.

4.10.9 Dean's Alienation Scale

This questionnaire was developed by Dean (1969) to assess an individual's perceptions of social alienation. It was used in this study to assess levels of health alienation in individuals. The scale assesses an individual's level of perceived powerlessness, normlessness, and perceptions of isolation or loneliness in relation to health control (Shoho, Katims & Wilks, 1997). Perceptions of alienation in health control could be associated with health risk behaviours (Flisher, Evans, Muller, & Lombard, 2004; Ward, Flisher, Zissis, Muller & Lombard, 2001). The questionnaire is used in South Africa and abroad (Huschka & Mau, 2006). The questionnaire had a reliability coefficient of .87 (Cronbach alpha) in this study. The questionnaire has 24 items. The items of the questionnaire were put on a 5-point Likert-type scale in which ``1`` indicated low score and ``5`` high score on a continuum. The scale took about 15 minutes to complete.

4.10.10 Human Sciences Research Council (HSRC) AIDS KAPB Questionnaire

The questionnaire was developed by du Plessis et al. (1993) to measure HIV and AIDS risk. It assesses an individual's knowledge, attitudes, perceptions, beliefs and practices in relation to HIV and AIDS. The HSRC questionnaire was developed in South Africa and was used in a South African national HIV and AIDS survey (du Plessis et al., 1993). The questionnaire was developed and standardised by researchers from the Human Sciences Research Council, (HSRC), representatives from HIV and AIDS organisations and consultants from the University of Pretoria and University of South Africa. The questionnaire is based on the KABP (Knowledge, attitude, beliefs, and practices) methodology of assessing HIV and AIDS risk and it is widely used and referred to in South Africa (Kalichman, et al., 2006; Shisana & Simbayi, 2002; Simbayi, et al., 2006). Participants in this study were not tested for their HIV status and neither was it the purpose of this study. Although the original scale had 100 items, this study used 66 items to assess HIV and AIDS risk among participants. Items

that required basic and dated information about HIV and AIDS were removed. They were discarded and considered as not suitable for university students. The reliability coefficient of the questionnaire for this study was .90. It took about 30 minutes to complete.

It is important to note that participant fatigue was monitored during the administration of the research instruments. The researcher provided refreshments and 15 minute breaks were granted to participants to allow them to relax in case of difficulties.

4.11 Data Analysis

All the participants were given an identification code that they kept throughout the training duration. The scores of each participant were kept under that code. The code of each participant showed scores before training, scores taken one month after training and scores taken three months after training. The variables assessed were: locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk. Data were analysed using *t* tests to establish the difference in health risk according to personality among the participants. Pearson's product moment correlation test was used to establish correlational relationships between locus of control-based variables and HIV and AIDS risk. The study performed multiple regression analysis to investigate the usefulness of the factors that made up the locus of control-based training programme in predicting HIV and AIDS risk. Structural equation modelling was performed on data collected before training to determine the goodness of fit of the the locus of control-based variables in building training models that could be used in HIV and AIDS risk reduction training. The study tested the data obtained after training for homogeneity of variance using Levene's test of homogeneity of variance. This test helped to establish if repeated measures ANOVA could be used in analysing the data. Friedman's test for repeated measures was used to assess the statistical significance of the variation in health risk and HIV and AIDS risk across the three months of the training programme. Variation in scores between the phases of the training programme was analysed using Tamhane post hoc test. Multivariate tests were used to assess the impact of demographic variables on health risk and HIV and AIDS risk across the three phases of the training programme. Statistical Analysis Software (SAS) was used to run *t* tests, correlations, multiple regression and structural equation modelling. The statistical package for social sciences (SPSS) was run to investigate variance in health risk scores after training.

4.12 Limitations of the pre-test and post-test research design

The pre-test and post-test design has problems relating to errors of measurement associated with repeated measures. The internal validity of the study could be affected by testwiseness, participant boredom and negative events that happen between testing periods (Howitt, 2008). Although repeated measures with longer time lapses would have been desirable, these would not be feasible as part of a doctoral study. The time frames of one month and three months after training were deemed appropriate for the purpose of this study. Longitudinal studies with longer time lags on the relationship between locus of control-based risk factors and HIV and AIDS risk could be pursued at a later stage as part of postdoctoral research.

4.13 Ethical considerations

Ethics clearance was sought from the Human Ethics Committee of Nelson Mandela Metropolitan University. The researcher collected data upon receiving permission from the Registrar of the University of the Witwatersrand where the research was conducted. The research procedures abided by the international standards for carrying out research with human subjects (Mouton, 2001). Issues such as protection of participants, confidentiality, anonymity, privacy, and informed consent were strictly observed in this study. Participation in this study was voluntary and students were free to withdraw from the study without any negative consequences. The prospective participants were assured that anonymity and confidentiality would be maintained. Each participant was allocated a code and no names were required.

Participants were not asked about their HIV and AIDS status. All proceedings of the study were kept confidential. They were told that the findings of this study were not reported according to individual performance. Group results would be reported in form of a doctoral thesis that is accessible through the Nelson Mandela Metropolitan University library. Some of the findings of the study would be sent to journals for peer review and publication. As a way of maintaining confidentiality and the right to anonymity, the names of participants would not appear on any part of the report. Participants were told that they were free to withdraw from the study at any time and that all proceedings were confidential. Participants were told that there was no right or wrong answer.

4.14 Conclusion

This chapter has described the methodology employed in the collection and analysis of data. It has included a description of the setting, research design, development of the training programme, piloting the training programme, implementation of the training programme, evaluation of the training programme, participants, sampling, procedure, measuring instruments, data analysis, limitations of pretest and posttest research design and ethical considerations. The next chapter focuses on the results of the study.

CHAPTER 5

RESULTS

5.1 Introduction

This chapter describes the results of the statistical analyses that were performed to answer the research question of this study. The aim of the study was to develop, implement, and evaluate a locus of control-based training programme for HIV and AIDS risk reduction among university students at the University of the Witwatersrand. A description of the development, implementation, and evaluation of the training programme has been presented in chapter 4 of this study. A summary of results obtained in this study is presented in this chapter.

The results of the study are presented as follows: the demographic characteristics of the study sample, comparison of baseline data between participants with an external locus of control and participants with an internal locus of control before training, correlation between locus of control-based factors and HIV and AIDS risk before training, use of multiple regression on baseline data to predict HIV and AIDS risk using locus of control-based factors, use of structural equation modelling on baseline data to show the relationship between locus of control-based variables and HIV and AIDS risk, and the last section of this chapter looks at the evaluation of the locus of control-based training programme in reducing locus of control-based health risks and HIV and AIDS risk among university students. The evaluation was done using repeated measures tests, multivariate tests and *t* tests to assess the efficacy of the training programme in modifying personality, reducing locus of control-based health risks and HIV and AIDS risk.

5.2 Demographic characteristics of the study sample

Demographic information was obtained from the demographic questionnaire that participants completed. Information provided related to gender, marital status, race, faculty in which the student was registered, nationality, province, and home language. The demographic information is represented in Table 2 below:

Table 2: Demographic information

Gender	Frequency	Population group	Frequency
Female	67%	Africans:	97%
Male	33%	Indians:	2%
		Coloureds:	1%
		White	0
Married	0		
Faculties	Frequency	South African provinces	Frequency
Commerce, Law and Management	64%	Limpopo	16%
Engineering and the Built Environmet	5%	Mpumalanga	16%
Health Sciences	3%	Gauteng	11%
Humanities	22%	North West	14%
Science	6%	Western Cape	2%
		Eastern Cape	38%
		Northern Cape	4%
		KwaZulu Natal	17%
		The Free State	5%
International students	6%		
South African home languages spoken	Frequency	University Halls of Residence	Frequency
Nguni languages	97%	Men` s Hall of Residence	34%
English	2%	Jubilee Women` s Hall of Residenc	38%
Afrikaans	1%	Sunnyside Women` s Hall of Residence	28%
Age range	Frequency	Age range	Frequency
17 years old	17%	19 years old	26%
18 years old	54%	20 years old	3%
Total Number of participants	257		

5.3 Health risk according to personality before training

The locus of control-based risk factors were assessed before training. High scores indicated health risks as represented in Figures 1 to 7. In Figures 1 to 7, high risk scores on locus of control-based variable are represented as ``personality 1`` (external locus of control) and less risk health scores are represented as ``personality 0`` (internal locus of control). The locus of control-based variables represented in Figures 1 to 7 are social systems control, self-control, fatalism, deferment of gratification, personal values and expectancies, and social alienation. There were 133 participants with an external locus of control (51.75%) and 124 participants with an internal locus of control (48.25%) in this study sample.

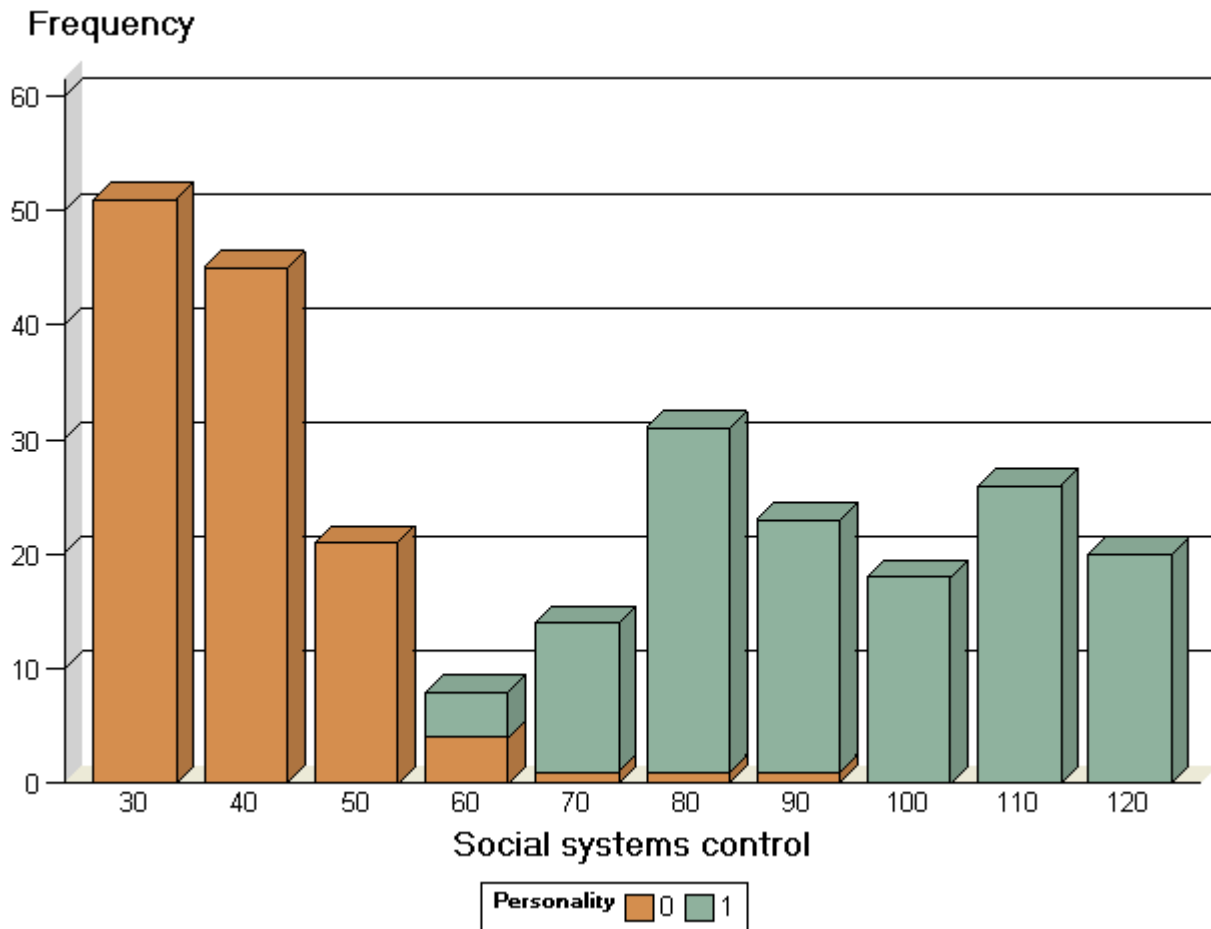


Figure 1: Social systems control health risk pattern

On the measure of social systems control, as seen in Figure 1, there were 4 participants (about 3%) from the high risk group who showed less health risks. There were 3 participants (about 2%) from the less risk group who showed health risk scores on the measure of social systems control in health matters.

On self-control, there were 4 participants (about 3%) from the high risk group who showed less risk health scores and there were no participants from the less risk group who showed risk scores as represented in Figure 2.

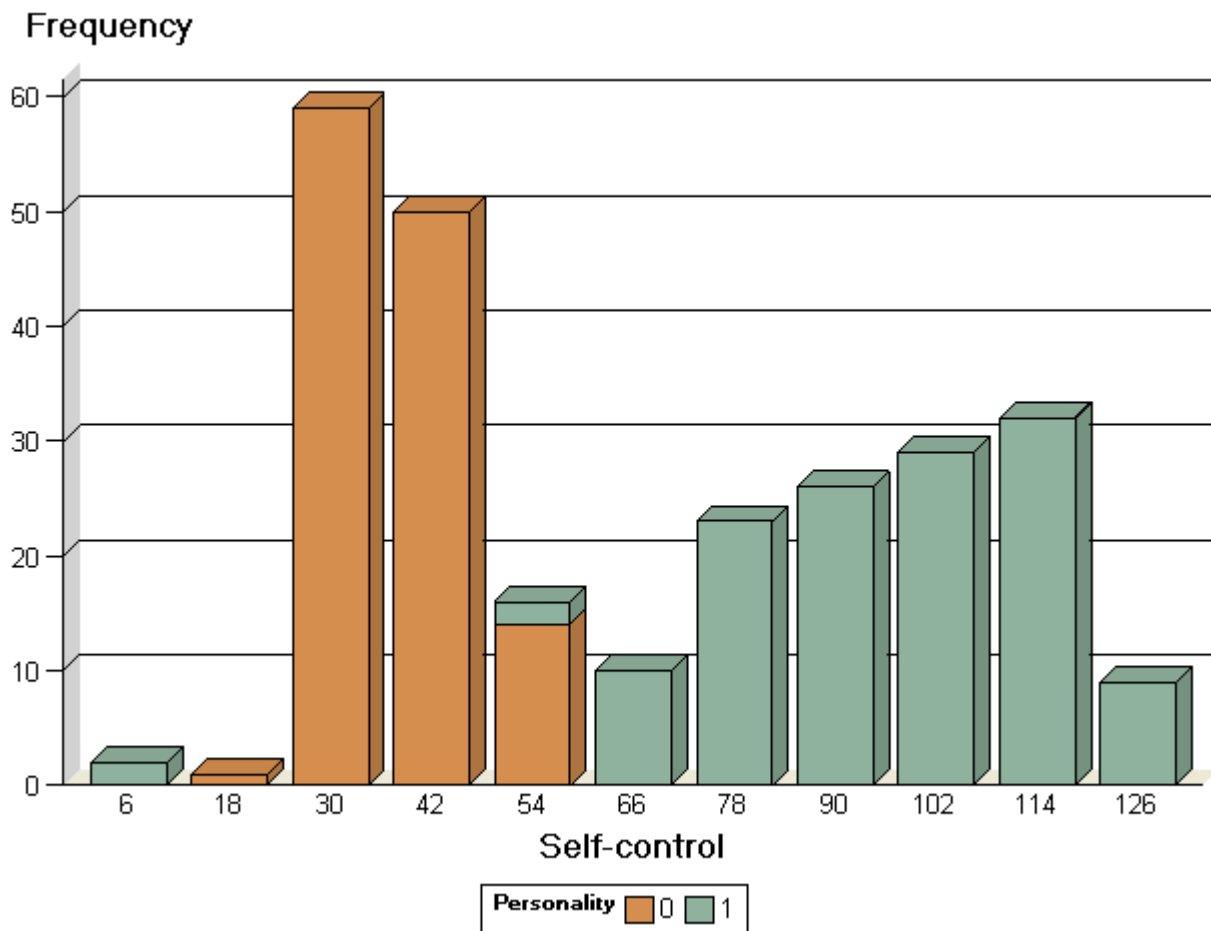


Figure 2: Self-control health risk pattern

There were 2 participants (about 2%) with an external locus of control who showed less health risk scores on the measure of fatalism. There were no participants with an internal locus of control who showed health risk on the measure of fatalism as represented in Figure 3.

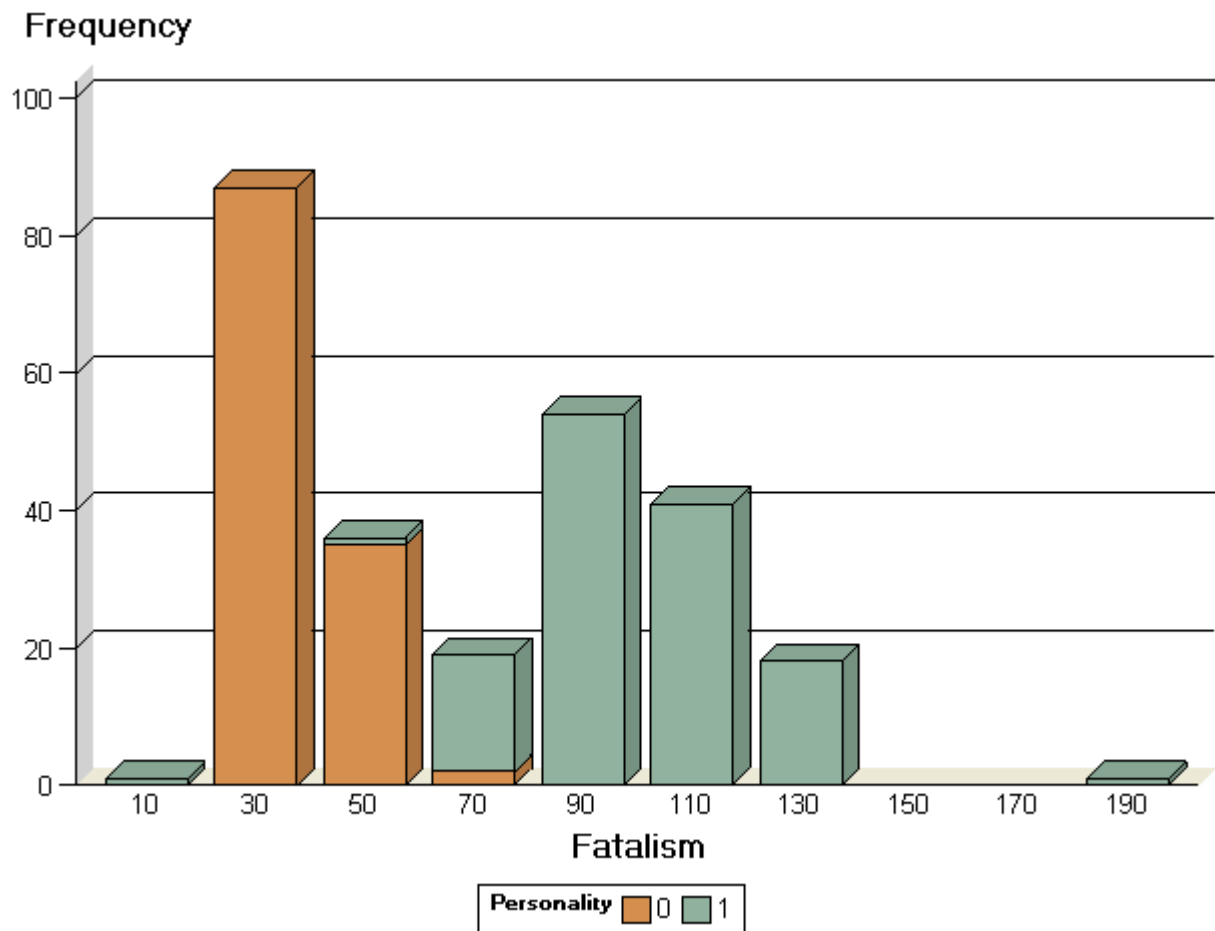


Figure 3: Fatalism health risk pattern

On measures of achievement-oriented behaviours, there were 14 participants (about 11%) with an external locus of control who showed less risk health scores. Among participants with an internal locus of control, 2 participants (about 2%) showed health risk behaviours on the achievement-oriented measure as seen in Figure 8.

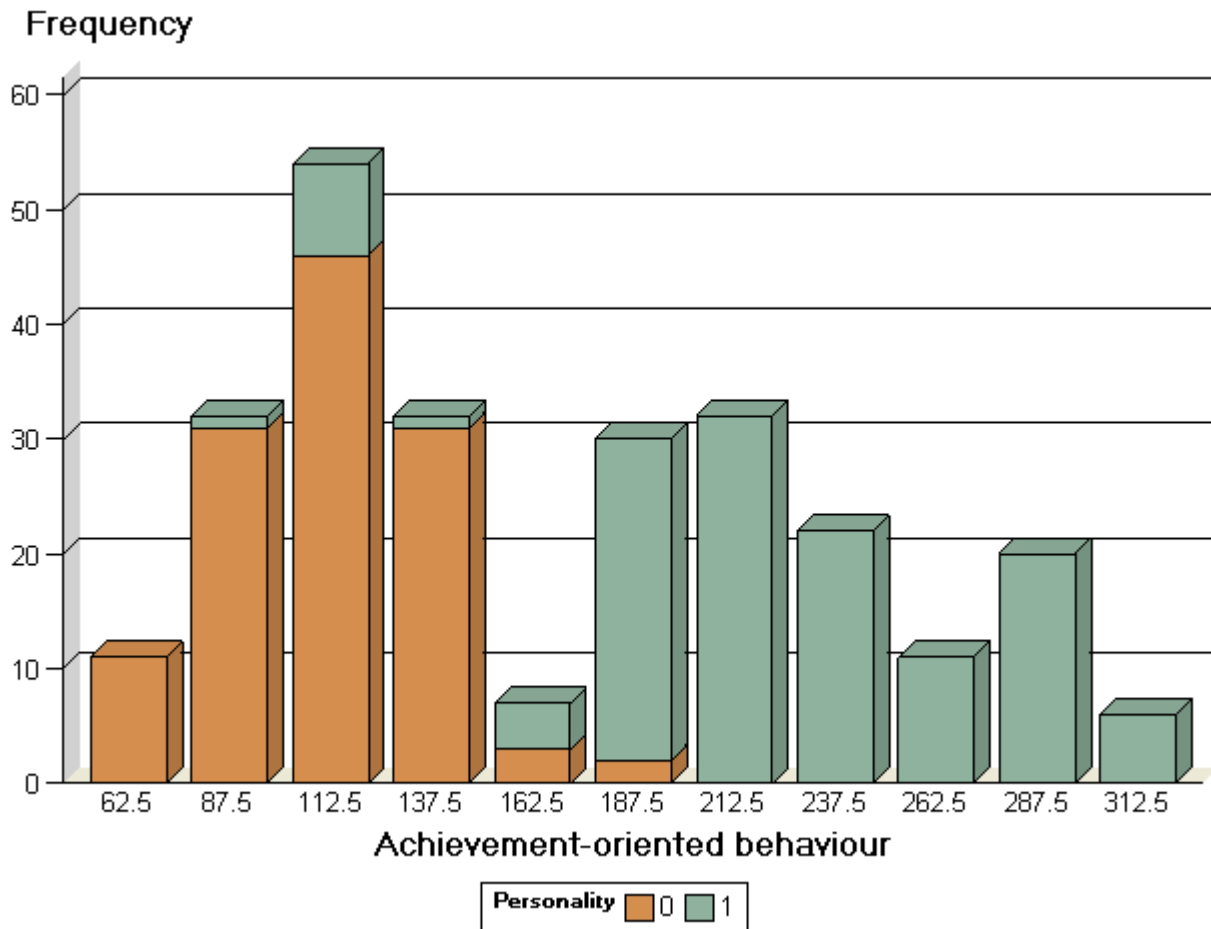


Figure 4: Achievement-oriented behaviour health risk pattern

There were 7 participants with an external locus of control (about 5%) who showed less risk health behaviours on the measure of deferment of gratification. There was 1 participant with an internal locus of control who showed health risk scores on the measure of deferment of gratification as seen in Figure 5.

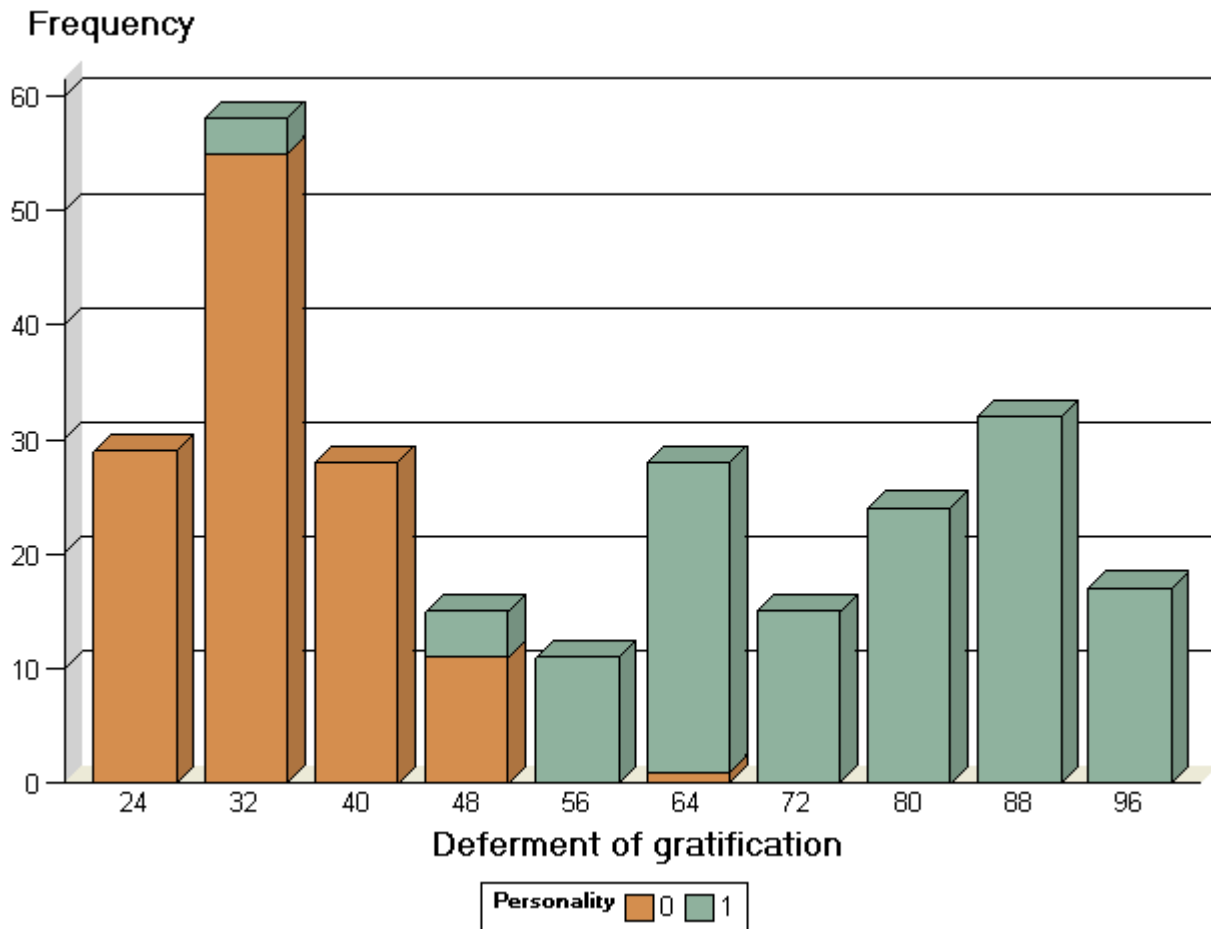


Figure 5: Deferment of gratification health risk pattern

On personal values and expectancies, there were 10 participants with an external locus of control (about 8%) who showed less health risk behaviours. Their scores did not show health risks. Those with an internal locus of control did not show health risks on the measure of personal values and expectancies as represented in Figure 6.

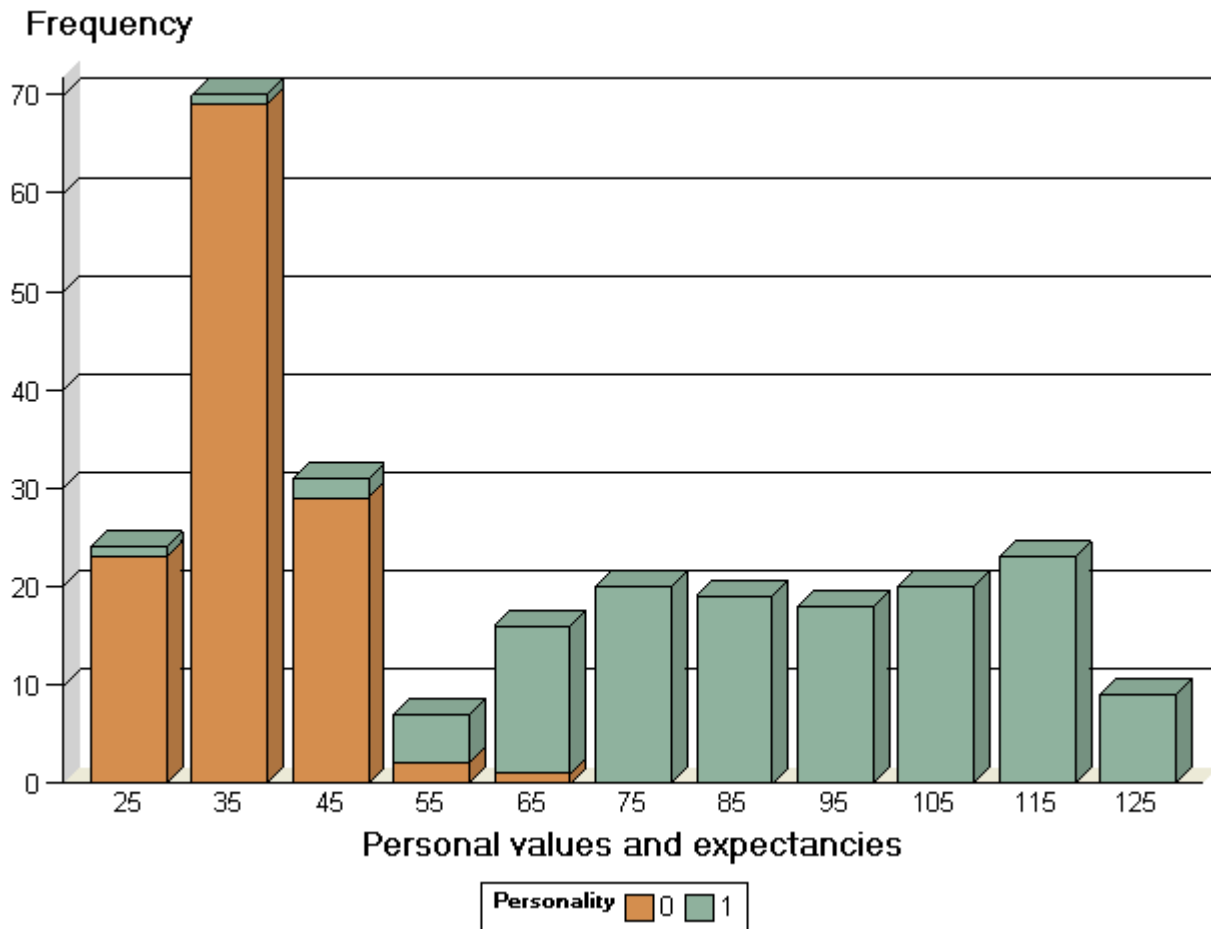


Figure 6: Personal values and expectancies health risk pattern

On measures of social alienation, about 2% of the students with an external locus of control showed less health risks and none of the students with an internal locus of control showed health risk behaviours on social alienation measures as seen in Figure 7.

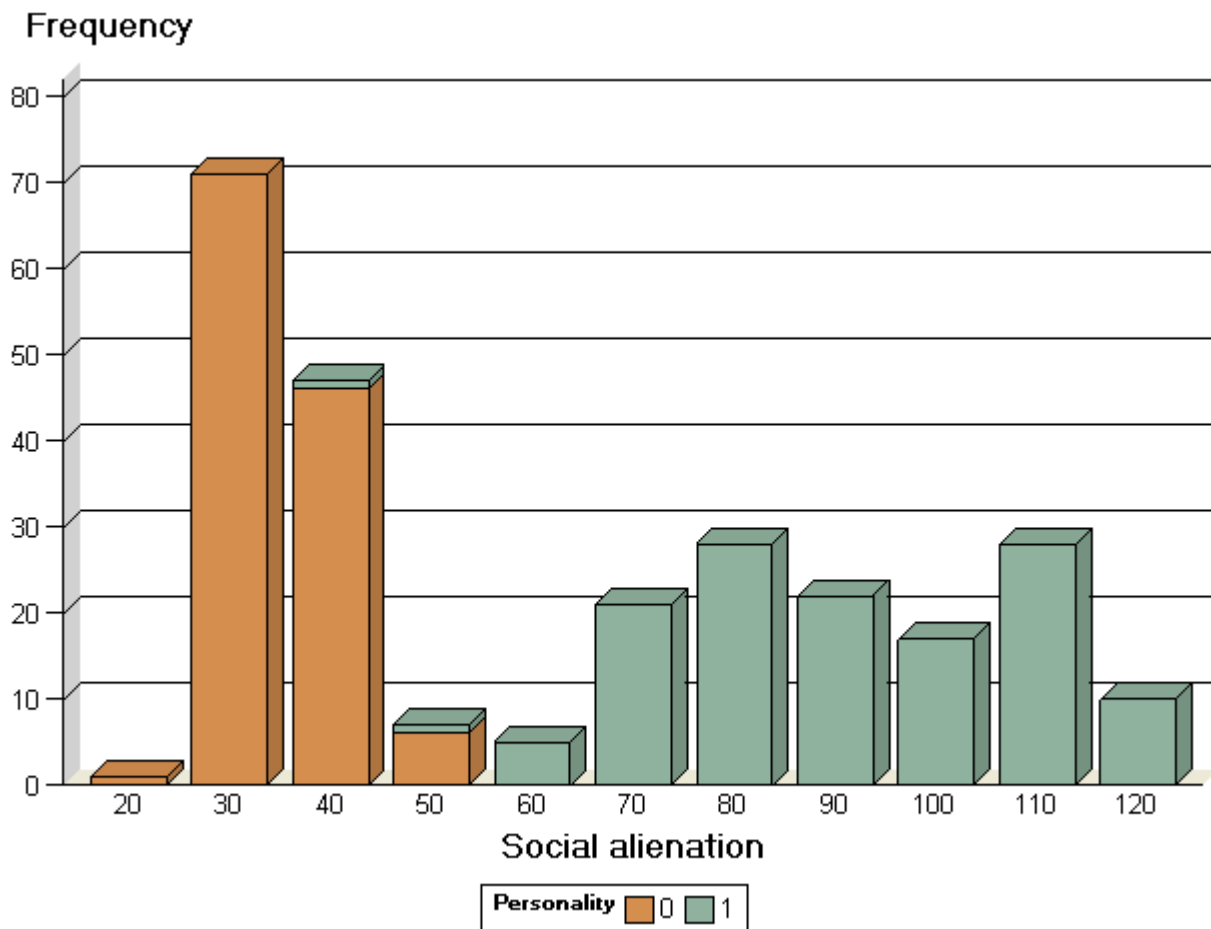


Figure 7: Social alienation health risk pattern

When scores of participants on Rotter`s locus of control scale were analysed, participants were categorised as either ``external`` or `internal `` in locus of control. The scores of participants with an external locus of control and participants with an internal locus of control on measures of social systems control, self-control, fatalism, achievement-oriented behaviours, deferment of gratification, personal values and expectancies, and social alienation indicated that participants with an external locus of control showed more health risk profiles than participants with an internal locus of control. Even if some of the participants with an internal locus of control provided responses that indicated health risks on the locus of control-based measures, their responses tended to show less health risks as shown by the bar charts.

5.4 Means and standard deviations of the study sample before training

The means and standard deviations of the study sample are represented in Table 3 below.

Table 3: Means and standard deviations before training

Variable	Number of participants	Mean	Standard deviation
Age	257	18.13	.83
Locus of control	257	11.68	5.72
Social systems control	257	67.67	31.11
Self-control	257	66.84	32.54
Fatalism	257	67.63	33.60
Achievement-oriented behaviour	257	167.48	68.05
Deferment of gratification	257	54.83	24.47
Personal values and expectancies	257	63.77	31.95
Social alienation	257	63.45	31.06
HIV and AIDS risk	257	31.81	19.93

The means indicated that all the participants fell in the 15 to 24 age group that is described as a group at risk of HIV infection in the literature review. The locus of control mean indicated that the group as a whole fell in the ``internal locus of control`` category since their mean was below 12 points. The group`s mean on social systems control was in the health risk category since the mean was above the cut-off point of 65 points. On self-control, the group`s mean was in the health risk category. It was above 65 points which indicated health risk. The group`s mean on fatalism indicated less health risk because their score was below 70 points. The group`s mean on achievement-oriented behaviours

indicated less health risk as it was below 170 points. The mean on deferment of gratification indicated health risk since it was above 50 points. The group's mean on personal values and expectancies indicated less health risk because the mean was below the cut-off point of 65 points. On the measure of social alienation, the group's mean fell in the health risk category since their mean was above 60 points. The group's mean on HIV and AIDS risk did not indicate health risk. The group's mean did not show HIV and AIDS risk since the mean fell below the cut-off point of 33 points.

The group's mean indicated an internal locus of control which is associated with less health risks in the literature review. The group's mean on HIV and AIDS risk indicated less HIV and AIDS risk. The results indicated that the group as a whole had a healthy mean on HIV and AIDS risk. Healthy means for the group were also indicated on measures of fatalism, achievement-oriented behaviour, and personal values and expectancies. However, the group had means that indicated health risks on measures of social system control, self-control, social alienation and deferment of gratification. The means on their own cannot be used to predict or analyse health risks without performing inferential statistics. The group as a whole generally showed health profiles without splitting the group's psychological health profile according to externality and internality.

5.5 Comparison of health risks according to personality before training

The study divided the group scores according to personality in order to investigate the statistical significance of the difference in health risks between participants with an external locus of control and participants with an internal locus of control before training as seen in Table 4.

In order to test the main hypothesis that the locus of control-based training programme would demonstrate significant differences in health risk between participants with an external locus of control and participants with an internal locus of control, the following specific hypotheses were tested against the main hypothesis:

1. There is no difference in social systems control between participants with an external locus of control and participants with an internal locus of control.
2. There is no difference in self-control between participants with an external locus of control and participants with an internal locus of control.
3. There is no difference in fatalism between participants with an external locus of control and participants with an internal locus of control.

4. There is no difference in achievement-oriented behaviour between participants with an external locus of control and participants with an internal locus of control.
5. There is no difference in deferment of gratification between participants with an external locus of control and participants with an internal locus of control.
6. There is no difference in personal values and expectancies between participants with an external locus of control and participants with an internal locus of control.
7. There is no difference in social alienation between participants with an external locus of control and participants with an internal locus of control.
8. There is no difference in HIV and AIDS risk between participants with an external locus of control and participants with an internal locus of control.

Table 4: Comparison of health risk means according to personality before training

	External locus of control	Internal locus of control	<i>t</i> Value	<i>p</i>
Variable	Mean and standard deviation	Mean and standard deviation		
Locus of control	16.46 (3.28)	6.55 (2.32)	27.75	.01*
Social systems control	94.50 (16.87)	38.90 (9.79)	32	.01*
Self-control	94.38 (20.63)	37.30 (6.88)	29.33	.01*
Fatalism	96.16 (20.86)	37.04 (7.71)	29.71	.01*
Achievement-oriented behaviour	221.24 (48.97)	109.81 (24.17)	22.87	.01*
Deferment of gratification	75.44 (14.77)	32.73 (7.79)	28.69	.01*
Personal values and expectancies	90.44 (21.30)	35.17 (6.61)	27.67	.01*
Social alienation	90.51 (17.62)	34.43 (5.96)	33.79	.01*
HIV and AIDS risk	46.96 (11.25)	15.56 (13.16)	20.50	.01*

* $P < .01$

The difference in health risk between participants with an external locus of control and participants with an internal locus of control was significant in this study. The difference in locus of control between the two groups was statistically significant ($t(255) = 27.75, p < .01$). Statistically significant differences were found on measures of social systems of control ($t(255) = 32, p < .01$), self-control, ($t(255) = 29.33, p < .01$), fatalism, ($t(255) = 29.71, p < .01$), achievement-oriented behaviour, ($t(255) = 22.87, p < .01$), deferment of gratification, ($t(255) = 28.69, p < .01$), personal values and expectancies, ($t(255) = 27.67, p < .01$), social alienation, ($t(255) = 33.79, p < .01$) and HIV and AIDS risk ($t(255) = 20.50, p < .01$).

The results indicated significant differences in health risks between participants with an external locus of control and participants with an internal locus of control before training. It should be noted that even though some of the participants with an external locus of control showed less health risk behaviours in some instances, as a group their scores showed health risks. The difference in psychological functioning between the two groups indicated the influence of personality on health risk. The two groups differed in their perceptions of internal and external control of reinforcement in health promotion and health risk reduction.

5.6 Correlations of locus of control-based variables and HIV and AIDS risk before training.

The study assessed the relationship between locus of control-based variables and HIV and AIDS risk before training as represented in Table 5.

In order to test the main hypothesis that the locus of control-based training programme would demonstrate significant correlations between locus of control-based variables and HIV and AIDS risk, the following specific hypotheses were tested:

1. There is no relationship between locus of control and HIV and AIDS risk?
2. There is no relationship between social systems control and HIV and AIDS risk?
3. There is no relationship between self-control and HIV and AIDS risk?
4. There is no relationship between fatalism and HIV and AIDS risk?
5. There is no relationship between achievement-oriented behaviour and HIV and AIDS risk?
6. There is no relationship between deferment of gratification and HIV and AIDS risk?
7. There is no relationship between personal values and expectancies and HIV and AIDS risk?

8. There is no relationship between social alienation and HIV and AIDS risk?

Table 5: Correlation between locus of control-based variables and HIV and AIDS risk before training

Variable	Number	Mean	Standard deviation	Correlation with HIV and AIDS risk	<i>p value</i>
Locus of control	257	11.68	5.72	.81*	.01*
Social systems control	257	67.67	31.11	.80*	.01*
Self-control	257	66.84	32.54	.77*	.01*
fatalism	257	67.63	33.60	.74*	.01*
Achievement-oriented behaviour	257	167.48	68.05	.63*	.01*
Deferment of gratification	257	54.83	24.47	.81*	.01*
Personal values and expectancies	257	63.77	31.95	.84*	.01*
Social alienation	257	63.45	31.06	.81*	.01*

* $P < .01$

The group means of locus of control-based variables correlated positively with HIV and AIDS risk. The correlations were statistically significant. Locus of control had a significant correlation ($r(255) =$

.81, $p < .01$, social systems control, $r(255) = .80$, $p < .01$, self-control, $r(255) = .77$, $p < .01$, fatalism, $r(255) = .74$, $p < .01$, achievement-oriented behaviour, $r(255) = .63$, $p < .01$, deferment of gratification, $r(255) = .81$, $p < .01$, personal values and expectancies, $r(255) = .84$, $p < .01$, and social alienation, $r(255) = .81$, $p < .01$). The results indicated that an increase in locus of control-based risks was associated with an increase in HIV and AIDS risk.

However, the results of the cross-sectional study did not imply causal relationships between locus of control-based variables and HIV and AIDS risk. Correlational relationships do not imply ``cause and effect`` relationships between variables. The results do not mean that locus of control causes HIV and AIDS risk.

5.7 Multiple regression analysis

The cross-sectional data were analysed further using multiple regression to predict the relationship between locus of control-based variables and HIV and AIDS risk. The locus of control-based variables were expected to affect HIV and AIDS risk. Multiple regression can be used in predicting health risks and it can be used in decision-making processes (Hair et al., 2006). It was used to analyse the relationship between locus of control-based variables and HIV and AIDS risk in this study. The locus of control-based variables used in the analysis were social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation as represented in Table 6 below.

In order to test the main hypothesis that the locus of control-based training programme would demonstrate significant prediction of the variation in HIV and AIDS risk scores, the following specific hypotheses were tested:

1. Locus of control does not predict any of the variation in HIV and AIDS risk.
2. Social systems control does not predict any of the variation in HIV and AIDS risk.
3. Self-control does not predict any of the variation in HIV and AIDS risk.
4. Fatalism does not predict any of the variation in HIV and AIDS risk.
5. Achievement-oriented behaviour does not predict any of the variation in HIV and AIDS risk.
6. Deferment of gratification does not predict any of the variation in HIV and AIDS risk.
7. Personal values and expectancies do not predict any of the variation in HIV and AIDS risk.

8. Social alienation does not predict any of the variation in HIV and AIDS risk.

Table 6: Linear regression model for dependent variable HIV and AIDS risk before training

Variable	β Coefficient	Standard error	<i>t</i> value	<i>p</i> value
Locus of control	1.07	.23	4.72	.01*
Social systems control	.12	.06	2.00	.05*
Self-control	.03	.05	.65	NS
fatalism	.02	.05	.37	NS
Achievement-oriented behaviour	.05	.02	2.94	.01*
Deferment of gratification	.17	.06	2.87	.01*
Personal values and expectancies	.21	.06	3.64	.01*
Social alienation	.03	.07	0.36	NS

* $P < .01$

* $P < .05$

The results showed that locus of control significantly predicted HIV and AIDS risk scores, $\beta = 1.07$, $t(248) = 4.72$, $p < .01$. The relationship between locus of control and HIV and AIDS risk was statistically significant. Social systems control significantly predicted HIV and AIDS risk scores $\beta =$

.12, $t(248) = 2.00$, $p < .05$. Achievement-oriented behaviour significantly predicted HIV and AIDS risk scores $\beta = .05$, $t(248) = 2.91$, $p < .01$. Deferment of gratification significantly predicted HIV and AIDS risk scores, $\beta = .17$, $t(248) = 2.87$, $p < .01$ and personal values and expectancies significantly predicted HIV and AIDS risk scores, $\beta = .21$, $t(248) = 3.64$, $p < .01$. However, the results indicated that self-control, fatalism, and social alienation did not predict significant HIV and AIDS risk scores.

Analysis of variance (ANOVA) indicated that the locus of control-based variables, taken together, were significantly associated with HIV and AIDS risk. The relationship was statistically significant ($F(8, 248) = 97.50$, $p < .01$). The locus of control-based variables, taken together, accounted for 75% variance in HIV and AIDS risk ($R^2 \text{ adj.} = .75$).

Multiple regression results showed that locus of control, social systems control, achievement-oriented behaviour, deferment of gratification, and personal values and expectancies were each significantly associated with HIV and AIDS risk. However, self-control, fatalism, and social alienation were not even though the variables had a positive correlation with HIV and AIDS risk in this study. This lack of statistical significance could be attributable to multicollinearity. Some of the locus of control-based variables could have been correlated. Correlated variables become redundant in the model. Multicollinearity was further investigated in the next section of this study. This situation is common in regression analysis because some independent variables tend to have similar characteristics (Hair et al., 2006). Even though the locus of control-based training programme had variables that showed an overall significant effect on HIV and AIDS risk, the results should still be interpreted as correlational and not causal in nature. The multiple regression results on cross-sectional data only indicated strong associations between locus of control-based factors and HIV and AIDS risk. Health promoters could predict HIV and AIDS risk in a training group by looking at the strength of association between locus of control-based variables and HIV and AIDS risk.

5.8 Structural equation modelling on data obtained before training

Structural equation modelling enriches multiple regression analysis in that it is more powerful in analysing relationships among a number of variables. Structural equation modelling looks at latent variable models that represent unidimensional concepts in their purest form and summarises the relationships between the latent variables (Bollen, 1989). Latent variables are similar to concepts; they are hypothetical. Locus of control is a construct that is indirectly measured using scales that are deemed to tap the latent variable. Structural equation modelling also looks at observed variables or manifest variables that have a relationship with the latent variables they measure. Structural equation modelling is used in testing theory-based training models. The researcher is expected to formulate a

training model that is based on a theory. The researcher would then identify parts of the model and adopt estimation techniques that are similar to existing models that measure the same construct. The goodness of fit of the model is tested against data gathered. If the model does not fit with the data then a respecification of the model is done thus generating various models until the best fitting model is found (Bollen & Long, 1993). Structural equation modelling goes further than multiple regression or intercorrelations in that whereas correlational techniques emphasise linear relationships or associations between variables, structural equation modeling techniques make causal inferences between and among the variables.

Structural equation modelling was performed on baseline data in this study in order to explain further the relationships between locus of control-based factors and HIV and AIDS risk. Structural equation modelling helps the researcher identify various models that can be used in a health training programme by combining various factors to get the best model that could be effective in reducing health risks. In structural equation modelling, the researcher or health trainer will end up with various models generated from the theory they are using and the challenge is to select the model with the best fit in predicting health risk. The most suitable model with highly predictive factors is then selected in training programmes to reduce health risks. Structural equation modelling in this study explored four models that were generated during data analysis.

5.8.1 Model elements

The locus of control-based model was developed to explain variation in HIV and AIDS risk using the following variables: locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation. There was a specific focus on locus of control as the antecedent variable which was broadly proposed to underlie the effect of the other variables on HIV and AIDS risk. The four models presented below were derived from an exploratory approach, as no a priori criterion was set, other than the use of locus of control as an underlying variable.

5.8.2 Initial structural equation modeling assumptions

Structural equation modelling (SEM) assumptions that had to be met for standard use of maximum likelihood estimation included sufficiently low levels of multivariate kurtosis, multicollinearity and heteroscedasticity, as well as linearity and sufficient outlier control. In addition, for this study to use path analysis, sufficient discriminant validity must exist for the manifest variables to be treated as separate entities (Kline, 2005). Each of these was evaluated as follows in this study: kurtosis was estimated using Mardia's multivariate kurtosis measures. Initial multivariate kurtosis was fairly high

(25), largely due to the presence of several multivariate outliers, which were removed to provide adequately low levels of non-normality. In addition, the model was bootstrapped to account for any further minor biases.

Kline (2005) suggests that the first step in a path analysis is to confirm through confirmatory factor analysis that the various manifest variables do not, in fact, fit into a single-factor latent variable model. Should they do so, then the model is inadequate for path analysis, since the various manifest variables are actually all related to each other through inter-relationship to a single latent variable. This can therefore be seen as a test of holistic collinearity. Applying this test in this study gave a single-factor confirmatory factor analysis model with poor fit, including Chi-Square 149.96(27) $p < .0001$, RMSEA 0.1352 (90% CI = 0.1146-0.1568), CFI 0.965, NNFI 0.954. This suggested that a multi-construct model was probably better than a single construct model, thus supporting the use of path analysis.

However, parts of the model may still not have discriminant validity. This was initially assessed through tests of multicollinearity using correlational analysis. Table 7 below shows the manifest variable correlations which are substantially high and possibly indicative of collinearity. Further analysis found large variation inflation factor (VIF) and condition indices scores for social systems control, self control and social alienation. Proportion of variation breakdown suggested that self-control and social alienation were potentially collinear with an extremely high correlation of .92 as seen in Table 7. Possible remedies were to remove one of the collinear variables, apply latent variable modelling should they theoretically be feasible manifest indicators of the same underlying factor, or to combine the variables.

Table 7: Correlation matrix and simple descriptive statistics

Variable	1	2	3	4	5	6	7	8	9
1. HIV/AIDS risk	1.00								
2. Locus of control	.81	1.00							
3. Social systems control	.80	.83	1.00						
4. Self-control	.77	.80	.90	1.00					
5. Fatalism	.74	.79	.89	.86	1.00				
6. Achievement-oriented behaviour	.63	.73	.82	.78	.82	1.00			
7. Deferment of gratification	.81	.81	.86	.85	.81	.72	1.00		
8. Personal values and expectancies	.84	.86	.88	.88	.83	.76	.88	1.00	
9. Social alienation	.81	.84	.92	.92	.87	.79	.89	.92	1.00

All correlations are significant at $p < .01$

After accounting for multicollinearity other assumptions appeared to be met. Accordingly, the analysis proceeded to structural equation modeling.

5.9 Models without a latent factor

Dealing with collinearity of self-control and social alienation in this study involved eliminating or combining these variables into a single variable. The latter was done first: self-control and social alienation were combined, leading to a path model.

The first model (Model 1) tested was one in which locus of control was a universal variable underlying the relationships between all the other predictors of HIV and AIDS risk without other inter-relationships between the other variables. In other words, Model 1, as seen in Table 8, proposes that locus of control affects HIV and AIDS risk through the mediating influences of the other variables. Figure 8 shows this model, and Table 8 shows the fit indices for the structural equation model. As can be seen in Table 8, model 1 showed bad fit indices for the structural equation model. Model 1 had an unacceptable poor fit. It was therefore rejected.

Table 8: Fit indices for path models with latent variable

	Model 1 (Unrelated mediators, no latent factor)	Model 2 (Interrelated mediators, no latent factor)	Model 3 (Unrelated mediators with latent factor)	Model 4 (Interrelated mediators with latent factor)
Chi-square	896.03(16) [†]	22.51(11)	577.18(23) [†]	48.51(17)
	.470	.065	.311	.086
RMSEA	(CI = .444-.496)	(CI = .025-.103)	(CI = .289-.333)	(CI = .058-.115)
CFI	.697	.996	.843	.991
NNFI	.469	.983	.755	.981
AIC	864.03	.51	531.18	14.51
CAIC	791.69	-49.23	427.19	-62.36
SBC	807.69	-38.23	450.19	-45.36

A second option in exploratory modelling was to investigate the possibility that the mediators between locus of control and HIV and AIDS risk were themselves inter-related in complex ways. An

investigation of paths found that acceptable fit could be achieved with various respecifications based on Lagrange multipliers for various paths. This was possible when locus of control was retained as the predominant antecedent variable and HIV and AIDS risk treated as the ultimate outcome.

The best fit path model (Model 2) as seen in Table 8 was chosen on the principles that it retained the broad variable structure of the influence of locus of control and mediator variables on HIV and AIDS risk and that the model followed the parsimony principle that having fewer paths is better (Bolen, 1989; Cohen, Cohen, West, & Aiken, 2003; Sobel, 1982). This best path model is shown in Figure 9 below. Table 8 gives the overall fit statistics. The overall fit statistics as seen in the model is good, with a non-significant Chi-square, RMSEA, CFI, and NNFI within acceptable ranges and information criteria far superior to Model 1. As seen in Figure 9, the general idea that locus of control underlies other mediators is supported and HIV and AIDS risk is substantially explained with a high variance ($R^2 = .76$) as seen in Table 9.

Figure 8: Model with unrelated mediators and no latent variable (poor fit, see Table 7)

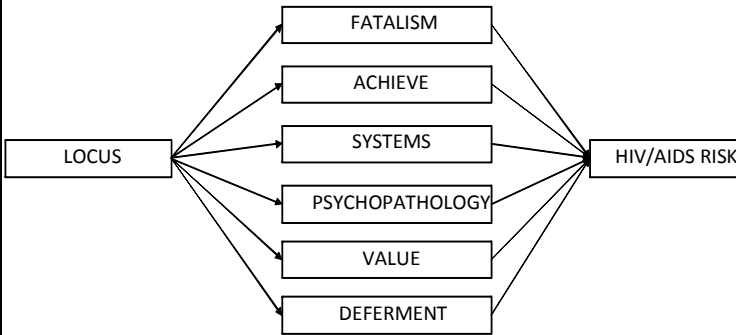


Figure 9: Model with related mediators and no latent variable

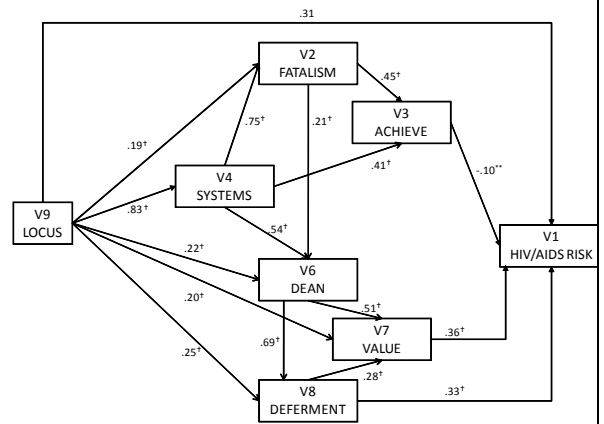


Figure 10: Model with unrelated mediators and latent variable (poor fit, see Table 7)

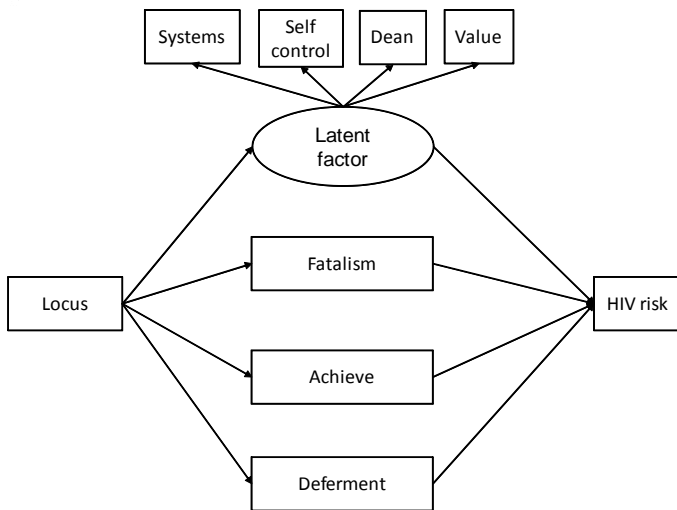
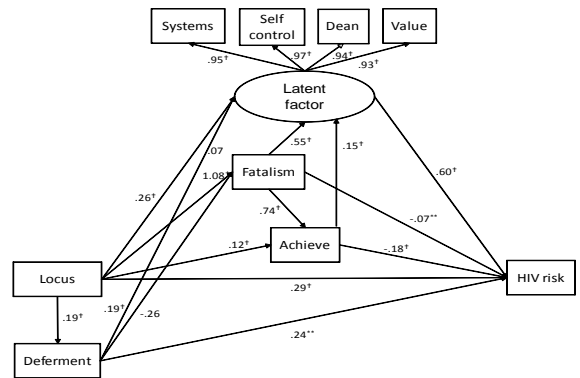


Figure 11: Model with related mediators and latent variable



Figures 8-11: Path models

Key to Figures 8-11

1. locus – locus of control
2. systems -social systems control
3. self-control – self-control
4. fatalism – fatalism
5. achieve – achievement-oriented behaviour
6. deferment- deferment of gratification
7. value – personal values and expectancies
8. dean- social alienation/psychopathology

The effects decomposition for the path Model 2 is given in Table 9, including direct, indirect and total paths of all variables acting on each endogenous variable. As seen in Table 9, the ultimate outcome variable HIV and AIDS risk is most strongly explained by locus of control (total effect = .90), both directly ($B = .34$) and through indirect paths ($B = .56$) that go through the other mediators. Therefore the overall research proposition is supported that locus of control-based risk factors have a significant influence on HIV and AIDS risk. Also, strong predictors of HIV and AIDS risk are deferment of gratification, which mostly acts directly on HIV and AIDS risk and social alienation, which wholly acts through other variables as seen in Table 9 below.

Table 9: Path coefficients for best fit non-latent variable model

	Variables						
	Fatalism	Achievement	Systems	Alienation	Values	Deferment	HIV Risk
Locus							
<i>Direct effect</i>	.21 ^t	-	.87 ^t	.23 ^t	.21 ^t	.25 ^t	.34 ^t
<i>Indirect effect</i>	.64 ^{at}	.74 ^{bt}	-	.66 ^{bt}	.71 ^{bt}	.60 ^{bt}	.56 ^{bt}
<i>Total effect</i>	.85 ^{bt}	.74 ^{bt}	.87 ^t	.89 ^{bt}	.92 ^{bt}	.85 ^{bt}	.90 ^{bt}
Fatalism							
<i>Direct effect</i>	-	.46 ^t	-	.22 ^t	-	-	-
<i>Indirect effect</i>	-	-	-	-	.16 ^{bt}	.15 ^{at}	.06 ^b
<i>Total effect</i>	-	.46 ^t	-	.22 ^t	.16 ^{bt}	.15 ^{at}	.06 ^b
Achievement							
<i>Direct effect</i>	-	-	-	-	-	-	.10 ^{**}
<i>Indirect effect</i>	-	-	-	-	-	-	-
<i>Total effect</i>	-	-	-	-	-	-	.10 ^{**}
Systems							
<i>Direct effect</i>	.74 ^t	.40 ^t	-	.54 ^t	-	-	-
<i>Indirect effect</i>	-	.34 ^{at}	-	.16 ^{at}	.50 ^{bt}	.47 ^{at}	.27 ^b
<i>Total effect</i>	.74 ^t	.74 ^{bt}	-	.70 ^{bt}	.50 ^{bt}	.47 ^{at}	.27 ^b
Alienation							
<i>Direct effect</i>	-	-	-	-	.52 ^t	.67 ^t	-
<i>Indirect effect</i>	-	-	-	-	.20 ^{at}	-	.50 ^{bt}
<i>Total effect</i>	-	-	-	-	.71 ^{bt}	.67 ^t	.50 ^{bt}
Values							
<i>Direct effect</i>	-	-	-	-	-	-	.36 ^t
<i>Indirect effect</i>	-	-	-	-	-	-	-
<i>Total effect</i>	-	-	-	-	-	-	.36
Deferment							
<i>Direct effect</i>	-	-	-	-	.29 ^t	-	.35 ^t
<i>Indirect effect</i>	-	-	-	-	-	-	.11 ^{at}
<i>Total effect</i>	-	-	-	-	.29 ^t	-	.46 ^{bt}
R²	.84	.71	.69	.87	.88	.83	.76

$\dagger = p < .01$, $** = p < .05$, $* = p < .1$. ^a Standard errors for simple indirect effects are calculated using the Sobel (1982) test. ^b Significance levels for indirect and total effects composed of more than two linked paths are only assumed if all component path coefficients are significant at same level or higher (Cohen, Cohen, West & Aiken, 2003).

5.10 Testing a localised latent factor

Two other models were explored, which sought to deal with potential multicollinearity through latent variable modelling as represented in Figures 10 and 11. In the light of possible multicollinearity, a latent factor was created that treats social systems control, self-control and social alienation as manifest indicators of a single underlying latent factor. This latent factor appeared to have good fit within the context of the other variables. The path loadings on the three manifest variables were high (>.90 standardised, as seen in Figure 11). Further analysis, however, strongly suggested that personal values and expectancies also acted as a manifest indicator of this factor (high residuals in relation to the other indicators of the latent factor, and high univariate Lagrange multipliers). Accordingly, this variable was included as a fourth indicator of the latent factor. Similar indices suggest that other manifest indicators are sufficiently independent of the latent factor to be treated as their own constructs.

Having tested the latent structure, the first model (Model 3) tested is one in which locus of control is a universal exogenous variable underlying the relationships between all other predictors of HIV and AIDS risk. In other words, Model 3 proposes that locus of control affects HIV and AIDS risk through the mediating influences of the other variables. Figure 10 shows this model. However, Model 3 has a substantially poor fit, as seen in Table 8 including poor indices for Chi-square, RMSEA, CFI and NNFI which are far out of commonly used ranges.

An alternative specification once again involved testing for more complex endogenous relationships between the various mediators between locus of control and HIV and AIDS risk instead of keeping these factors as disassociated mediators. An examination of Lagrange multipliers suggested that there were several feasible inter-mediator relationships. The relationships involving indicators of the latent factor were not considered. These were specified as Model 4 which is shown in Figure 11. Similar to the previous analysis, Table 8 shows that this model has a substantially superior fit to Model 3, in terms of indices for RMSEA, CFI and NNFI which fell within acceptable ranges. This model was therefore investigated, and its path decomposition is shown in Table 10.

Table 10: Path coefficients for best fit latent variable model

	Variables				
	Fatalism	Achievement	Latent variable	Deferment	HIV Risk
Locus					
<i>Direct effect</i>	.40 [†]	.15 ^{**}	.15 [†]	.85 [†]	.35 [†]
<i>Indirect effect</i>	.45 [†]	.61 ^a	.73 ^b	-	.55 ^b
<i>Total effect</i>	.86 [†]	.76 ^a	.87 ^b	.85 [†]	.90 ^b
Fatalism					
<i>Direct effect</i>	-	.71 [†]	.36 [†]	-	.06
<i>Indirect effect</i>	-	-	.10 ^{†a}	-	.13 ^b
<i>Total effect</i>	-	.71 [†]	.46 [†]	-	.06
Achievement					
<i>Direct effect</i>	-	-	.13 [†]	-	.17 ^{**}
<i>Indirect effect</i>	-	-	-	-	.07 [†]
<i>Total effect</i>	-	-	.13 [†]	-	-.10 ^b
Latent variable					
<i>Direct effect</i>	-	-	-	-	.54 [†]
<i>Indirect effect</i>	-	-	-	-	-
<i>Total effect</i>	-	-	-	-	.54 [†]
Deferment					
<i>Direct effect</i>	.54 [†]	-	.37 [†]	-	.30 [†]
<i>Indirect effect</i>	-	.38 [†]	.25 ^{†a}	-	.24 ^b
<i>Total effect</i>	.54 [†]	.38 [†]	.62 [†]	-	.54 ^b
R²	.76	.69	.69	.95	.76

[†] = $p < .01$, ^{**} = $p < .05$, ^{*} = $p < .1$. ^a Standard errors for simple indirect effects are calculated using the Sobel (1982) test. ^b Significance levels for indirect and total effects composed of more than two linked paths are only assumed if all component path coefficients are significant at same level or higher (Cohen, Cohen, West & Aiken, 2003).

Once again, locus of control appeared as the antecedent of the variables that interact to explain HIV and AIDS risk. R^2 was again high at .76. It is also evident in Table 10 that locus of control has the strongest total effect on HIV and AIDS risk with a large ($\beta = .90$). Also significantly large were the total effects of the latent variable and deferment of gratification ($\beta = .54$). Fatalism and achievement-oriented behaviour had low total effects on HIV and AIDS risk ($\beta = .06$) and ($\beta = .17$) respectively.

The structural equation modelling results indicated that there was no definite path model or approach that could be regarded as perfect. However, the exploratory analysis performed in this study indicated that the broad elements of the research question were answered. Locus of control-based variables predicted HIV and AIDS risk and were associated with a significant variance in HIV and AIDS risk. Locus of control appeared to act as an antecedent of the system of variables that explained HIV and AIDS risk. The locus of control model as a whole explained a substantial proportion of variance in HIV and AIDS risk. The results of this study indicated that the locus of control-based training programme could be used in HIV and AIDS risk reduction training.

In this study, the results of structural equation modelling showed that some factor combinations of locus of control variables did not make good models that could predict HIV and AIDS risk. The locus of control-based models generated in this study could have been affected by multicollinearity in such a way that some variables could have become redundant. Health trainers using locus of control-based variables as their training content could identify locus of control-related models with goodness of fit to reduce HIV and AIDS risk. In this study, models 2 and 4 could be more suitable than models 1 and 3 in HIV and AIDS risk reduction training. In view of the fact that different groups of people could be affected by HIV and AIDS differently, it was found suitable in this study to target all the identified locus of control-based risk factors in HIV and AIDS risk reduction training. The study investigated the efficacy of a locus of control-based training programme in reducing health risks associated with locus of control-based factors and HIV and AIDS risk.

5.11 The health risk reduction effect of the training programme

In order to test the main hypothesis that the locus of control-based training programme would demonstrate significant reduction in locus of control-related health risks and HIV and AIDS risk among the participants, the following specific hypotheses were tested:

1. The locus of control-based training programme will not have an effect on locus of control.
2. The locus of control-based training programme will not reduce health risks associated with social systems control.
3. The locus of control-based training programme will not reduce health risks associated with self-control.
4. The locus of control-based training programme will not reduce health risks associated with fatalism.
5. The locus of control-based training programme will not reduce health risks associated with achievement-oriented behaviour.
6. The locus of control-based training programme will not reduce health risks associated with deferment of gratification.
7. The locus of control-based training programme will not reduce health risks associated with personal values and expectancies.
8. The locus of control-based training programme will not reduce health risks associated with social alienation.
9. The locus of control-based training programme will not reduce HIV and AIDS risk.

The results showed high means before training and low means after training. The results show baseline data as 1, data obtained one month after training as 2, and data obtained 3 months after training as 3. The means and standard deviations across the three phases are represented in Table 11 below. The means for phase 1 were larger than means for phases 2 and 3.

Table 11: Means and standard deviations

Variable	Number	Mean	Standard deviation
Locus of control 1	257	11.68	5.72
Locus of control 2	257	6.98	3.66
Locus of control 3	257	7.19	3.79
Systems control 1	257	67.67	31.11
Systems control 2	257	34.61	9.22
Systems control 3	257	35.60	7.48
Self-control 1	257	66.84	32.54
Self-control 2	257	35.06	7.68
Self-control 3	257	34.94	7.61
Fatalism 1	257	67.63	33.60
Fatalism 2	257	36.28	9.12
Fatalism 3	257	36.23	8.45
Achievement 1	257	167.48	68.04
Achievement 2	257	88.82	16.41
Achievement 3	257	85.99	17.88
Deferment 1	257	54.83	24.47
Deferment 2	257	31.50	10.26
Deferment 3	257	31.18	9.38
Values 1	257	63.77	31.95
Values 2	257	35.84	9.77
Values 3	257	35.55	9.32
Alienation 1	257	63.45	31.06
Alienation 2	257	35.39	9.33
Alienation 3	257	34.18	8.33
HIV and AIDS 1	257	31.81	19.93
HIV and AIDS 2	257	8.29	5.43
HIV and AIDS 3	257	8.59	5.37

5.12 Test of homogeneity of variance

In order to test the main hypothesis that the locus of control-based training programme would demonstrate significant reduction in locus of control-related health risks and HIV and AIDS risk among the participants, the study tested the null hypotheses that there was no difference in variation of responses for all the variables attributable to the effect of the locus of control-based training programme on health risks and HIV and AIDS risk across the 3 months of the training programme.

The null hypotheses were tested for the following variables: locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk. Levene's test of homogeneity of variance suggested rejecting the null hypotheses and concluding that the differences in variation over the three months were statistically significant as represented in Table 12 below. The results rejected the null hypotheses for all the variables. The locus of control-based training programme was associated with the changes in locus of control-based health risks and HIV and AIDS risk across the three months. The means of all the variables across the 3 months did not show equal variance. This means ANOVA assumption of equality of means or equal population variances was not met hence ANOVA could not be used to test for equality of means.

Table 12: Levene` s test of homogeneity of variance

	Levene statistic	Df 1	Df 2	Significance
Locus of control	53.02	2	768	.01*
Systems	550.35	2	768	.01*
Self-control	657.84	2	768	.01*
Fatalism	521.74	2	768	.01*
Achieve	460.67	2	768	.01*
Deferment	310.93	2	768	.01*
Values	451.17	2	768	.01*
Alienation	555.06	2	767	.01*
HIV and AIDS	404.73	2	768	.01*

* $p < .01$

5.13 Friedman` s test

ANOVA not usable, The Friedman test was used to test for differences between related samples as an alternative to Repeated Measures Analysis of Variance (Repeated Measures ANOVA). The Friedman non-parametric test was used to test the null hypotheses that the locus of control-based training programme will not reduce mean responses for locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk across the three months of the training programme.

The results rejected the null hypotheses. The mean responses differed significantly across the three months with all p -values much less than 0.05 as seen in Table 13 below.

Table 13: Friedman Test (N =257)

Variable	Mean rank		Test statistics
Locus of control 1 Locus of control 2	2.72	Chi-square	214.53
Locus of control 3	1.61	Df	2
	1.67	Asymp. Sig.	.05*
Systems control 1 Systems control 2 Systems control 3	2.88	Chi-square	310.38
	1.49	Df	2
	1.63	Asymp. Sig.	.05*
Self-control 1	2.85	Chi-square	291.95
Self-control 2	1.59	Df	2
Self-control 3	1.56	Asymp. Sig.	.05*
Fatalism 1	2.83	Chi-square	277.62
Fatalism 2	1.53	Df	2
Fatalism 3	1.64	Asymp. Sig.	.05*
Achievement 1 Achievement 2	2.91	Chi-square	324.94
Achievement 3	1.59	Df	2
	1.50	Asymp. Sig.	.01*
Deferment 1 Deferment 2 Deferment 3	2.87	Chi-square	298.39
	1.56	Df	2
	1.57	Asymp. Sig.	.05*
Values 1	2.80	Chi-square	255.08
Values 2	1.59	Df	2
Values 3	1.62	Asymp. Sig.	.05*
Alienation 1	2.79	Chi-square	255.08
Alienation 2	1.67	Df	2
Alienation 3	1.54	Asymp. Sig.	.05*
HIV and AIDS 1	2.82	Chi-square	278.90
HIV and AIDS 2	1.54	Df	2
HIV and AIDS 3	1.64	Asymp. Sig.	.05*

* p < .05.

The results indicated that the difference in locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk across the 3 months was statistically significant. The changes in psychological functioning were attributable to the efficacy of the locus of control-based training programme in reducing health risks and HIV and AIDS risk. However, Levene`s test and Friedman`s test do not show specific changes between phases, that is, changes in health risk from time 1 to time 2, time 2 to time 3 and between time 1 and time 3. Post hoc tests were used to investigate the changes in health risk.

5.14 Post hoc tests: Tamhane post hoc test

The sources of differences over three months were investigated using the Tamhane post hoc test. This test does not require that the variation between the groups be equal. The test was used to test for health risk differences for all the variables in months 1 and 2, months 1 and 3 and months 2 and 3. For all the responses, locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk, it was concluded that there were significant differences between months 1 and 2 as well as months 1 and 3 since the p-values were much less than 0.05 as represented in Table 14 below. However, the differences in health risks between month 2 and month 3 were not statistically significant for all the variables as seen in Table 14.

Participants showed reduced health risks after training. They provided learnt responses that showed health risk reduction behaviours. The low means obtained after training indicated the efficacy of the locus of control-based training programme in modifying personality and reducing locus of control-based health risks and HIV and AIDS risk.

Table 14: Multiple comparisons of psychological functioning across three months (1, 2, and 3).

Multiple Comparisons

Tamhane

(I) month	(J) month		Dependent Variable								
			Locus	Fatalism	Achieve	Systems	Self_Control	Dean	Value	Deferment	AIDS
1	2	Mean Difference (I-J)	4.693*	31.354*	80.658*	33.062*	31.778*	28.058*	27.926*	23.327*	23.520*
		Std.	.424	2.172	4.366	2.024	2.086	2.023	2.084	1.655	1.289
		Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000
		95% Confidence Interval	3.68	26.14	70.17	28.20	26.77	23.20	22.92	19.36	20.43
		Lower Bound	5.71	36.57	91.14	37.92	36.79	32.92	32.93	27.30	26.62
	Upper Bound										
	3	Mean Difference (I-J)	4.486*	31.405*	81.486*	32.078*	31.899*	29.276*	28.218*	23.646*	23.222*
		Std.	.428	2.161	4.389	1.996	2.085	2.006	2.076	1.635	1.288
		Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000
		95% Confidence Interval	3.46	26.21	70.95	27.28	26.89	24.46	23.23	19.72	20.13
Lower Bound		5.51	36.60	92.03	36.87	36.91	34.09	33.20	27.57	26.31	
Upper Bound											
2	1	Mean Difference (I-J)	-4.693*	-31.354*	-80.658*	-33.062*	-31.778*	-28.058*	-27.926*	-23.327*	-23.520*
		Std. Error	.424	2.172	4.366	2.024	2.086	2.023	2.084	1.655	1.289
		Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000
		95% Confidence Interval	-5.71	-36.57	-91.14	-37.92	-36.79	-32.92	-32.93	-27.30	-26.62
		Lower Bound	-3.68	-26.14	-70.17	-28.20	-26.77	-23.20	-22.92	-19.36	-20.43
	Upper Bound										
	3	Mean Difference (I-J)	-.206	.051	.829	-.984	.121	1.217	.292	.319	-.298
		Std. Error	.328	.775	1.514	.741	.675	.781	.842	.867	.477
		Sig.	.896	1.000	.928	.458	.997	.318	.980	.976	.897
		95% Confidence Interval	-.99	-1.81	-2.80	-2.76	-1.50	-.65	-1.73	-1.76	-1.44
Lower Bound		.58	1.91	4.46	.79	1.74	3.09	2.31	2.40	.84	
Upper Bound											
3	1	Mean Difference (I-J)	-4.486*	-31.405*	81.486*	32.078*	31.899*	29.276*	28.218*	23.646*	23.222*
		Std. Error	.42	2.16	4.38	1.99	2.08	2.00	2.07	1.63	1.28
		Sig.	.00	.00	.00	.00	.00	.00	.00	.00	.00
		95% Confidence Interval	-	-	-	-	-	-	-	-	-
		Lower Bound	-	-	-	-	-	-	-	-	-
	Upper Bound	-	-	-	-	-	-	-	-	-	
	2	Mean Difference (I-J)	.20	-.051	-.829	.98	-.121	1.217	.292	-.319	-.29
		Std. Error	.32	.77	1.51	.74	.67	.78	.84	.86	.47
		Sig.	.89	1.00	.92	.45	.99	.31	.98	.97	.89
		95% Confidence Interval	-	-	-	-	-	-	-	-	-
Lower Bound		.9	1.8	2.8	2.7	1.5	.6	1.7	1.7	1.4	
Upper Bound											

*. The mean difference is significant at the .05 level.

5.15 Changes in responses due to gender, race, and personality

The study tested the changes in health risk responses according to gender, race, and personality before training and after training. The study tested the null hypothesis that the locus of control-based training programme had no effect on health risk reduction responses according to gender, race, and personality. A change in personality (internality versus externality) of the participants after training was statistically significant as seen in

Table 15 below. Most of the participants` scores significantly shifted towards internal locus of control after training and a change in personality had a significant effect on health risk reduction behaviours among the participants. Multivariate analyses showed that when demographic characteristics of the study sample were included in the statistical analyses, personality had a significant effect on health risk scores associated with social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk after training. It was noted that the interactions of age, gender, and race after training were not statistically significant in determining health risk reduction responses of the participants.

Table 15: Interactions of gender, age, race and personality

			Multivariate Tests								
Effect			Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a	
Between Subjects	Intercept	Pillai's Trace	.129	12.204 ^d	3.000	247.000	.000	.129	36.611	1.000	
		Wilks' Lambda	.871	12.204 ^d	3.000	247.000	.000	.129	36.611	1.000	
		Hotelling's Trace	.148	12.204 ^d	3.000	247.000	.000	.129	36.611	1.000	
		Roy's Largest Root	.148	12.204 ^d	3.000	247.000	.000	.129	36.611	1.000	
	Gender	Pillai's Trace	.006	.519 ^b	3.000	247.000	.669	.006	1.558	.156	
		Wilks' Lambda	.994	.519 ^b	3.000	247.000	.669	.006	1.558	.156	
		Hotelling's Trace	.006	.519 ^b	3.000	247.000	.669	.006	1.558	.156	
		Roy's Largest Root	.006	.519 ^b	3.000	247.000	.669	.006	1.558	.156	
	Race	Pillai's Trace	.027	1.150	6.000	496.000	.332	.014	6.903	.456	
		Wilks' Lambda	.973	1.147 ^b	6.000	494.000	.334	.014	6.881	.455	
		Hotelling's Trace	.028	1.143	6.000	492.000	.336	.014	6.859	.453	
		Roy's Largest Root	.019	1.564 ^c	3.000	248.000	.199	.019	4.693	.410	
	Personality	Pillai's Trace	.888	653.31 ^d	3.000	247.000	.000	.888	1959.933	1.000	
		Wilks' Lambda	.112	653.31 ^d	3.000	247.000	.000	.888	1959.933	1.000	
		Hotelling's Trace	7.935	653.31 ^d	3.000	247.000	.000	.888	1959.933	1.000	
		Roy's Largest Root	7.935	653.31 ^d	3.000	247.000	.000	.888	1959.933	1.000	
	Age	Pillai's Trace	.013	1.061 ^b	3.000	247.000	.366	.013	3.183	.286	
		Wilks' Lambda	.987	1.061 ^b	3.000	247.000	.366	.013	3.183	.286	
		Hotelling's Trace	.013	1.061 ^b	3.000	247.000	.366	.013	3.183	.286	
		Roy's Largest Root	.013	1.061 ^b	3.000	247.000	.366	.013	3.183	.286	
	Gender * Personality	Pillai's Trace	.004	.355 ^b	3.000	247.000	.785	.004	1.066	.119	
		Wilks' Lambda	.996	.355 ^b	3.000	247.000	.785	.004	1.066	.119	
		Hotelling's Trace	.004	.355 ^b	3.000	247.000	.785	.004	1.066	.119	
		Roy's Largest Root	.004	.355 ^b	3.000	247.000	.785	.004	1.066	.119	
	Within Subjects	month	Pillai's Trace	.015	.616 ^b	6.000	244.000	.717	.015	3.698	.244
			Wilks' Lambda	.985	.616 ^b	6.000	244.000	.717	.015	3.698	.244
			Hotelling's Trace	.015	.616 ^b	6.000	244.000	.717	.015	3.698	.244
			Roy's Largest Root	.015	.616 ^b	6.000	244.000	.717	.015	3.698	.244
month * Gender		Pillai's Trace	.012	.487 ^b	6.000	244.000	.818	.012	2.919	.196	
		Wilks' Lambda	.988	.487 ^b	6.000	244.000	.818	.012	2.919	.196	
		Hotelling's Trace	.012	.487 ^b	6.000	244.000	.818	.012	2.919	.196	
		Roy's Largest Root	.012	.487 ^b	6.000	244.000	.818	.012	2.919	.196	
month * Race		Pillai's Trace	.047	.989	12.000	490.000	.458	.024	11.873	.584	
		Wilks' Lambda	.953	.993 ^b	12.000	488.000	.454	.024	11.922	.586	
		Hotelling's Trace	.049	.997	12.000	486.000	.450	.024	11.970	.588	
		Roy's Largest Root	.045	1.831 ^c	6.000	245.000	.094	.043	10.988	.680	
month * Personality		Pillai's Trace	.767	134.153 ^d	6.000	244.000	.000	.767	804.915	1.000	
		Wilks' Lambda	.233	134.153 ^d	6.000	244.000	.000	.767	804.915	1.000	
		Hotelling's Trace	3.299	134.153 ^d	6.000	244.000	.000	.767	804.915	1.000	
		Roy's Largest Root	3.299	134.153 ^d	6.000	244.000	.000	.767	804.915	1.000	
month * Age		Pillai's Trace	.015	.631 ^b	6.000	244.000	.705	.015	3.788	.250	
		Wilks' Lambda	.985	.631 ^b	6.000	244.000	.705	.015	3.788	.250	
		Hotelling's Trace	.016	.631 ^b	6.000	244.000	.705	.015	3.788	.250	
		Roy's Largest Root	.016	.631 ^b	6.000	244.000	.705	.015	3.788	.250	
month * Gender * Personality		Pillai's Trace	.015	.601 ^b	6.000	244.000	.730	.015	3.604	.238	
		Wilks' Lambda	.985	.601 ^b	6.000	244.000	.730	.015	3.604	.238	
		Hotelling's Trace	.015	.601 ^b	6.000	244.000	.730	.015	3.604	.238	
		Roy's Largest Root	.015	.601 ^b	6.000	244.000	.730	.015	3.604	.238	

a. Computed using alpha = .05

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d.

Design: Intercept+Gender+Race+Personality+Age+Gender * Personality
Within Subjects Design: month

5.16 Comparison of health risks according to personality after training

The study further split the group's responses according to personality. The study compared the means of participants with an external locus of control and means of participants with an internal locus of control after training to assess the impact of the training programme on personality change, that is, externality versus internality, and changes in locus of control-based health risks and HIV and AIDS risk. The study compared the two groups at two time intervals after training. The comparison was done one month after training and three months after training. The difference in psychological functioning between the two groups one month after training and three months after training is represented in Tables 16 and 17 below.

Table 16: Comparison of health risk one month after training

	External locus of control	Internal locus of control	<i>t</i> Value	<i>p</i>
Variable	Mean and standard deviation	Mean and standard deviation		
Locus of control	9.76 (2.78)	4.01 (1.52)	35.79	.01*
Social systems control	39.51 (10.43)	29.35 (2.52)	30.04	.01*
Self-control	39.98 (7.74)	29.78 (2.07)	64.92	.01*
Fatalism	42.08 (9.30)	30.06 (2.20)	119.00	.01*
Achievement-oriented behaviour	97.50 (15.97)	75.36 (5.59)	57.46	.01*
Deferment of gratification	38.96 (8.88)	23.50 (3.09)	80.21	.01*
Personal values and expectancies	42.00 (9.76)	29.24 (3.41)	105.99	.01*
Social alienation	41.71 (8.73)	28.62 (3.18)	102.55	.01*
HIV and AIDS risk	11.44 (5.50)	4.88 (2.51)	68.49	.01*

P = < .01

The results showed that the two groups still differed significantly in personality one month after training. The results showed that even if the training programme improved participants` personality and health risks, the difference between the two personalities was statistically significant. The results obtained one month after training showed that the mean difference between participants with an external locus of control and participants with an internal locus of control was statistically significant with respect to locus of control, social systems control, self-control, fatalism, achievement-oriented behaviours, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk. The difference in personality between the two groups after training showed that personality is a fairly stable human quality although it is modified with training and new life experiences.

The study went further to analyse the difference in health risks between participants with an external locus of control and participants with an internal locus of control three months after training. The results are represented in Table 17 below.

Table 17: Comparison of health risk three months after training

	External locus of control	Internal locus of control	<i>t</i> Value	<i>p</i>
Variable	Mean and standard deviation	Mean and standard deviation		
Locus of control	9.89 (2.98)	4.29 (1.97)	25.32	.01*
Social systems control	40.71 (6.78)	30.11 (2.94)	51.17	.01*
Self-control	39.77 (6.94)	29.77 (4.09)	37.12	.01*
Fatalism	41.74 (7.63)	30.32 (4.28)	41.75	.01*
Achievement-oriented behaviour	97.06 (17.46)	74.12 (8.00)	38.99	.01*
Deferment of gratification	38.17 (7.72)	23.69 (3.12)	65.82	.01*
Personal values and expectancies	41.51 (9.39)	29.16 (2.57)	105.30	.01*
Social alienation	39.33 (8.32)	28.69 (3.38)	69.21	.01*
HIV and AIDS risk	11.77 (5.57)	5.17 (2.04)	77.27	.01*

* $P < .01$

The results showed that the two groups differed significantly in terms of locus of control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk three months after training. The comparison of means of participants with an external locus of control and participants with an internal locus of control at phase three of the training programme showed a significant improvement in personality and a reduction in locus of control-based health risks and HIV and AIDS risk. Even if the two groups differed significantly in terms of personality, the means obtained after training showed reduced health risks for both groups. The results indicated that the locus of control-based training programme was efficacious in reducing health risks for participants with an external locus of control and participants with an internal locus of control. The means for the the two groups showed healthy functioning after training. The means indicated healthier personalities and safer health-protective behaviours for both externals and internals as at phase two and phase three of the training programme.

5.17 Conclusion

This chapter has presented the results obtained in this study. The demographic characteristics of the study sample indicated that the sample had more females than males and that all the participants were Black. Participants with an external locus of control showed health risks before training. The results showed the relationship between locus of control-based variables and HIV and AIDS risk before training and after training. The means of the variables across the three phases of the locus of control-based training programme changed significantly after training. The results rejected the null hypotheses that the locus of control-based training programme would not be efficacious in reducing health risks. Levene` s test, Friedman` s test, Tamhane post hoc test, multivariate tests and *t* tests showed significant improvement in personality, reduction in locus of control-based health risks and HIV and AIDS risk after training. The results indicated the efficacy of the training programme in reducing locus of control-based health risks and HIV and AIDS risk. The results showed that personality (internality versus externality) changed with training. Most of the personality scores moved towards internality after training. However, the interactions of gender, age, and race did not influence changes in

health risk scores across the three phases of the training programme. The next chapter presents a discussion of the results presented in this chapter.

CHAPTER 6

DISCUSSION

6.1 Introduction

This chapter discusses the results obtained in this study. The chapter discusses the development of the locus of control-based training programme, implementation of the training programme and evaluation of the locus of control-based training programme. The chapter discusses the statistical significance of participants' responses in the context of HIV and AIDS risk in South Africa. The chapter discusses the short-term and long-term effects of the training programme in reducing locus of control-based health risks and HIV and AIDS risk among the participants.

6.2 The development of the locus of control-based training programme

The development of the locus of control-based training programme to reduce HIV and AIDS risk among university students was based on Rotter's social learning theory. The training themes were based on Rotter's social learning theory. The themes were social systems control, self-control, fatalism, deferment of gratification, personal values and expectancies, and social alienation. The social learning principles underlying these themes were discussed in the small interactive groups. The study found the theory suitable in analysing patterns of HIV and AIDS risk behaviour among university students in South Africa. The study found that a theory-based training programme could be more informative in dealing with HIV and AIDS issues among the youth.

The social learning theory argues that most of the health problems are related to human behaviour and that human behaviour can be modified with training to improve health (Rotter, 1954; Rotter, 1966; Flynn et al., 2009). The theory relates well to the South African context in that it looks at perceptions of ownership of behaviour and the role of cultural values in shaping personality. Most of the social learning concepts used in this study were easily understood by the young adults in South Africa.

The locus of control-based training programme included the social learning postulate which states that in order for individuals to reduce health risks, they need to interact with their meaningful environment. During the pilot study, the research instruments were modified to fit it in with the South African environment. Participant learning activities during group work were mostly based on the South African experience. In this study, interaction with the meaningful environment meant dealing with current HIV and AIDS problems affecting the youth, finding solutions to reduce health risks, and seeking to understand why South Africa is one of the countries worst affected by the pandemic in the world (Iqbal, 2009; Kapp, 2009).

The locus of control-based training programme's content was guided by the social learning principles of human learning. Behaviour change was incorporated into the training programme as a learnt human quality (Oldham, Skodol, Bender, 2009; Rotter, 1954). Locus of control was regarded as a product of human learning (Rotter, 1954, Rotter, 1966; Torres et al., 2009). Personality is learned (Shiner, 2009) and it can be unlearned through training (Koster, Fox, & MacLeod, 2009). The pilot study survey revealed that most of the behaviours of the participants tended show learnt behaviours in university. The training programme aimed to modify participants' locus of control towards internal locus of control through learning.

The locus of control-based training programme emphasised that human experience shapes personality (Rotter, 1954; Sun, 2009). Knowledge is built on past human experience (Rotter, 1954; Shiner, 2009). In this study, participants were able to relate their personal experiences in the context of HIV and AIDS risk reduction. The group discussions enabled participants to explore their strengths and weakness in HIV and AIDS risk reduction as they interacted with their meaningful environment. Mostly, participants were encouraged to build health-protective behaviours against HIV and AIDS. Their strategies were based on previous experience. Locus of control-based knowledge in HIV and AIDS risk reduction was compared with existing HIV and AIDS preventive methods that were used by participants. Effective learning and behaviour change was characterised by the ability to relate theory to human behaviour in sexual

relationships and the ability to use protective healthcare products such as condoms (Piot, Kazatchkine, Dybul, & Lob-Levyt, 2009).

The use of social learning theory in developing a locus of control-based training programme for HIV and AIDS risk reduction was important in demonstrating that human behaviour occurs in a social context (Burke, Joseph, Pasick, & Barker, 2009; Rotter, 1954). The theory illustrated that HIV and AIDS risk could be controlled by dealing with personality and social antecedents that predispose individuals to HIV infection (Rotter, 1954; Solomon, Kiang, Halkitis, Moeller, & Pappas, 2009). The theoretical component assisted participants in dealing with cultural norms and values in HIV and AIDS risk reduction. The South African context and its cultural diversity influenced the content of the training programme (Airhihenbuwa et al., 2009).

In the development of the locus of control-based training programme, use of terminology that is found in other disciplines was adopted to broaden the scope of the locus of control construct. Rotter (1954) defended the use of terminology that had origins in other fields as important in enriching the social learning theory (Hermann-Pillath, 2009). Rotter (1966) acknowledged that he was not the originator of most of the terms used in social learning theory and in the development of the locus of control construct. The terms are social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, and social alienation. In this study, the technical terms helped to direct attention to specific language cues and behaviours relevant to HIV and AIDS risk reduction (Bhana & Petersen, 2009). Social learning-related technical language in health education was found to speed up learning and the acquisition of health risk reduction skills. The social learning theory technical terms used in health education helped participants understand HIV and AIDS risk from various perspectives (Rotter, 1954; Rudd & Keller, 2009). A multidisciplinary approach to HIV and AIDS risk reduction education appealed favourably to participants who were drawn from various faculties of the university. The locus of control-based training programme provided a language that was understood by students studying different disciplines in university. In this study, locus of control-related terms acted as a stimulus that enabled participants to read the

intentions, feelings, and thoughts of others in the group interactive processes (Duggleby, 2005; Rickheim, Weaver, Flader, & Kendall, 2002; Rotter, 1954).

When the locus of control-based training programme was being developed, special focus was placed on the fact that human behaviour is directional and goal-oriented (Rotter, 1954). Participants in small groups demonstrated how individuals could have HIV and AIDS risk reduction as a goal to be achieved and how they could behave to promote health (Patel, Flisher, Nikapota, & Malhotra, 2007). The locus of control-based training programme included the principle that human needs are learned or acquired (Greguras, & Diefendorff, 2009; Rotter, 1954). Reinforcement was included in the training programme in order to demonstrate the role of reward in sustaining human behaviour in health contexts (Bornovalova et al., 2009; Rotter, 1954). In this study, participants discussed factors associated with the reward and sustenance of risk sexual behaviours among the youth in South Africa (Parry et al., 2009; Semple, Strathdee, Zians, & Petterson, 2009).

The concept of behaviour potential was incorporated into the locus of control-based training programme to help participants understand that individuals are capable of changing risk health habits through training (DiClemente, Crosby, & Kegler, 2009; Rotter, 1954). Health outcomes expectancy formed part of the locus of control-based training programme. This concept helped participants realise the contingency between positive health outcomes and positive behaviours towards health risk reduction. Participants discussed how they could, as a youth, realise freedom of movement, association and behavioural choice in the context of HIV and AIDS risk. The locus of control-based training programme included locus of control-based problem solving skills that helped participants deal with sexual risk behaviours in small learning groups.

The principles and concepts of social learning theory guided the development of the locus of control-based training programme for HIV and AIDS risk among university students. The theory served as a foundation upon which risk reduction behavioural outcomes were based. The theoretical concepts were easily understood by the participants who also reported in their learning groups that they found the concepts useful in dealing with HIV and AIDS risk.

6.3 Implementation of the locus of control-based training programme

The implementation of the training programme involved training of participants in using locus of control-based techniques in dealing with health risks and HIV and AIDS risk. The objective of the training programme was to reduce locus of control-related health risks and HIV and AIDS risk. The content of the training programme was on locus of control-based social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies and social alienation. Participants were divided into 15 training groups with about 17 participants per group. The duration of the training programme was four sessions of two hours each on four consecutive weekends. The researcher facilitated the group interactive and learning processes. Participants were asked to complete the locus of control scale, social systems control scale, self-control scale, fatalism scale, intellectual achievement responsibility scale, deferment of gratification scale, personal values and expectancies scale, social alienation scale and HIV and AIDS risk questionnaire before training commenced. They were asked to complete the same battery of tests a month after training and three months after training.

The training techniques included small group discussions, role plays, HIV and AIDS peer information sharing, experiential learning approach, and discovery learning through HIV and AIDS-related games. Participants were involved in leaderless group activities. They initiated the entire learning process after getting learning cards with key social learning points from the facilitator. The researcher gave them information on social learning principles regarding locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation. Participants engaged with the principles and how they applied to health risk reduction. They discussed how the principles could be applied to reduce locus of control-based health risks and HIV and AIDS.

The theme of social systems control focused on health promotion and social action to realise better health for the individual and the community (Braa & Hedberg, 2002; Campbell, 2004; Rotter, 1966). The theme encouraged participants to seek collective

ways and means of dealing with HIV and AIDS as a threat to human existence. They discussed how students could engage university authorities in improving student campus health. The students discussed how they could show personal effectiveness by engaging in health-seeking behaviours such as visiting the university clinic for HIV and AIDS preventive products and health check-ups including voluntary counselling and testing (Heywood, 2003; Singh et al., 2007).

Group learning activities on self-control focused on self-regulation and self-management in HIV and AIDS risk (Rotter, 1966). Participants looked at impulsivity and associated health risks (Muraven & Baumeister, 2000). They discussed ways of dealing with self-control-related health problems among the youth in South Africa.

The theme of fatalism focused on superstition and religious beliefs in HIV and AIDS risk reduction (Meschi et al., 2006; Rotter, 1966; Starfield et al., 2008). Participants discussed the influence of cultural and religious beliefs on HIV and AIDS risk among the youth in South Africa. Participants identified social and religious institutions that reinforced and legitimised such beliefs. They discussed the role of government mediating between beliefs and health provision in South Africa.

The group activities on achievement-oriented behaviours focused on the role of achievement motivation in health promotion (Hoyt et al., 2009; Lefcourt, 1976; Rotter, 1966). Participants discussed the association between low achievement and health risks. They discussed health risks between achieving and non-achieving communities and health risks between privileged and underprivileged communities. The risks of HIV and AIDS in resource poor countries were discussed. Participants also discussed the behaviours and wellbeing of students with low achievement motivation in university.

The theme of deferment of gratification looked at the ability to delay gratification in tempting situations (Lefcourt, 1976; Rotter, 1966; Mischel, 2009). Participants discussed health risks including HIV and AIDS risk associated with unwillingness to delay gratification among university students. The group activities identified student behaviours that illustrated unwillingness to delay gratification and behaviours that indicated delaying of gratification in tempting situations. Participants highlighted common diseases and

health complaints among university students that were associated with inability to defer gratification.

On the theme of personal values and expectancies, group activities focused on the role of personal values and expectancies in health risk reduction (Lefcourt, 1976; Rotter, 1966). Participants discussed the health behaviours of individuals with low personal values and expectancies in life (Hall & Jones, 2004; Lisak, 1994). They discussed the role of low self-image and low body-image in sexual relations and HIV and AIDS risk. Participants identified sexual recklessness as a risk factor among the youth in South Africa (Kalichman, 2000; Schloretdt & Heiman, 2003).

In their groups, participants explored how social alienation could be a risk factor in HIV and AIDS prevention and control (Harrow et al., 2009; Rotter, 1966). They used the social learning concept of ``being a small cog in a big machine or being at the mercy of forces too strong or too vague to control`` to deal with HIV and AIDS risk (Rotter, 1966, p. 3). They discussed the university environment and forms of alienation that could be experienced by students. They identified and discussed common health risks associated with social alienation in university.

6.4 Evaluation of the locus of control-based training programme

The locus of control-based training programme was evaluated using inferential statistics on data obtained before training and data obtained after training. The results showed significant health risk difference between participants with an external locus of control and participants with an internal locus of control before training. The results showed positive correlations between locus of control-based variables and HIV and AIDS risk. The locus of control-based variables were found to be significant predictors of HIV and AIDS risk. It was established in this study that the variables that constituted the locus of control-based training programme could make models that could be used in HIV and AIDS risk reduction training programmes. In this study, the locus of control-based training programme significantly modified participants` locus of control and reduced locus of control-based health risks and HIV and AIDS risk among the participants.

6.4.1 Health risk difference according to personality

In this study, health risk refers to high scores on the locus of control-based variables which are social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, and social alienation. According to locus of control research, high scores on these variables indicate health risks (Angel, Angel, & Hill, 2009; Lefcourt, 1976; Phares, 1976, Rotter, 1966).

Participants with an external locus of control viewed their health as beyond their control and they found the university environment to be frustrating their health needs. The results of this study confirm previous studies which found differences between students with an external locus of control and students with an internal locus of control in a university environment (Gwandure, 2008a; Phares, 1976).

The difference in health risks related to social systems control between participants with an external locus of control and participants with an internal locus of control was significant. The results are consistent with previous studies which indicate that participants with an external locus of control are less active in collective effort to improve individual and community health (Benatar, 2004; Rotter, 1966). In this study, students with an external locus of control reported less effort and mobilisation of resources to improve student health on campus (Greenberg et al., 2006).

The study found a significant difference in health risks associated with self-control among university students. The results are similar to previous studies that investigated the difference in self-control related health risks between individuals with an external locus of control and individuals with an internal locus of control (Asadi-Pooya et al., 2007; Rotter, 1966). In this study, participants with an external locus of control perceived themselves as not capable of effectively reducing health risks associated with self-control (Mullins & Rothe, 2008).

Participants with an external locus of control differed from participants with an internal locus of control in terms of health risks associated with fatalism. This difference is also confirmed in other studies on locus of control and health (Marks et al., 2008; Rotter,

1966; Skinner, 1971). Fatalism is considered as a health risk in locus of control research (Cameron & Griffiths, 2009; Magnani & Li, 2007). In this study, participants with an external locus of control believed in supernatural powers as instrumental in reducing health risks and HIV and AIDS risk (Anderson, 2000; Cameron & Griffiths, 2009; Levers, 2006).

There was a significant difference in achievement-oriented behaviour between participants with an external locus of control and participants with an internal locus of control. This was consistent with previous studies on locus of control and achievement-oriented behaviour (Crandall et al., 1962; Cavanagh & Huston, 2006; Rotter, 1966). In this study, participants with an external locus of control showed low achievement motivation to reduce health risks (Friedland et al., 2009; Lefcourt, 1976; Manderson et al., 2009).

Deferment of gratification differed significantly between the two groups. The results of this study were consistent with other studies on locus of control and deferment of gratification (Lefcourt, 1976; Mahrer, 1956; Mischel, 2009; Phares, 1976). Students with an external locus of control showed health risks associated with non-deferment of gratification (Bradshaw et al., 2008; McAdam & Mirza, 2009).

The two groups differed significantly with respect to personal values and expectancies. The findings are consistent with previous locus of control research results which found differences in personal values and expectancies between individuals with an external locus of control and individuals with an internal locus of control (Lefcourt, 1976; Mansyur et al., 2009; Tang et al., 2006). University students with low personal values and expectancies were mostly external in locus of control in this study (Lefcourt, 1976; Laffrey & Insenberg, 2003; Phares, 1976).

Students with an external locus of control differed from students with an internal locus of control in relation to social alienation. The results of this study confirmed previous studies on locus of control and health risks (Dean, 1961, 1969; Krause & Boderick, 2006; Rotter, 1966). Most of the participants with an external locus of control experienced social alienation in this study (Harrow et al., 2009; Nettler, 1957).

Having looked at the difference in health risk between students with an external locus of control and students with an internal locus of control, the study investigated the association between locus of control-based variables and HIV and AIDS risk before training.

6.4.2 The relationship between locus of control-based variables and HIV and AIDS risk before training.

The locus of control-based variables that constituted the training programme correlated positively with HIV and AIDS risk, predicted HIV and AIDS risk, and a combination of the variables generated some models with goodness of fit suitable for use in HIV and AIDS risk reduction training programmes. The relationship between the locus of control-based variables and HIV and AIDS risk is discussed.

Social systems control correlated significantly with HIV and AIDS risk and it could be used in predicting HIV and AIDS risk. The results confirm previous studies which found an association between low levels of social systems control and health risks (Rotter, 1966; Phares, 1976). Individuals with an external locus of control generally show low levels of social systems control as compared to individuals with an internal locus of control (Shi, Tsai, & Kao, 2009). Low levels of social systems control are associated with low social mobilisation for better health (Heywood, 2009; Lehavot, Walters, & Simoni, 2009). In terms of health promotion and disease prevention, individuals and communities with high levels of social systems control could mobilise health resources and engage authorities for health improvement. Participants with an external locus of control in this study were expected to work as teams to prevent diseases and they were expected to influence or participate in the formulation of student health policies. They could litigate for healthcare quality improvement in the university (Broome, Flynn, Knight, & Simpson, 2007; Watts & Flanagan, 2007). In this study, students with an external locus of control were expected to show proactive health promotion behaviours in university by engaging the university bureaucratic healthcare system in improving student health facilities and services. They complained about poor-quality condoms and other sexual

health products but without taking steps with the university administrators to correct the situation.

In this study, university students with an external locus of control showed negativism and lack of initiative to improve health conditions affecting them. The majority of students with an external locus of control acknowledged that they did not adequately mobilise their own resources to deal with HIV and AIDS risk. They reported infrequent visits to the university clinic or the HIV and AIDS counselling centre. On the whole, they reported behaviours that did not actively utilise the university's healthcare facilities to promote their own health and that of others. The results of this study are in tandem with earlier findings that individuals with low levels of social systems control are more likely to have an external locus of control orientation and could be susceptible to diseases (Eng & Blanchard, 2007; Rotter 1990). Students with low levels of social system control reported health problems such as stress, depression, or suicide ideation (Hobbs & McLaren, 2009). In this study the majority of students with low levels of social systems control reported helplessness and powerlessness in relation to the prevention of HIV and AIDS in a university environment. Most of the students with low levels of social systems control reported less health information-seeking behaviours and they were not active in looking for HIV and AIDS information. They could have been more active in campus HIV and AIDS awareness campaigns and participating in behaviour change training workshops (Greenberg et al., 2006; Phares 1976).

Participants with low levels of social systems control could have been facing challenges of understanding university policies and procedures (Byma et al., 2009; Rhodes et al., 2009). First-year university students could face financial and social problems associated with integration into the cosmopolitan culture of the wider university community (Banya & Elu, 2001; Harwood et al., 2007). These negative experiences could make students develop a mistrust of the system and hence the affected students might not believe in their effort to make things happen in their favour (Heywood, 2009; Lehavot et al., 2009). The fact that most of the students came from rural areas could imply that the challenges of a big urban environment could have had a negative impact on their perceptions of social systems control (Broome et al., 2009; Stadler et al., 2007). The findings are

consistent with previous studies which indicated that external locus of control and low social systems control are associated with unhealthy psychological functioning (Broome et al., 2007; Lefcourt, 1976; Phares, 1976; Watts & Flanagan, 2007).

Locus of control-based social systems control was found to be a good predictor of HIV and AIDS risk in this study. In previous studies, high social systems control correlated positively with health-protective behaviours (Chavis & Wandersman, 1990; Eng et al., 2007). In this study, social systems control predicted variation in HIV and AIDS risk (Brownstein et al. 2005, Berridge 2004, Katernal et al. 2009).

There was a significant relationship between locus of control-based self-control and HIV and AIDS risk. The results of this study support previous studies which found an association between lack of self-control and health risks (Lefcourt, 1976; Rotter, 1966). Studies on individuals with inadequate self-control skills report more self-harm behaviours and proneness to disease infection (Freedman et al., 1993; Hays & Stewart, 1990; Lefcourt, 1976; Rotter, 1966). In locus of control research, it is argued that external locus of control orientation is a risk factor in disease prevention and health promotion (Goggin et al., 2007; Phares, 1976). In early studies on locus of control, it was found that a large percentage of college students with an external locus of control engaged in unprotected sex and they infrequently used contraceptives (Lefcourt, 1976; Phares, 1976). In this study, some students with an external locus of control reported inconsistent condom use and risk sexual practices. In personal health management, higher levels of self-control could be essential in reducing health risks among individuals and groups.

Self-control is associated with self-regulation and control of desired reinforcement (Cleanthous & Christodoulou, 2009; Marshall et al., 2009). Students with adequate levels of self-control were expected to regulate or refrain from engaging in undesirable behaviours in this study. Individuals with an internal locus of control reported exercising a great deal of self-control in this study (Lefcourt, 1976; Martin et al., 2007; Phares, 1976). They reported that they could control their impulses and behaviours in tempting sexual situations. Low levels of self-control were associated with careless risk-taking behaviours, suggestibility, gullibility, susceptibility to social pressure, non-compliance

with prescribed medical regimens, hurried decisions, disease proneness, indulgence and violence (Bameister & Alquist, 2009; Delisi & Berg, 2006). In this study, participants with an external locus of control and low self-control skills reported some of these behaviours. Health complaints such as hangover, headaches, vomiting in sleep, drug and alcohol abuse, delirium tremens and compulsive sex were associated with low levels of self-control in this study (Alm, Neumark-Sztainer, Story, & Boutelle, 2009; Shultz, Corbett, & Allen, 2009). In this study, some of the university students with an external locus of control and low self-control skills could have been vulnerable to groupthink and activities associated with peer pressure and social influence.

In social learning theory, self-control is associated with ego-control and the ability to deal with reality (Fujita & Han, 2009; Rotter 1966). Participants with an internal locus of control reported that they were able to monitor themselves and their health against HIV and AIDS in this study (Allen, Weeks & Moffitt 2005; Phares, 1976). Self-control was associated with internal locus of control and HIV and AIDS risk reduction (Allen et al., 2005; Lefcourt 1976).

It was found in this study that participants who reported great interest in HIV and AIDS risk reduction education had higher levels of self-control. Individuals with an external locus of control had low perceptions of self-control in HIV and AIDS risk reduction (Shmueli & Prochaska, 2009). It is contended by social learning theorists that self-control and locus of control could influence an individual's decisions in sexual relations, having safer sex or use of contraceptive products (Lefcourt, 1976; Mann & Ward, 2007; Phares, 1976). Some of the university students with an external locus of control in this study did not report planning for safer sex (Burns & Dillon, 2005, Lefcourt 1976, Phares 1976). Low levels of self-control and unplanned sex were associated with HIV and AIDS risk in this study (Rosengard, et al., 2005).

It is reported in locus of control research that individuals with an internal locus of control are less susceptible to peer pressure than individuals with an external locus of control. Such individuals have been found to have adequate levels of self-control. They tend to show greater attention to detail than individuals with an external locus of control (Hattrup

et al., 2005, Lefcourt 1976; Phares 1976). Individuals with an internal locus of control are more likely than individuals with an external locus of control to scrutinise all aspects of a deal or social engagement before making a final decision and they usually take positions that are well thought out. However, in this study, the majority of students with an external locus of control and low levels of self-control reported sexual behaviours that did not consider careful scrutiny of sexual partners (Parry et al. 2008; Valerio et al., 2006). They tended to make impulsive judgements about situations and their reported sexual behaviours tended to be gullible and less protective (Croson & Sundali, 2005; Lefcourt 1976; Kallmen et al., 2008; Phares; 1976). In this study, careless behaviour and sexual promiscuity characterised by low levels of self-control were associated with HIV and AIDS risk.

The correlation between fatalism and HIV and AIDS risk was significant. However, multiple regression results indicated that the relationship between fatalism and HIV and AIDS risk was non-significant. Structural equation modelling indicated that multicollinearity made fatalism and self-control redundant in the locus of control-based model. Participants with an external locus of control and high levels of fatalism reported HIV and AIDS risk behaviours before training. The results are consistent with early studies on locus of control, fatalism and health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Health beliefs held by the individual could predispose them to health risks. Fatalism is the belief in fate, superstition, chance, or luck.

The results of this study showed that individuals with an external control of reinforcement tended to believe that health outcomes were not contingent upon their own effort or behaviour to reduce health risks (Baron-Epel et al., 2009; Schneider et al., 2009). In this study, the belief in chance, luck, or fate was associated with external locus of control. Most of the participants with an external locus of control believed that HIV infection largely happened by chance or as some form of punishment by external forces (Bussing & Fischer, 2009). In this study, individuals with an external locus of control tended to place less emphasis on the instrumental role played by skills, work, or health-protective behaviours in disease avoidance and health risk reduction (Carr, 2009; Rotter, 1966). It is contended in locus of control research that individuals with an internal locus

of control are generally not interested in ``guessing games`` whereas individuals with an external locus of control tend to value luck or fate, and they show tendencies of the ``gambler`s fallacy`` in health risk reduction (Petry, 2009; Rotter, 1966). In this study, the gambler`s fallacy was evident when participants reported increased HIV and AIDS risk behaviours such as having multiple partners when they new that HIV and AIDS was incurable (Cunningham et al., 2009). Individuals with the gambler`s fallacy in sexual health matters could believe that they are not vulnerable to HIV infection or other diseases through luck or they could have the belief that they are protected by supernatural spirits or faith. Participants with an external locus of control in this study tended to show motivated behaviours in ``chance`` oriented health risk reduction methods (Jenkinson, 2009; Lefcourt, 1976; Phares, 1976; Rotter, 1976). Research on ``chance`` and ``skill`` task difference between internals and externals confirms that fatalism is detrimental to health promotion (Avis-Williams et al., 2009; Phares, 1966). In health risk prevention, fatalism could make individuals more vulnerable to diseases and occupational hazard (Cleemput et al., 2007; Hunter et al., 2007).

Fatalism is associated with cultural and religious beliefs that are regarded as protective against HIV infection (Leclerc-Madlala et al., 2009; Tenkorang et al., 2009). It is argued in this study that fatalism was used as defence behaviour in the face of failure or inability to resolve or understand HIV and AIDS risk (Papatsoris & Anagnostopoulos, 2008). It helped boost self-esteem among participants with an external locus of control and it provided a false sense of security against HIV infection. Illness was attributed to external forces beyond an individual`s capabilities to control or prevent (Van Cleemput et al., 2007). In this study, participants with an external locus of control had cultural and religious beliefs that they believed could protect them from HIV infection (Cebi, 2007). They believed in traditional healers, priests, and prophets in HIV and AIDS prevention (Levers, 2006). In this study, fatalism was characterised by externality, passivity, belief in extrasensory perception, and inaction in HIV and AIDS risk reduction (Goldbeck & Bundschuh, 2007; Lundberg et al., 2007). In view of the fact that human societies tend to protect and institutionalise their cultures, beliefs and religions as a human right, risk HIV and AIDS behaviours among university students in this study were sometimes condoned as a way of life. Some of the students in this study reported using traditional medicines,

religious methods of disease prevention and other cultural practices commonly found in South Africa (Kale, 1995; Kon & Lackan, 2008). They reported participating in some of the traditional or religious functions fully aware of the HIV and AIDS risks associated with such practices (Kalichman et al., 1993).

Achievement-oriented behaviour in this study referred to health-promotive actions that aimed to achieve an individual's set health goals (Aspinwall, 2005; Howell & Buro 2009; Rotter 1966). In this regard, goal-directed behaviours by individuals to reduce or prevent HIV infection was characterised by high levels of achievement motivation in this study (Friedel et al., 2007). Low achievement-oriented behaviour was significantly related to HIV and AIDS risk in this study. Achievement-oriented behaviour had a significant correlation with HIV and AIDS risk. The variable predicted significant variance in HIV and AIDS risk in the locus of control-based training programme. The findings of this study confirm previous results about the relationship between achievement-oriented behaviour and health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966).

It is posited in locus of control research that individuals and communities with low levels of achievement-oriented behaviours in health promotion could be vulnerable to diseases (Bricker et al., 2009; Hart & Evans, 2006). Achievement-oriented behaviours were associated with health-promotion behaviours in this study (Fiscella & Kitzman, 2009; Jerusalem, 2009; Jerusalem & Hessling, 2009). In social learning research, achievement-oriented behaviour is associated with internal control of reinforcement and health risk reduction (Lefcourt, 1976; Rotter, 1982). In contrast, individuals with an external locus of control tend to show low levels of achievement-oriented behaviour in disease risk reduction (Bembenutty, 2009; Marquez et al., 2009). The desire to succeed is important in personal health management and HIV and AIDS risk reduction.

Participants with an external locus of control and low in achievement-oriented behaviours reported health risks and HIV and AIDS susceptibility. Mostly, these were: university students experiencing academic failure, repeat students, students experiencing financial constraints, students experiencing adjustment problems, and students who were being asked to discontinue their studies for various reasons. Students with low achievement

motivation and external in locus of control could be at risk of alcohol and substance abuse, depression, suicide ideation, and adjustment disorders (Brook et al., 2006; Liang, et al., 2007). In this study, participants with an external locus of control reported psychological disorders such as depression and psychosomatic ailments (Hall et al., 2006; Harvey & Bellack, 2009). It was observed in this study that university students with low levels of achievement motivation tended to withdraw from health interventions offered by the university (Dandeneau & Baldwin, 2009; Ebbeling et al., 2007; Harrow et al., 2009). In terms of locus of control research, individuals with an external locus of control are more likely to blame the environment for failing to achieve their health objectives (Phares 1976, Zhou et al., 2009). Among participants with an external locus of control and low achievement-oriented behaviour, success in maintaining health behaviours that were free from HIV and AIDS risk was viewed largely as not achievable (Altin & Karanci, 2008). In this study, consistent promotion of positive health practices in HIV and AIDS risk reduction was regarded as unrealistic and such health-protective behaviours were regarded as practically not related to disease prevention (Carr 2009; Williams et al., 2009).

In this study, university students with an external locus of control and low levels of achievement-oriented behaviour reported sexual promiscuity, substance abuse, low academic performance, diminished individual responsibility, violence and health complaints (Basile et al., 2009; Bembenutty, 2009; Carter-Edwards et al., 2009; Lefcourt, 1976; Phares, 1976). In terms of health control, low achievement motivation is associated with psychopathology and external locus of control (Latimer et al., 2008; Hayness et al., 2006; Smith et al., 2007). Psychopathology in relation to achievement-oriented health behaviours was associated with HIV and AIDS risk in this study (Denny & Steiner, 2009; Eide, Showalter, & Goldhaber, 2009; Murphy et al., 2009).

The relationship between deferment of gratification and HIV and AIDS risk was significant in this study. Deferment of gratification correlated positively with HIV and AIDS risk and was a good predictor of HIV and AIDS risk in the locus of control-based training programme. The findings are consistent with previous studies on locus of

control, deferment of gratification and health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966).

Deferment of gratification is a concept in locus of control research which is associated with health and social risks (Goldberg et al., 2009; Lawton et al., 2009). Individuals with an external locus of control tend to seek immediate reinforcement and they are generally impulsive and impatient (Seeyave et al., 2009). Deferment of gratification is associated with internal locus of control (Plunkett & Buehner, 2009). Some communities and individuals fail to defer gratification and that is interpreted as risk behaviour in locus of control research and in terms of HIV and AIDS risk reduction (Hofstede, 2006). Some of the participants in this study reported failure to delay immediate small rewards for future larger rewards (Bembenutty, 2009; Cummins et al., 2009). The behaviours associated with failure to delay gratification among university students in this study were related to sexual drive, gambling, eating habits, and situations that required postponement of present needs for future gains (Fang & Mowen, 2009; Lefcourt, 1976; Phares, 1976). In HIV and AIDS risk reduction, self-restraint is associated with delay of gratification. Delay of gratification was associated with health-protective behaviours in this study (Bembenutty, 2009; Kinderman, 2009).

Inability to delay immediate gratification was associated with health and social problems such as alcohol-related diseases, smoking-related diseases, high risk sexual practices, sexually transmitted infections and unwanted pregnancies in this study (Benotsch et al., 1999; Crepaz & Marks, 2002). Participants with an external locus of control reported more health complaints and hedonistic behaviours than participants with an internal locus of control (Corral-Verdugo et al., 2006; Francis, & Armstrong, 2007). In this study, participants with an external locus of control and low levels of willingness to defer gratification reported problems such as sexual promiscuity, low academic achievement, risk sexual behaviours, transactional sex due to poverty, debt, credit card abuse, deviance, crime, and student violence involving use of weapons (Bembenutty, & Karabenick, 2004; Deaton, 2002; Farrington, 2005; Fuchs, 2004; Lefcourt, 1983; Plunkett & Buehner, 2007). Such unhealthy behaviours were associated with HIV and AIDS risk in this study (Myers et al., 2009; Winters et al., 2009).

In this study, participants with an external locus of control showed low futuristic planning. They showed tendencies of satisfying immediate bodily needs at the cost of future health risks (Deaton, 2002; Plunkett & Buehner, 2007). In this study, university students with an external locus of control and low levels of deferment of gratification reported less medical insurance cover even though they knew that they needed health protection so that their studies were not disturbed by ill health (Bembenutty, 2009; Deaton, 2002; Levy et al., 2006). Impulsivity and reported failure to resist sexually tempting situations were associated with HIV and AIDS risk among participants with an external locus of control and low levels of deferment of gratification in this study (Wittmann & Paulus, 2008).

It could also be argued that university students and the youth in general tend to show low levels of deferment of gratification (Mao et al., 2009; Peltzer, 2005). Students in this study experienced the transition from: high school life to university life, being high school boys and girls to being university men and women, living in a controlled school environment to a liberal university life in which individual rights and freedoms are promoted and celebrated, and they faced the challenge of moving away from a restrictive and moralistic high school life monitored by parents and teachers to liberal values of university life with no one guiding moral conduct (Mao et al., 2009; Myers et al., 2009). In fact, the university at which this study was conducted tends to focus more on the intellectual development of individuals than health education or issues about morality. Students with an external locus of control in this study showed low inner-resourcefulness to deal with life temptations that could detract them from pursuing their long-term goal of obtaining a university degree (Koehler & Chisholm, 2009). They seemed to be less aware that their future careers could be affected by poor health due to HIV and AIDS.

Personal values and expectancies had a significant relationship with HIV and AIDS risk in this study. The results were similar to previous studies which found an association between personal values, expectancies, and health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966).

Research on locus of control indicates that personal values and expectancies are central to health promotion (Kahn et al., 2009; Yi et al., 2009). Personal values could influence an individual's health-protective behaviours (LaBrie et al., 2009). Individuals and groups have values that they give priority to for survival. These values guide behaviour and are used as a frame of reference in normative behaviour and personal health decisions. In this study, individuals with an external locus of control had low personal values and expectancies for positive health outcomes (Eyal et al., 2009; Lefcourt, 1976; Phares, 1976; Rotter, 1966). Low personal values and low expectancies in a health context predicted HIV and AIDS risk in this study. Participants with an external locus of control had low personal values and expectancies in this study. They showed low personal ambitions and low life dreams (Lan et al., 2009; Lefcourt, 1976).

Participants with low personal values and expectancies reported health problems such as low body image, self-harm behaviours, reckless sexual behaviours, and careless selection of sexual partners (Brausch & Gutierrez, 2009; Lam et al., 2009; Lisak, 1994; Prentice-Dunn et al., 2009). The casual sexual behaviour, as reported by participants, was associated with substance abuse, intimate partner violence, partner abuse, reliance on older partners for financial help including payment of university fees, and sex with unknown people dated on the internet (Klein, 2009; Parry et al., 2009; Peltzer et al., 2009; Pettifor et al., 2009; Rosengard et al., 2006).

Among university students, it could be expected that the desire to obtain a higher qualification could result in the development of intrinsic motivation to succeed, inner-directedness and purposeful behaviour to complete studies. They could have had a positive attitude towards HIV and AIDS risk reduction so that they realised their life dreams (Apostolopoulos et al., 2006; Doyal et al., 2009). Expectancy for positive outcomes is essential for both the healthcare provider and the patient (Au et al., 2009; Murphy, & Harris, 2009; Peleg et al., 2009; Rudy et al., 2009). In this study, university students with an external locus of control and low personal values and expectancies reported that mostly: they did not consider their university lives as of greatest importance, they did not have personal values they were living for, they did not fear losing some of their valuable things and they also reported that the factors that caused people to succeed

and those that caused people to fail were not fundamentally different in real life situations (Burker et al., 2005; Hall & Jones, 2007; Jerome et al., 2009; Jones & Newman, 2009; Schloretd & Heiman, 2003; Thompson et al., 2003). In terms of HIV and AIDS risk, the majority of participants with low personal values and expectancies reported that dying young and dying in old age did not matter much in their lives. Some of the participants reported that there was no relationship between what an individual does and the type of disease they will contract, suffer from, or eventually die of in people`s lives (Hartman et al., 2006; Kushiya et al., 2009; Lefcourt, 1976; Sherman et al., 2000). In this study, university students with an external locus of control, low personal values, and low expectancies were found to be at risk of HIV infection.

Social alienation had a significant correlation with HIV and AIDS risk and was found to be a good predictor of HIV and AIDS risk in the locus of control-based training programme. The findings of this study are in agreement with the results reported by early researchers on locus of control, social alienation and health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966). Communities and individuals experiencing social alienation are usually reported to be vulnerable to diseases (Ross & Mirowsky, 2009). Health risks associated with social alienation among the youth reported in this study were use of alcoholic substances, drugs, conduct disorder, and sexual promiscuity (Dennis, 2009). In this study, participants with an external locus of control and experiencing social alienation in university reported that they experienced meaninglessness in life, depression, suicide ideation, and the perceptions that they were not able to control their destiny in university (Peltzer et al., 2008; Rotter, 1966). Social alienation was associated with HIV and AIDS risk in this study (Butler et al., 2007; Miller et al., 2006; Mao et al., 2009). In this study, social alienation was associated with psychopathology (Bamberg & Abell, 2006; Van Vlierberghe & Braet, 2007). Individuals experiencing social alienation could show behavioural pathology such as powerlessness, normlessness, mistrust, or isolation (Yilmaz & Sarpkaya, 2009). Participants experiencing social alienation reported loneliness, unfriendliness, little prospects for the future, isolation, perceptions of the breakdown of cultural and social ties among students in university and the feeling that the youth`s future in South Africa was doomed in the face of HIV and AIDS (Caspi et al., 2006; Masvaure et al., 2009; Rubin et al., 2009).

University students in this study could have experienced alienation due to such factors as the university academic culture, the apparently impervious university bureaucracy, the social distance between students and lecturers, and the high failure rate of university students in South Africa (Koen et al., 2006; Petersen et al., 2009; Twenge et al., 2004). Participants experiencing social alienation in this study reported that they did not find the university environment as welcoming. They had a negative perception about the outcome of their studies. The university environment was described as having peers and university authorities who were not supportive. The students who experienced alienation felt that they were not wanted by the university system. Participants experiencing social alienation in this study reported that they perceived their lives in university as generally hopeless. They reported normlessness and powerlessness as mechanisms to deal with constraints such as fees affordability, high food prices, transport costs, accommodation costs, and the fear of failing that resulted in university academic sponsors withdrawing financial support (Hammond et al., 2009).

The findings of this study were in tandem with previous studies which showed the relationship between isolation, psychological distress, and HIV and AIDS risk (Kalichman, 2000; Kapetanovic et al., 2009). Substance abuse and depression are risk factors in HIV and AIDS risk reduction (Burke, 2008; Dennis, 2009; Kalichman et al., 2002). Students experiencing alienation were not interested in joining HIV and AIDS health promotion clubs, utilising campus health facilities, getting latest information on HIV and AIDS, and attending behaviour change workshops offered by the university's student development department (Bell et al., 2009; Dixon & Kurpius, 2008).

6.4.3 The efficacy of the locus of control-based training programme in reducing health risks and HIV and AIDS risk.

The locus of control-based training programme reduced health risks associated with social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk. Before training, the means of the variables were larger than the means obtained after training. The impact of the locus of control-based training programme in reducing health

risks associated with locus of control variables and HIV and AIDS risk was confirmed by statistical tests, namely, Levene's test of homogeneity of variance, Friedman's test, Tamhane post hoc test, multivariate tests and *t* tests. These tests confirmed significant variation in means of the variables that constituted the locus of control-based training programme and HIV and AIDS risk across the three phases of the training programme.

The results of the study showed a significant change in locus of control as a result of the training programme. Most of the participants' locus of control shifted towards internal locus of control after training. The results of this study are consistent with previous findings that locus of control could be modified with training (de Charms, 1972; Diamond & Shapiro, 1973; Dua, 1970; Dweck, 1975; Folds, 1971; Frank, 1976; Gorman, 1968; Harvey, 1971; Lefcourt, 1976; McArthur, 1970; Nowicki & Barnes, 1973; Parks et al., 1975; Phares, 1976; Reimanis, 1971, Rotter, 1966; Smith, 1970). The findings support recent studies which indicated that locus of control changes with training and new learned experiences in educational, organisational, and clinical settings (Bendik et al., 2009; Cohen & Fried, 2007; Hastings & West, 2009; Torres et al., 2009; Twenge et al., 2004; Valeda et al., 2007). In the same way, locus of control-related health risks could be reduced by modifying the locus of control orientation of the target population through training (Lefcourt, 1976; Phares, 1976; Rotter, 1966).

In social learning theory, locus of control is not a fixed variable or a trait or typology but a learnt human quality (Allport, 1937; Catell, 1946; Freud, 1927; Lefcourt, 1976; Phares, 1976; Rotter, 1954, 1966). The results of this study showed that the personality of the participants changed significantly after training. The findings of this study are in agreement with the social learning theory argument that an individual's locus of control is often inferred from momentary expressions of their sense of causality, which, when examined at different points in time could be relatively consistent and stable (Lefcourt, 1976; Phares, 1976; Rotter, 1954, 1966). The stability in personality does not imply a permanent quality that is rigid, unchangeable or cast in stone. Participants in this study showed significant changes in personality after training but they still differed significantly in terms of externality and internality after training. The responses of participants in this study were influenced by their current meaningful environment, that

is, the prevailing university environment in which they lived and the larger South African society with upheavals in health, economic, social, and political spheres.

The significant change in locus of control of the participants after training could be justified in terms of social learning theory. It is contended in social learning theory that individuals have a natural tendency to change their minds or constructions of reality in the face of new evidence, experience or training although they often revert to prior positions or remain steadfast in their earlier positions despite sometimes overwhelming evidence for change is available (Lefcourt, 1982; Phares, 1976). The locus of control-based training programme provided this new learning experience in health risk reduction by exposing participants to locus of control methods of dealing with health risks and HIV and AIDS risk. The small learning groups in a diverse university environment could have challenged participants' beliefs about health and HIV and AIDS risk.

The locus of control-based training programme showed significant reduction in health risks associated with social systems control. The results indicated that the change in locus of control towards internal locus of control through training was associated with a reduction in health risks that are related to social systems control (Lefcourt, 1976; Phares, 1976; Rotter, 1976). The results confirm previous studies on the efficacy of locus of control training programmes in reducing health complaints associated with social systems control such as pollution diseases, noise-related diseases, and other preventable diseases caused by human negligence (Lefcourt, 1976; Levenson, 1974). Previous studies showed that patients diagnosed as psychotic, paranoid, or neurotic changed their locus of control orientation from being external to being internal in locus of control through training. Their social systems control scores improved from being low in social systems control to being high on measures of social systems control (Lefcourt, 1976; Levenson, 1974). Among prison inmates, a locus of control-based training programme changed the locus of control of the prison inmates from being external in locus of control to being internal in locus of control (Lefcourt, 1976; Levenson, 1974). Prisoners who had a strong belief in "powerful others" thus indicating an external locus of control orientation, had healthy scores on social systems control after going through the locus of control training programme (Lefcourt, 1976; Levenson, 1974).

The results obtained in this study are in tandem with contemporary studies on social systems control and social action to improve health (Goetzl, 2009; Rotter, 1954). Health training helps individuals to be in control of their health and to be involved in activities that promote health (Bartram et al., 2009; Rhodes et al., 2009). In this study, participants showed better health-promotive behaviours after training. They reported that they could do something better about their health and HIV and AIDS risk reduction in university (Byma et al., 2009). They became more proactive, assertive, participative, and personally effective in dealing with HIV and AIDS risks after training. They demonstrated an ability to apply social systems control skills learnt in the training sessions to deal with various forms of HIV and AIDS risk in various social contexts in South Africa (Campbell, 2004; Campbell et al., 2009; Endresen & Von Kotze, 2005; Friedman, 2006; Tavakoli et al., 2009; Watson, 2006).

The locus of control-based training programme reduced health risks associated with self-control and HIV and AIDS. Participants' locus of control largely shifted from being external to being internal in locus of control. Low levels of self-control increased to high levels of self-control for most of the participants. These results were in line with early studies on the effect of locus of control training on self-control (Lefcourt, 1976; Phares, 1976; Reid & Ware, 1974; Rotter, 1966). Participants trained in the use of locus of control techniques were able to exercise a great deal of self-control.

In this study, participants who were exposed to the locus of control-based training programme showed higher levels of self-control and higher levels of HIV and AIDS risk reduction behaviours after training. The results were similar to studies which demonstrated the effectiveness of locus of control training in improving self-control skills in personal health management (Galliot et al., Schmeichel, & Baumeister, 2006; Mowrer & Viek, 1948; Tangney, Baumeister, & Boone, 2008). Among the participants in this study, high levels of self-control predicted health-protective behaviours, good social adjustment, less pathology, better performance, good interpersonal relationships and self-regulation in sexual relations (Campbell, & Sedikides, 199; Tangney et al., 2008). Self-control was associated with HIV and AIDS risk reduction behaviours in this study (Liddel et al., 2004; Parker, Easton, & Klein, 2000; Stadler, 2003).

The training programme reduced some of the health risks associated with self-control. Most of the participants' levels of HIV and AIDS susceptibility improved after training. The results were consistent with findings reported in other studies on self-control training and health promotion (Bauer, 2006; Dageid & Duckert, 2008). Participants' responses after training showed reduced vulnerability to diseases, uninformed compliance, suggestibility, and reduced impulsive sensation-seeking behaviours (Bauman et al., 2007; Dageid & Duckert, 2008; Kandala, et al., 2008; Rosser, Oakes, Horvath, Konstan, Danilenko, & Peterson, 2009; Sariola, 2009).

The locus of control-based training programme significantly reduced health risks associated with fatalism and HIV and AIDS risk in this study. At the end of the training programme, most of the university students who initially had an external locus of control, fatalistic ideas about health risks, and risk HIV and AIDS behaviours, showed reduced levels of fatalism and HIV and AIDS risk (Gwandure, 2008a). The findings are consistent with the results of early studies that documented that locus of control training reduces fatalism and associated health risks (Lefcourt, 1976; Lewis, 1961; Phares, 1976).

At the end of the training programme, participants in this study showed reduced health risks associated with fatalism. In this study, participants demonstrated higher levels of the ability to differentiate between fact and myth in health risk reduction using social learning concepts (Cunningham et al., 2009). They demonstrated in their small learning groups, group presentations, and in their responses on questionnaires how South African cultures, religions, fairy tales, and traditions could be used in social learning theory to reduce HIV and AIDS risk (Greyson, 2006; Leclerc-Madlala et al., 2009; Magnani & Li, 2007; Shisana & Simbayi, 2002; Tenkorang et al., 2009).

The locus of control-based training programme had a significant effect on health risk reduction with respect to achievement-oriented behaviours and HIV and AIDS risk. The effect of the training programme on locus of control and achievement-oriented behaviour was similar to the results reported by early researchers on locus of control, achievement-oriented behaviour, and health risks (Lefcourt, 1976; Phares, 1976; Rotter, 1966).

In this study, participants were able to identify HIV and AIDS risks and they came up with health preventive targets that could be followed by individuals to reduce chances of HIV infection or the development of HIV into full-blown AIDS (Friedland et al., 2009; Manderson, Aagaard-Hansen, Allotey, Gyapong, & Sommerfeld, 2009; Stewart, 2009). The locus of control principles helped them deal with preventable diseases and HIV and AIDS risk (Abzug & Pelton, 2009; Essuon et al., 2009; Hoque & Hoque, 2009; Lauren et al., 2009; Schneider et al., 2009). In this study, participants showed improved achievement-oriented behaviours after training and they were able to describe in their groups discussions how they were going to reduce HIV and AIDS risks in university. The responses of most of the participants who had an external locus of control before training shifted towards internal locus of control after training. Before training, most of the participants with an external locus of control showed behaviours associated with low achievement motivation such as low trust of university grades and lecturers, withdrawal from university health promotion activities, blaming parents for low achievement in university, low contingency between an individual's sexual practices and HIV and AIDS risk reduction behaviours, lack of trust in an individual's own abilities, and distorted ideas about why students were excluded from the university. After going through the locus of control-based training programme, participants were able to identify health risks associated with non-achieving behaviours and how low achievement motivation could lead to psychopathology and HIV and AIDS risk (Chartier, Walker, & Naimark, 2009; Rotheram-Borus et al., 2009; Pang et al., 2009).

The locus of control-based training programme showed a significant reduction in health risks associated with deferment of gratification in this study. The results confirmed what was found in previous studies that locus of control training reduces health risks associated with delay of gratification (Lefcourt, 1976; Karabenick & Srull, 1978; Mahrer, 1956; Melges, & Weisz, 1971; Mischel, 1966; Phares, 1976; Rotter, 1976).

Participants in this study reported behaviours that promoted delay of gratification after training. Their scores on HIV and AIDS risk also improved as reported in similar studies on locus of control and deferment of gratification (Chao et al., 2009; Straus, 1962; Williams & Thayer, 2009). Participants in this study discussed and in some instances role

played the health risks associated with unwillingness to delay gratification. They described how delay of gratification could reduce HIV and AIDS risk among students (Evenden & Ryan, 1996; Gibson et al., 2009). Excessive consumption of alcohol and use of drugs before sex were associated with HIV and AIDS risk and indulgence (Guerrieri et al., 2008; Nederkoorn, & Jansen, 2008; Seeyave et al., 2009; Whitaker, 2009; Peltzer et al., 2009). Participants identified addictive disorders such as pathological gambling and non-delay of gratification as risk factors in HIV and AIDS risk reduction among the youth in South Africa (Griffin, Botvin, & Nichols, 2006; Hariri et al., 2006; Urassa et al., 2009). In this study, participants discussed the relationship between unwillingness to delay gratification and HIV and AIDS risk with respect to behaviours such as pleasure-seeking, high financial spending, ostentatious consumption, bingeing and having multiple sexual partners for financial security (Myers et al., 2009; Winters et al., 2009; Myrseth, Fishbach, & Trope, 2009; Norvilitis et al., 2006). After undergoing the locus of control-based training programme, participants reported a greater desire to place less importance on the value of present reinforcement or immediate satisfaction at the expense of future health and life after university (Attance & Jackson, 2009; Divine & Lepisto, 2005; Husman & Shell, 2008).

Personal values and expectancies among participants with an external locus of control improved significantly after training. Health risks associated with personal values and expectancies were reduced after training. The scores of participants on HIV and AIDS risk improved after training. This study, like previous studies, showed that locus of control-based training can reduce health risks associated with personal values and expectancies (Lefcourt, 1976, Phares, 1976; Rotter, 1966).

In this study, participants with an external locus of control and low expectancies showed risk HIV and AIDS scores before training (Hartman et al., 2006; Kushiya et al., 2009; Lefcourt, 1976; Sherman et al., 2000). After training, participants reported higher personal values, life expectancies, ambitions, and aspiration about their education and careers on completion of their studies (Jerome, 2009; Mechner, 2008; Yang et al., 2007). They reported that HIV and AIDS could spoil their future plans if they did not engage in

safer sexual practices (Doyal et al., 2009; Jones & Newman, 2009; Kalichman et al., 2007; Lewin et al., 2007).

The locus of control-based training programme showed a significant reduction in health risks associated with social alienation. Participants showed less risk HIV and AIDS scores after training. The effect of the training programme was consistent with what was reported in previous studies that locus of control-based training programmes reduced health risks associated with social alienation (Dean, 1961, 1969; Lefcourt, 1976; Phares, 1976; Qin, 2008; Rotter, 1966).

Participants discussed in groups and demonstrated in their responses how social alienation was related to HIV and AIDS risk. They discussed situations in which university students could experience meaninglessness, normlessness, self-estrangement and powerlessness in relation to their ability to prevent, reduce or control HIV and AIDS risk in university (Petersen et al., 2009; Sunmola, 2004). They found social isolation as a risk factor in HIV and AIDS risk reduction among the youth in South Africa (Love, 2008; Hajda, 1961; Khajawa & Dempsey, 2008). They explored ways of making the university environment more meaningful and more satisfying to the students (Agrawal & Chahar, 2007; Fitzgerald, 2009; Dean, 1961; Rotter, 1954).

Participants' health risk scores were significantly reduced after going through the locus of control-based training programme. The reduction in HIV and AIDS risk among university students was attributable to the efficacy of the locus of control-based training programme in this study. Participants reported higher knowledge levels of HIV and AIDS risk after training (James et al., 2004; Schaalma et al., 2009). Higher knowledge of HIV and AIDS risk was associated with risk reduction behaviours among the participants (Matthews & Harrison, 2009). Participants demonstrated an understanding of current research findings on HIV and AIDS in South Africa and abroad (Djokic et al., 2009; Forrest et al., 2009; Jones et al., 2009; Malow et al., 2009). The training programme is associated with a significant reduction in negative attitudes towards HIV and AIDS and people living with HIV and AIDS. The scores of participants improved after training (Ahmed et al., 2009; Relf et al., 2009; Selikow et al., 2009). The training programme is

associated with a significant reduction in negative beliefs about HIV and AIDS risk reduction (Amornkul et al., 2009; Peltzer et al., 2008; Ragnarsson et al., 2009; Roura et al., 2009; Wakefield et al., 2009). Participants reported less risk sexual practices after training (Klein, 2009; Parry et al., 2009; Peltzer et al., 2009).

6.4.4 Short-term effects of the locus of control-based training programme

The ``short-term effect`` of the training programme refers to the difference in psychological functioning before training and one month after training. Participants showed significant changes, (at .05 level of significance) in locus of control, social systems control, self-control, fatalism, achievement-oriented behaviours, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk after training. According to the research design of this study, the change in personality, locus of control-based health risks and HIV and AIDS risk was associated with the efficacy of the training programme. It is argued in this study that participants learned the locus of control concepts and understood them. It is contended in this study that the internalised social learning principles could have contributed immensely to the change in locus of control towards internality for most of the participants in this study. The internalised or learnt social learning principles could have contributed significantly towards the shift in health risk behaviours towards health-protective behaviours for most of the participants in this study. The responses of the participants obtained one month after training indicated that, for the most part, participants in this study had put into practice what they learnt in their groups by providing less risk responses about their health behaviours and HIV and AIDS preventive and control strategies.

6.4.5 Medium-term effects of the locus of control-based training programme

In this study, ``medium term effect`` refers to the difference in levels of locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation and HIV and AIDS risk before training and three months after training. The difference in psychological functioning between the first phase and the third phase of the training programme was statistically significant (at .05 level of significance). The results suggest

that the locus of control-based training programme was efficacious in improving personality and reducing locus of control-based health risks and HIV and AIDS risk among the participants three months after training.

The findings of this study suggest that the change in participants' locus of control due to training was fairly stable three months after training. This could perhaps indicate a gradual gravitation towards permanent risk reduction behaviours among the participants who participated in the locus of control-based training programme. Participants internalised what they were taught and could apply the social learning concepts they learnt in the study to report health risk reduction behaviours associated with locus of control, social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk over three months. The results suggest a change in risk behaviours and an improvement in protective health habits after training. It is argued in social learning theory that evidence of learning is shown by a stable change in behaviour. The healthier personality and risk reduction scores of the participants obtained in the short-term and in the medium-term in this study could be indicative of learning and a steady maintenance of HIV and AIDS risk reduction behaviours among the participants.

6.5 Conclusion

This chapter discussed the results obtained in this study. The chapter discussed the development, implementation, and evaluation of the locus of control-based training programme for HIV and AIDS risk reduction. The chapter discussed the difference in health risks between participants with an external locus of control and participants with an internal locus of control. The relationship between locus of control-based variables and HIV and AIDS risk were discussed. The study finally looked at the overall efficacy of the locus of control-based training programme in modifying personality, reducing locus of control-based health risks and HIV and AIDS risk among participants after training. The short-term and medium-term effects of the training programme on health risk reduction were discussed. The next chapter focuses on the summary, conclusions and recommendations of the study.

CHAPTER 7

SUMMARY, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

This chapter provides the summary, conclusions, limitations, and recommendations of the study. It highlights the main findings of the study and how the results could be used in HIV and AIDS risk reduction training programmes in South Africa. The recommendations suggested in this section of the study could apply to researchers and organisations working in the area of HIV and AIDS risk prediction, prevention and control.

7.1 SUMMARY

The aim of the study was to develop, implement, and evaluate the efficacy of a locus of control-based training programme in reducing HIV and AIDS risk. The locus of control-based training programme was expected to improve personality and reduce health risks associated with social systems control, self-control, fatalism, achievement-oriented behaviours, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk among university students. The main hypothesis of the study was that the locus of control-based training programme could demonstrate a significant reduction in locus of control-based health risks and HIV and AIDS risk.

The first phase of the training programme involved the development of the locus of control-based training programme. The training programme was piloted on a relevant sample of first-year students before implementation. Data that were obtained from the pilot study were used to refine the measuring instruments and the content of the training programme. In the first phase, participants' health risks were assessed before training.

The second phase of the training programme involved the implementation of the training programme. Implementation of the locus of control-based training programme involved

training of participants in locus of control-based principles of health risk reduction. Participants were divided into small training groups of about 17 students per group. The small groups allowed participants to interact and exchange ideas during group discussions and other associated group learning activities.

The assumption of the training programme was that exposure to locus of control principles of behaviour management could influence an individual's risk reduction behaviours in the context of HIV and AIDS. Studies on behaviour change indicate that training interventions are a useful tool in the achievement of health risk reduction (Buse & Andrasik, 2009; Jemmott, Jemmott, & Fong, 1998). The findings of this study were similar to the results of other health risk reduction training programmes in which participants showed a reduction in sexual risks. Participants in this study showed significant risk reduction behaviours in terms of unprotected sex, multiple sexual partners, condom use and negotiation for safer sex. There was a marked improvement in health-protective behaviours after training as reported in previous studies (Johnson, Scott-Sheldon, Smoak, LaCroix, Anderson, & Carey, 2009; Kelly, et al., 1991).

It was the argument of this study that the locus of control-based training programme would change participants' locus of control and associated health risks. The training programme was expected to reduce participants' locus of control orientation from high levels associated with external locus of control to low levels associated with internal locus of control (Denkowski, Denkowski, & Omizo, 1983; Rubin, Gold, & Primack, 2009). It was the assumption of this study that locus of control orientation could be associated with health risk behaviours and HIV and AIDS risk. A change or modification of locus of control was expected to result in health-protective behaviours. Students with an external locus of control were expected to shift towards internal locus of control after training. Modifying locus of control orientation of participants from "extreme externality" to "extreme internality" on a continuum was expected to result in HIV and AIDS risk reduction behaviours as reported in other studies (Denkowski et al., 1983; Laforest, Hasnaoui, Pribil, Ritleng, Schwalm, & Van Ganse, 2009). Participants with an internal locus of control were expected to come out of the training programme more internal and showing stronger risk reduction behaviours (Hastings & West, 2009; Israel,

Guile, Baker, & Silverman, 1994). Participants with an external locus of control were expected to shift towards internal locus of control after training (Bendik et al., 2009). Both internals and externals were expected to have their personalities modified with training and to show healthier risk reduction behaviours after training (Brettmann & Jaspersen, 2009; Denkowski et al., 1983; Israel et al., 1994).

The third phase of the training programme involved the evaluation of the efficacy of the locus of control-based training programme in reducing health risks and HIV and AIDS risk among participants. The effectiveness of the training programme was evaluated by comparing self-reported health risk responses of participants before training and after training. The evaluation involved collection of baseline data, collection of data one month after training, and collection of data three months after training. The changes in psychological health functioning from time 1 (pre-training scores), time 2 (scores obtained one month after training), and time 3 (scores obtained three months after training) were assessed for every participant. The comparison of individual scores across the three training phases demonstrated changes in health behaviour and HIV and AIDS risk. The change was attributable to the efficacy of the training programme although some unidentified confounding variables could have influenced the results in a latent way. The same battery of tests that was administered in the pre-training phase was administered in the post-training phase to assess individual changes in health risk behaviour after training. The measuring instruments were Rotter's locus of control scale, social systems control questionnaire, self-control questionnaire, fatalism questionnaire, intellectual achievement responsibility questionnaire, deferment of gratification scale, personal values and expectancies questionnaire, Dean's alienation scale, and the HIV and AIDS risk scale. The testing of participants one month after training assessed the short-term effects of the locus of control-based training programme in reducing health risks and HIV and AIDS risk. Retesting of participants three months after training was done to measure changes in health risk behaviours and HIV and AIDS risk in the medium-term (Agresti & Finlay, 2008). Differences in health risks and HIV and AIDS risk before training and after training were attributed to the impact of the training programme in

reducing locus of control-based health risks and HIV and AIDS risk (Keppel & Wickens, 2004).

Data analysis looked at statistical significance of the difference in health risks and HIV and AIDS risk between participants with an external locus of control and participants with an internal locus of control. The results showed significant health risk differences before training. The relationships between locus of control-based variables and HIV and AIDS risk were assessed. The study found significant correlations between locus of control-based variables and HIV and AIDS risk. The analysis examined the significance of the locus of control-based variables in predicting HIV and AIDS risk. The locus of control-based variables significantly predicted HIV and AIDS risk among the participants. However, variables such as self-control, fatalism and social alienation showed high correlations with HIV and AIDS risk but due to multicollinearity they did not predict significant relationships with HIV and AIDS risk in the locus of control-based training model. The study tested the hypothesis that the locus of control-based training programme could reduce health risks and HIV and AIDS risk. The results rejected the null hypothesis that the locus of control-based training programme had no effect on health risks HIV and AIDS risk reduction. The locus of control-based training programme was efficacious in reducing health risks associated with social systems control, self-control, fatalism, achievement-oriented behaviour, deferment of gratification, personal values and expectancies, social alienation, and HIV and AIDS risk

7.2 Conclusions

The findings of this study indicate that locus of control as a personality construct could influence an individual's health behaviours in novel social contexts. Locus of control is associated with health risks and HIV and AIDS risk. Internal locus of control is associated with health-protective behaviours and HIV and AIDS risk reduction behaviours. In this study, the responses of participants on measures of health risk and HIV and AIDS risk were almost similar to the results found in other studies in South Africa. The study sample represented the 15 to 24 age group that is reported to be at risk of HIV infection in South Africa and Sub-Saharan Africa as highlighted in the literature

review. The majority of university students with an external locus of control in this study showed high risk HIV and AIDS behaviours before training. The reduction in HIV and AIDS risk after training indicates that the locus of control-based training programme was efficacious in reducing HIV and AIDS risk among university students. It is interesting to note that the same rudimentary locus of control factors that were used in health risk reduction training in the 1950s, 1960s, and 1970s as components of Rotter's social learning theory of personality were found efficacious in reducing locus of control-based health risks and HIV and AIDS risk in this study. Even though the factors were not developed into a coherent locus of control-based model that could be used in health risk prediction and health risk reduction in the 1950s, 1960s, and 1970s, as single variables, they provided isolated reports about their efficacy in reducing health risks. The use of these variables in a locus of control-based training programme was found to be effective in reducing HIV and AIDS risk among the participants.

7.3 Limitations of the study

The training programme was based on Rotter's social learning theory which was developed in 1954. The locus of control construct was developed in 1966 by Rotter and other researchers. The locus of control-based variables that made up the training programme in this study could be found in other disciplines as well, sometimes with a slightly different meaning. Rotter (1966) defended this aspect and highlighted the importance of a multidisciplinary approach to the study of human behaviour in a health setting. In fact, the locus of control-based factors broadened and enriched the locus of control construct and made it more effective in health risk reduction training. It could be argued that some of the sources used in defining locus of control and its associated variables in this study were old and they might not have been useful to the understanding of contemporary issues in HIV and AIDS risk reduction. Such a position could be apparently plausible considering that most of the literature review on the theoretical foundations of this study was based on Rotter's early research on social learning theory and health from the 1950s up to the 1970s. However, when the same concepts were tested in this study, it was found that they significantly predicted health risks and HIV and AIDS risk. When the same factors were used in the training programme in this study they

were found to be effective in reducing health risks and HIV and AIDS risk. The essential findings of this study were that the social learning principles, concepts, and variables immensely contributed to the understanding of HIV and AIDS risk and its reduction through locus of control-based training methods.

It could be critiqued that the reduction in health risks and HIV and AIDS risk could have been largely due to the efficacy of the the training programme and not merely a change in locus of control. It could as well be pointed out as a weakness of the study that some of the participants could have memorised, by rote learning, the key issues involved in HIV and AIDS risk reduction without understanding the locus of control concepts involved in behaviour change. The results of this study indicated that the locus of control-based training programme was successful in providing an experiential learning environment in which participants were involved in learning activities that enabled them to understand health risks and HIV and AIDS risk among the youth in South Africa. It is common for students to cram answers for an examination or test. In this study, rote learning might not have helped participants understand health risks associated with the locus of control-based factors and HIV and AIDS risk among the youth internationally and in South Africa. The active involvement of the participants in learning activities, open discussions, role plays and small interactive group discussions could have contributed to the modification or improvement in locus of control orientation, health risk reduction and HIV and AIDS risk reduction. Peer experiential talk about locus of control and HIV and AIDS risk reduction in small interactive groups and in pairs could have helped participants understand locus of control and HIV and AIDS risk reduction concepts better. Each participant had a role and tasks to deliver and share with others to such an extent that social loafing in these small learning groups was limited. It is therefore argued in this study that the significant modification in personality, reduction in health risks and HIV and AIDS risk was largely attributable to the efficacy of the locus of control-based training programme. It is argued in this study that meaningful learning in a meaningful learning environment resulted in change of locus of control and reduction in health risk behaviours. The stable health-protective behaviours evident in the short and medium terms of the training programme could be regarded as evidence of the longitudinal

effectiveness of the locus of control-based training programme in reducing health risks and HIV and AIDS risk among the participants in this study.

The results of this study may not be reflective of the true health risks of all the youth in South Africa. The findings could be generalised to university and college students in South Africa. University students could be fairly faster in understanding health concepts. It could be expected that the results obtained in this study could be different when different youth populations outside of universities and colleges in South Africa are used as participants. However, the study sample seemed to represent the larger population of the youth in South Africa with respect to HIV and AIDS risk.

The study acknowledges the limitations associated with repeated measures. Some subtle extraneous variables could have affected the results of this study as the study did not control for unpredictable events happening between the training periods. However, no negative events were reported in this study.

7.4 Recommendations

The findings of this study could be useful to organisations that provide health education and HIV and AIDS risk reduction training programmes to young people in South Africa. The locus of control-based training programme could be used in identifying health risks in a target population before training as part of needs assessment intervention. When health risks are identified, the health educator could then identify locus of control-based variables relevant to the study sample and purpose of study to design a training programme. It could be recommended in this study that health educators should first establish health risks in a target population before training and then identify locus of control-based factors that could constitute the training programme. Use of correlations, multiple regression, and structural equation modelling helps the health educator to build locus of control-based training programmes that have variables which have a high correlation with HIV and AIDS risk, can predict HIV and AIDS risk, and generate alternative training models with goodness of fit to predict HIV and AIDS risk. Statistical inferences are important in building effective locus of control-based programmes for HIV and AIDS risk reduction.

The locus of control-based training programme to reduce HIV and AIDS risk among the youth could be used alongside existing models in health risk reduction education in South Africa. There is a myriad of health preventive models that are currently used all over the world to reduce and prevent health risks. In South Africa, various new models are being tried out as the traditional health promotion models seem to be less effective in reducing HIV and AIDS risk among the youth in South Africa. The locus of control-based training programme has demonstrated that it could be used in HIV and AIDS risk reduction training with significant success among university students in South Africa. It could be recommended that health educator use a variety of HIV and AIDS risk reduction models in South Africa. Training programme variety is essential in health risk reduction because a training programme that favourably appeals to one training group might not be appealing to the other group of trainees or participants. Health educators are always faced with training challenges peculiar to the demographic composition of the participants. It is strongly recommended in this study that a locus of control-based training programme could be one of the best health training models that could be used in HIV and AIDS risk reduction in South African universities. The training programme could be suitable to the diverse South African population in that it looks at cultural, religious, social, economic, and political aspects of HIV and AIDS risk in South Africa.

Directions for future research on locus of control, health risks and HIV and AIDS risk could focus on the development of locus of control-based training models to reduce health risks and HIV and AIDS risk. The locus of control-based factors could be combined to make various health models and training programmes that could be used by health educators. Future research in the area of locus of control and HIV and AIDS risk could focus on various social contexts that could affect an individual's health functioning in the context of HIV and AIDS risk. Health risk researchers could focus on the individual's perception of health control in various social contexts in order to predict health behaviour and HIV and AIDS risk. Researchers could broaden the scope of HIV and AIDS risk research in South Africa by incorporating Rotter's social learning theory and locus of control-based risk factors in health promotion. Based on the findings of this study, it is strongly recommended that researchers and health educators should target locus of control as a risk factor in HIV and AIDS risk reduction training.

REFERENCE LIST

- Abraham, C., Sheeran, P., & Johnston, M. (1998). From health beliefs to self-regulation: Theoretical advances in the psychology of action control. *Psychology and Health*, 13, 569-591.
- Abrahams, N., Jewkes, R., Martin, L. J., Mathews, S., Vetten, L., & Lombard, C. (2009). Mortality of women from intimate partner violence in South Africa: A national epidemiological study. *Violence and Victims*, 24, 546-556.
- Abzug, M. J., & Pelton, S. I. (2009). Preventing invasive pneumococcal disease in HIV infected children: Expanding the tool box. *The Journal of Infectious Diseases*, 199, 1109-1111.
- Acharya, N., & Joshi, S. (2009). Influence of parents' education and achievement motivation of adolescents. *Indian Journal of Social Science Research*, 6, 72-79.
- Ackermann, L., & De Klerk, G. W. (2002). Social factors that make South African women vulnerable to HIV infection. *Health Care for Women International*, 23, 163-172.
- Adair, S. (2008). Status and solidarity: A reformulation of Early Durkheimian theory. *Sociological Inquiry*, 78, 97-120.
- Adam, B. (2009). Culture and future matters: An exploration in the spirit of Max Weber's methodological writings. *Time and Society*, 18, 7-25.
- Adam, H. (1997). The Nazis of Africa: Apartheid as a holocaust. *Canadian Journal of African Studies*, 31, 364-370.
- Adler, A. (1924). *The practice and theory of individual psychology*. New York: Harcourt, Brace & Co., Inc.

- Ahmed, N., Flisher, A. J., Matthews, C., Mukoma, W., & Jansen, S. (2009). HIV education in South African schools: The dilemma and conflict of educators. *Scandinavian Journal of Public Health*, 37, 48-54.
- Agrawal, R. K., & Chahar, S. S. (2007). Examining role stress among technical students in India. *Social Psychology of Education*, 10, 77-91.
- Agresti, A. & Finlay, B. (2008). *Statistical methods for social sciences*. London: Pearson
- Airhihenbuwa, C., Okoror, T., Shefer, T., Brown, D., Iwelunmor, J., Smith, E., Adam, M., Simbayi, L., Zungu, N., Dlakulu, R., & Shisana, O. (2009). Stigma, culture, and HIV and AIDS in the Western Cape, South Africa: An application of the PEN-3 Cultural Model for community-based research. *Journal of Black Psychology*, 35, 407-432.
- Ajzen, I. (2005). *Attitudes, personality and behaviour*. London: Routledge.
- Akande, A. (2008). Comparing social behaviour across culture: The “what” and “why” questions. *Social Indicators Research*, 92, 591-608.
- Akanle, F. F. (2007). Reasons for increase in adolescence sexual activities in Nigeria. *Pakistan Journal of Social Sciences*, 4, 647-653.
- Albarracin, D., Johnson, B. T., & Zanna, M. P. (Eds.) (2005). *The handbook of attitudes*. London: McGraw-Hill.
- Alberts, H. J. E. M., Martijn, C., Nievelstein, F., Jansen, A., & de Vries, N. K. (2008). Distracting the self: Shifting prevents ego depletion. *Self and Identity*, 7, 322-334.
- Alegre, C. & Murray, E. J. (1974). Locus of control, behavioural intention, and verbal conditioning. *Journal of Personality*, 42, 668-681.
- Aliber, M. (2003). Chronic poverty in South Africa: Incidence, cases, and policies. *World Development*, 3, 473-490.

- Alker, H. A., & Poppin, P. J. (1973). Personality and ideology in university students. *Journal of Personality*, 11, 653-671.
- Allegrante, J. P., Barry, M. M., Airhihenbuwa, C. O., Auld, M. E., Collins, J. L., Lamarre, M.C., Magnusson, G., McQueen, D. V., & Mittelmark, M. B. (2009). Domains of core competence, standards, and quality assurance for building global capacity in health promotion: The Galway consensus conference statement. *Health Education and Behaviour*, 36, 476-482.
- Allen, D. G., Weeks, K. P., & Moffitt, K. R. (2005). Turnover intentions and voluntary turnover: The moderating roles of self-monitoring, locus of control, proactive personality and risk aversion. *Journal of Applied Psychology*, 90, 980-990.
- Alloy, L. B., Abramson, L. Y., Metalsky, G. I. & Hartlage, S. (1988). The hopelessness theory of depression: Attributional aspects. *British Journal of Clinical Psychology*, 27, 5-21.
- Allport, G. W. (1937). *Personality. A psychological Interpretation*. New York: Holt.
- Allport, G. W. (1966). Traits revisited. *American Psychologist*, 21, 1-10.
- Alm, M., Neumark-Sztainer, D., Story, M., & Boutelle, K. N. (2009). Self-weighting and weight control behaviours among adolescents with a history of overweight. *Journal of Adolescent Health*, 44, 424-430.
- Alonzo, A. A., & Reynolds, N. R. (1995). Stigma, HIV and AIDS: An exploration and elaboration Alsen, P., Brink, E., & Persson, L. O. (2008). Patients` illness perception four months after a myocardial infarction. *Journal of Clinical Nursing*, 17, 25-33.
- Altin, M., & Koranci, A. N. (2008). How does locus of control and inflated sense of responsibility relate to obsessive-compulsive symptoms in Turkish adolescents? *Journal of Anxiety Disorders*, 22, 1303-1315.

- Amornkul, P. N., Vandenhoudt, H., Nasokho, P., Odhiambo, F., Mwaengo, D., Hightower, A., Buve, A., Misore, A., Vulule, J., Vitek, C., Glynn, J., Greenberg, A., Slutsker, L., & DeCock, K. M. (2009). HIV prevalence and associated risk factors among individuals aged 13-34 in rural Western Kenya. *Plos One*, 4, 6470-6470.
- Amos, T., Ristow, A., & Ristow, L. (2004). *Human Resource Management*. Lansdowne: Juta Academic Press.
- Anderson, M. C. (2009). The medium is the messenger: Using podcasting to deliver consumer health information. *Journal of Consumer Health on the Internet*, 13, 119-128.
- Anderson, M., Elam, G., Gerver, S., Solarin, I., Fenton, K., & Easterbrook, (2008). HIV/AIDS-related stigma and discrimination: Accounts of HIV positive Caribbean people in the United Kingdom. *Social Science and Medicine*, 67, 790-798.
- Andrew, J. C., Netemeyer, R. G., & Burton, S. (2009). The nutrition elite: Do only the highest levels of caloric knowledge, obesity knowledge, and motivation matter in processing nutrition claims and disclosures? *Journal of Public Policy and Marketing*, 28, 41-55.
- Andrykowski, M. A., Beacham, A. O., Schmidt, J. E., & Harper, W. K. (2006). Application of the theory of planned behaviour to understand intentions to engage in physical and psychosocial health behaviours after cancer diagnosis. *Psycho-oncology*, 15, 759-771.
- Ang, H. L. & Lim, K. M. (2007). The effects of anchoring on perceived self-efficacy, task persistence and performance. *The Korean Journal of Thinking and problem-solving*, 17, 51-63.
- Angel, R. J., & Angel, J. L., & Hill, T. D. (2009). Subjective control and health among Mexican-origin elders in Mexico and the United States: Structural considerations in comparative research. *The Journal of Gerontology*, 64, 390-401.

- Apkarian, A. V., Sosa, Y., Krauss, B. R., Thomas, P. S., Fredrickson, B. E., Levy, R. E., Harden, R. N., & Chialvo, D. R. (2004). Chronic pain patients are impaired on an emotional decision-making task. *Pain*, 108, 129-136.
- Apostolopoulos, Y., Sonmez, S., Kronenfeld, J., Castillo, E., McLendon, L., & Smith, D. (2006). STI/HIV risks for Mexican migrant labourers: Exploratory ethnographics. *Journal of Immigrant and Minority Health*, 8, 291-292.
- Arbuthnott, K. D. (2009). Education for sustainable development beyond attitude. *International Journal of Sustainability in Higher Education*, 10, 152-163.
- Archer, T., Kostrzewa, R. M., Beninger, R. J., & Palomo, T. (2008). Cognitive symptoms facilitatory for diagnoses in neuropsychiatric disorders: Executive functions and locus of control. *Neurotoxicity Research*, 14, 205-225.
- Arehart-Treichel, J. (2009). Illnesses other than depression show stronger link to suicide. *American Psychiatric Association*, 44, 24-24.
- Armitage, C. J., & Conner, M. (2000). Social cognition models and health behaviour: A structured review. *Psychology and Health*, 15, 173-190.
- Armstrong-Stassen, M., & Schlosser, F. (2008). Taking a positive approach to organisational downsizing. *The Canadian Journal of Administrative Sciences*, 25, 93-106.
- Arokach, A. (2006). Alienation and domestic abuse: How abused women cope with loneliness. *Social Indicators Research*, 78, 327-340.
- Arrigo, B. A., & Takahashi, Y. (2006). Re-communalisation of the disenfranchised: A theoretical and critical criminological inquiry. *Theoretical Criminology*, 10, 307-336.
- Artiles, A.J., Harry, B., Reschly, D.J., & Chinn, P.C. (2002). Over-identification of students of colour in special education: A critical overview. *Multicultural Perspectives*, 4, 3-10.

- Arunkumar, R. Midgley, C., & Urdan, T. (1999). Perceiving high or low home-school dissonance: Longitudinal effects on adolescent emotional and academic wellbeing. *Journal of Research on Adolescence*, 9, 441-466.
- Aspinwall, L. G. (2005). The psychology of future-oriented thinking: From achievement to proactive coping, adaptation, and aging. *Motivation and Emotion*, 29, 203-235.
- Aspy, C. B., Vesely, S. K., Oman, R. F., Rodine, S., Marshall, L. D., & McLeroy, K. (2007). Parental communication and youth sexual behaviour. *Journal of Adolescence*, 30, 449-466.
- Assadi-Pooya, A. A., Schilling, C. A., Glosser, D., Tracy, J. I., & Sperling, M. R. (2007). Health locus of control in patients with epilepsy and its relationship to anxiety, depression, and seizure control. *Epilepsy and Behaviour*, 11, 347-350.
- Attance, C. M., & Jackson, L. K. (2009). The development and coherence of future-oriented behaviours during the preschool years. *Journal of Experimental Child Psychology*, 102, 379-391.
- Attance, C. M., & O'Neil, D. K. (2005). The emergencies of episodic future thinking in humans. *Learning and Motivation*, 36, 126-144.
- Attarri, A., Sartippour, M., Amini, M., & Haghghi, S. (2006). Effect of stress management training on glycemic control in patients with type 1 diabetes. *Diabetes Research and Clinical Practice*, 73, 23-28.
- Atkinson, J. W. (Eds.) (1958). *Motives in fantasy action and society*. Princeton: D. Van Nostrand.
- Atkinson, J. W. (1964). *An introduction to motivation*. Princeton: Van Nostrand.
- Au, R. C. P., Hattie, J., & Alexander, P. (2009). Reformulating the depression model of learned hopelessness for academic outcomes. *Educational Research Review*, 4, 103-117.

- Auvert, B., Sobngwi-Tambekou, J., Cutter, E., Nieuwoudt, M., Lissouba, P., Puren, A., & Taljaard, D. (2009). Effect of male circumcision on the prevalence of high risk human papillomavirus in young men: Results of a randomized controlled trial conducted in Orange Farm, South Africa. *The Journal of Infectious Diseases*, 199, 14-19.
- Avis-Williams, A., Khoury, A., Lisovicz, N., & Graham-Kresge, S. (2009). Knowledge, attitudes, and practices of underserved women in the Rural South toward breast cancer prevention and detection. *Family and Community Health*, 32, 238-246.
- Ayduk, O. (2007). Delay of gratification in children: Contribution to social-personality psychology. In Y. Shoda, D. Cervone, & G. Downey (Eds.), *Persons in context: Building a science of the individual* (pp. 97-109). New York: Guilford Press.
- Ayduk, O., Rodriguez, M. L., Mischel, W., Shoda, Y., & Wright, J. (2007). Verbal intelligence and self-regulatory competencies: Joint predictors of boys' aggression. *Journal of Research in Personality*, 41, 374-388.
- Baeten, J. M., Celum, C., Coates, T. J. (2009). Male circumcision and HIV risks and benefits for women. *The Lancet*, 374, 182-184.
- Badat, S. L. (2009). Theorising institutional change: Post- 1994 South African Higher Education. *Studies in Higher Education*, 34, 455-467.
- Bal, A. (1996). Protecting health care consumers: Is the CPA effective? *Economic and Political Weekly*, 31, 3289-3290.
- Balachandran, M., Raakhee, A. S., & Sam, S. R. H. (2007). Life satisfaction and alienation of elderly males and females. *Journal of the Indian Academy of Applied Psychology*, 33, 157-160.
- Baler, R. D., & Volkow, N. D. (2006). Drug addiction: The neurobiology of disrupted self-control. *Trends in Molecular Medicine*, 12, 559-566.

- Baleta, A. (2003). South Africa stalls again on access to HIV drugs. *The Lancet*, 361, 842-842.
- Bamberg, M. & Abell, S. (2006). Relocating the nexus of psychopathology and treatment: Thoughts on the contribution of Erich Fromm to contemporary psychotherapy. *Journal of Contemporary Psychotherapy*, 36, 175-182.
- Bameister, R. F. & Alquist, J. L. (2009). Is there a downside to good self-control? *Self and Identity*, 8, 115-130.
- Bandura, A. (2005). The primacy of self-regulation. *Applied Psychology: An International Review*, 54, 245-254.
- Bandura, A. (2007). Toward a psychology of human agency. *Perspectives on Psychological Science*, 2, 164-180.
- Bansal, S., Thind, S. K., & Jaswal, S. (2006). The relationship between quality of environment, locus of control, and achievement motivation among high achiever urban female adolescents. *Journal of Human Ecology*, 19, 253-257.
- Banya, K., & Elu, J. (2001). The world bank and financing higher education in Sub-Saharan Africa. *Higher Education*, 42, 1-34.
- Baptiste-Roberts, K., Gary, T. L., Beckles, G. L. A., Gregg, E. W., Owens, M., Porterfield, D. & Engelgau, M. M. (2007). Family history of diabetes, awareness of risk factors, and health behaviours among African-Americans. *American Journal of Public Health*, 97, 907-912.
- Barber, L. K., Munz, D. C., Bagnsby, P. G., & Grawitch, M. J. (2009). When does time perspective matter? Self-control as a moderator between time perspective and academic achievement. *Personality and Individual Differences*, 46, 250-253.
- Baron-Epel, O., Friedman, N., & Lerna, O. (2009). Fatalism and mammography in a multicultural population. *Oncology Nursing Forum*, 36, 353-361.

- Barroso, J., McMillan, S., Casey, L., Gibson, W., Kaminski, G. & Meyer, J. (2000). Comparison between African-American and white women in their beliefs of breast cancer and their health locus of control. *Cancer Nursing*, 23, 268-276.
- Bartram, D. J., Yadegarfar, G., & Baldwin, D. S. (2009). Psychosocial working conditions and work-related stressors among UK veterinary surgeons. *Occupational Medicine*, 59, 334-341.
- Basile, K. C., Espelage, D. L., Rivers, I., McMahon, P. M., & Simon, T. R. (2009). The theoretical and empirical links between bullying behaviour and male sexual violence perpetration. *Aggression and Violent Behaviour*, 14, 336-347.
- Basu, A., & Wang, J. (2009). The role of branding in public health campaigns. *Journal of Communication Management*, 13, 77-91.
- Battaglini, M., Benabou, R., & Tirole, J. (2005). Self-control in peer groups. *Journal of Economic Theory*, 123, 105-134.
- Battle, E., & Rotter, J. B. (1963). Children`s feelings of personal control as related to social class and ethnic group. *Journal of Personality*, 31, 482-490.
- Bauer, H. R. (2006). Demographic characteristics of HIV III: Why does HIV discriminate by race? *Journal of Science Exploration*, 20, 255-288
- Baum, J. A. C., Rowley, T. J., Shipilov, A. V., & Chuang, Y. T. (2005). Dancing with strangers: Aspiration performance and the search for underwriting syndicate partners. *Administrative Science Quarterly*, 50, 536-575.
- Bauman, L. J., Karasz, A., & Hamilton, A. (2007). Understanding failure of condom use intention among adolescents. *Journal of Adolescent Research*, 22, 248-274.
- Baumeister, R. F. (2002). Yielding to temptation: Self-control failure, impulse purchasing, and consumer behaviour. *Journal of Consumer Research*, 28, 670-676.

- Baumeister, R. F., & Alquist, J. L. (2009). Is there a downside to good self-control? *Self and Identity*, 8, 115-130.
- Baumeister, R. F., & Vohs, K. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Compass*, 1, 115-128.
- Bekhet, A. K., Zauszniewski, J. A., & Nakhla, W. (2008). Loneliness: A concept analysis. *Nursing Forum*, 43, 207-213.
- Beksinska, M. E., Rees, H. V., Kleinschmidt, I., & McIntyre, J. (1999). The practice and prevalence of dry sex among men and women in South Africa: A risk factor for sexually transmitted infections. *Sexually Transmitted Infections*, 75, 178-180.
- Bell, N. S., Kanitkar, K., Kerksiek, K. A., Watson, W., Das, A., Kostina-Ritchey, E., Russel, M. H., & Harris, K. (2009). `` It has made college possible for me``: Feedback on the impact of university-based centre for students in recovery. *Journal of American College Health*, 57, 650-658.
- Bellack, A. S. & Hersen, M. (1993). *Psychopathology in adulthood*. London: Allyn & Bacon.
- Bembenutty, H. (2007). Self-regulation of learning and academic delay of gratification: Gender and ethnic differences among college students. *Journal of Advanced Academics*, 18, 586-617.
- Bembenutty, H. (2009). Academic delay of gratification, self-regulation of learning, gender differences and expectancy value. *Personality and Individual Differences*, 46, 347-352.
- Bembenutty, H. & Karabenick, S. A. (1998). Academic delay of gratification. *Learning and Individual Differences*, 10, 329-346.
- Bembenutty, H. & Karabenick, S. (2004). Inherent associations between academic delay of gratification, future time perspective, and self-regulated learning. *Educational Psychology Review*, 16, 35-57.

- Benatar, S. R. (1997). Health care reform in the new South Africa. *New England Journal of Medicine*, 336, 891-895.
- Benatar, S. R. (2004). Health care reform and the crisis of HIV and AIDS in South Africa. *The New England Journal of Medicine*, 351, 81-92.
- Bendik, C. F., Keller, U., Moricon, N., Gessler, A., Schindler, C., Zulewski, H., Ruiz, J., & Pruder, J. J. (2009). Training in intensive insulin therapy improves quality of life, decreases the risk of hypoglycaemia and ameliorates poor metabolic control in patients with type 1 diabetes. *Diabetes Research and Clinical Practice*, 83, 327-333.
- Benotsch, E. G., Kalichman, S. C., & Kelly, J. A. (1999). Sexual compulsivity and substance use in HIV-seropositive men who have sex with men: Prevalence and predictors of high-risk behaviours. *Addictive Behaviour*, 24, 857-868.
- Benyamini, Y., Leventhal, E. A., & Leventhal, H. (2000). Gender differences in processing information for making self-assessment of health. *Psychosomatic Medicine*, 62, 334-364.
- Beran, M. J., & Evans, T. A. (2006). Maintenance of delay of gratification by four chimpanzees (pan troglodytes). *Behavioural Processes*, 73, 315-324.
- Beran, M. J., & Evans, T. A. (2009). Delay of gratification by chimpanzees (Pan troglodytes) in working and waiting situations. *Behavioural Processes*, 80, 177-181.
- Berer, M. (1998). Sex, sexuality and sexual health. *Reproductive Health Matters*, 6, 7-10.
- Berger, J. M. (2002). Litigation strategies to gain access to treatment for HIV/AIDS: The case of South Africa`s Treatment Action Campaign. *Wisconsin International Law Journal*, 20, 595-610.
- Berns, G. S., Laibson, D., & Loewenstein, G. (2007). Intertemporal choice –toward an integrative framework. *Trends in Cognitive Sciences*, 11, 482-488.

- Bernthal, M. J., Crockett, D., & Rose, R. L. (2005). Credit cards as lifestyle facilitators. *Journal of Consumer Research*, 32, 130-145.
- Berridge, K. C. (2004). Motivation concepts in behavioural neuroscience. *Physiology and Behaviour*, 81, 179-209.
- Berzonsky, M. D., & Kinney, A. (2008). Identify processing style and defence mechanisms. *Polish Psychological Bulletin*, 39, 111-117.
- Beukman, T. L. (2005). *The effect of selected variables on leadership behaviour within the framework of a transformational organisational paradigm*. Unpublished Doctoral thesis, University of Pretoria, South Africa.
- Bhana, D., & Pattman, R. (2009). Researching South African youth, gender, and sexuality, within the context of HIV/AIDS. *Development*, 52, 68-74.
- Bhana, A., & Petersen, I. (2009). HIV and youth: A behavioural perspective. In P. Rohleder, L. Swartz, S. C. Kalichman, & L. C. Simbayi (Eds.), *HIV/AIDS in South Africa 25 years on: Psychosocial Perspectives* (pp. 55-68). New York: Springer.
- Bhano, R. T. (2009). The links between parent behaviour and boys` and girls` science achievement beliefs. *Applied Developmental Science*, 13, 42-59.
- Bialer, I. (1961). Conceptualisation of success and failure in mentally retarded and normal children. *Journal of Personality*, 29, 303-320.
- Bjarnason, T. (2009). Anomie among European adolescents: Conceptual and empirical classification of a multilevel sociological concept. *Sociological Forum*, 24, 135-161.
- Bjork, T., Bjorck, C., Clinton, D., Sohlberg, S., & Norring, C. (2009). What happened to the ones who dropped out? Outcome in eating disorder patients who complete or prematurely terminate treatment. *European Eating Disorders Review*, 17, 109-119.

- Bjornstad, R. (2006). Learned helplessness, discouraged workers, and multiple unemployment equilibria. *Journal of Socio-Economics*, 35, 458-475.
- Bleiberg, K. L. & Markowitz, J. C. (2005). A pilot study of interpersonal psychotherapy for posttraumatic stress disorder. *American Journal of Psychiatry*, 162, 181-183.
- Bloomberg, M. (1974). On the relationship between internal-external control and morality. *Psychological Reports*, 35, 1077-1078.
- Boland, M., Fitzpatrick, P., Scallan, E., Dally, L., Herity, B., Horgan, J., & Bourke, G. (2006). Trends in medical students' use of tobacco, alcohol, and drugs in an Irish university 1973-2002. *Drug and Alcohol Dependence*, 85, 123-128.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: John Wiley & Sons.
- Bollen, K. A. & Long, J. S. (1993). *Testing structural equation models*. London: Sage.
- Bolton, J. R. (2000). The risks and the weaknesses of the international criminal court from America's perspective. *Virginia Journal of International Law*, 41, 186-203.
- Bond, P. (1999). Globalisation, pharmaceutical pricing, and South African health policy: Managing confrontation with US firms and politicians. *International Journal of Health Services*, 29, 765-792.
- Bonhomme, J., Stephens, T., & Braithwaite, R. (2006). African-American males in the United States prison system: Impact on family and community. *Journal of Men's Health and Gender*, 3, 223-226.
- Bornovalova, M. A., Cashman-Rolls, A., O'Donnell, J. M., Ettinger, K., Richards, J. B., De Wit, H., & Lejuez, C. W. (2009). Risk-taking differences on a behavioural task as a function of potential reward/loss magnitude and individual difference in impulsivity and sensation seeking. *Psychopharmacology, Biochemistry, and Behaviour*, 93, 258-262.

- Boroto, D. R. (1970). *The mosher forced choice inventory as a predictor of resistance to temptation*. Unpublished master`s thesis, University of Connecticut.
- Bowler, J. (2004, June). *A pilot study into the impact of and responses to HIV/AIDS by workplaces in the Nelson Mandela Metropolitan Municipal area-2002*. Paper presented at the symposium on “HIV/AIDS in the workplace research symposium”, Centre for Health Policy, University of the Witwatersrand.
- Braa, J. & Hedberg, C. (2002). The struggle for district-based health information systems in South Africa. *The Information Society*, 18, 113-127.
- Braa, J., Monteiro, E., & Sahay, S. (2004). Networks of action: Sustainable health information systems across developing countries. *Management Information Systems Quarterly*, 28, 337-362.
- Bradshaw, C. P., O` Brennan, L. M., & McNeely, C. (2008). Core competencies and the prevention of school failure and early school learning. *New Directions for Child and Adolescent Development*, 122, 19-32.
- Branson, R. D., Davis, K., & Butler, K. L. (2007). African-Americans participation in clinical research: Importance, barriers and solutions.
- Braude, H. D. (2009). Colonialism, Biko, and AIDS: Reflections on the principle of beneficence in South African medical ethics. *Social Science and Medicine*, 68, 2053-2060. *The American Journal of Surgery*, 193, 32-39.
- Brausch, A., M., & Gutierrez, P. M. (2009). The role of body image and disordered eating as risk factors for depression and suicidal ideation in adolescents. *Suicide and Life-Threatening Behaviour*, 39, 58-71.
- Brennan, T. A., Leape, L. L., Laird, N. M., Hebert, L., Localio, A. R., Lawthers, A. G., Newhouse, J. P., Weiler, P. C., & Hiatt, H. H. (2004). Incident of adverse events and negligence in hospitalised patients: Results of the Harvard Medical Practice Study 1. *Quality and Safety Health Care*, 13, 145-151.

- Brenner, C. (2002). Conflict, compromise formation and structural theory. *The Psychoanalytic Quarterly*, 71, 397-417.
- Brettman, J. E., & Jaspersen, R. A. (2009). Adolescent in residential and inpatient treatment: A review of outcome literature. *Child and Youth Care Forum*, 38, 161-183.
- Bricker, J. B., Rajan, K. B., Zalewski, M., Anderson, M. R., Ramey, M., & Peterson, A. V. (2009). Psychological and social risk factors in adolescent smoking transitions: A population-based longitudinal study. *Health Psychology*, 28, 439-447.
- Broaddus, M. R., & Bryan, A. (2008). Consistent condom use among juvenile detainees: The role of individual differences, social bonding, and health beliefs. *AIDS and Behaviour*, 12, 59-67.
- Brockett, P. L., & Golden, L. L. (2007). Biological and psycho-behavioural correlates of credit scores and automobile insurance losses: Toward an explication of why credit scoring works. *Journal of Risk and Insurance*, 74, 23-63.
- Brodwin, P. (2002). Genetics, identity and the anthropology of essentialism. *Anthropology Quarterly*, 75, 323-330.
- Brook, J. Morojele, N., Pahl, K. & Brook, D. (2006). Predictors of drug use among South African adolescents. *Journal of Adolescent Health*, 38, 26-34.
- Brookes, H., Shisana, O., & Richter, L. (2004). *The national household HIV prevalence and risk survey of South African children*. Cape Town: Human Sciences Research Council.
- Brooks, J. S., & Hughes, R. M. (2008). Fear and trembling in American high school: Educational reform and teacher alienation. *Educational Policy*, 22, 45-62.

- Broome, K. M., Flynn, P. M., Knight, D. K., & Simpson, D. (2007). Programme structure: Staff perceptions, and client engagement in treatment. *Journal of Substance Abuse Treatment*, 33, 149-158.
- Brophy, J. (2009). Connecting with the big picture. *Educational Psychologist*, 44, 147-157.
- Brophy, M. (2006). Shadowing Afrikaner nationalism: Jungian archetypes, incest, and the uncanny in Marlene van Niekerk, s triomp. *Journal of Literary Studies*, 22, 96-112.
- Brouwer, B., Musselman, K., & Culham, E. (2004). Physical function and health status among seniors with and without a fear of falling. *Gerontology*, 50, 135-141
- Brown, L. (2009). An ethnographic study of the friendship patterns of international students in England: An attempt to recreate home through conational interaction. *International Journal of Educational Research*, 48, 184-193.
- Brown, L. H., & Beckett, K. S. (2007). Parental involvement in an alternative school for students at risk of educational failure. *Education and Urban Society*, 39, 498-523.
- Brown, L. K., Danovsky, M. B., Lourie, K., & DiClemente, R. J. (1997). Adolescents with psychiatric disorders and the risk of HIV. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 1609-1617.
- Brown, L., MacIntyre, K., & Trujillo, L. (2003). Interventions to reduce HIV stigma: What have we learned? *AIDS Education and Prevention*, 15, 49-69.
- Brown, J. C. & Strickland, B. R. (1972). Belief in internal-external control of reinforcement and participation in college activities. *Journal of Consulting and Clinical Psychology*, 38, 148-148.
- Brownstein, J., Chowdhury, F., Norris, S., Horsley, T., Jack, L., Zhang, X., & Satterfield, D. (2007). Effectiveness of community health workers in the case of people with hypertension. *American Journal of Preventive Medicine*, 32, 435-447.

- Bruch, H. (1974). *Learning psychotherapy*. Mass: Harvard University Press.
- Bulls, S. (2004). ``The land of murder, cannibalism, and all kinds of atrocious crimes?``: Maori and crime in New Zealand, 1853-1919. *British Journal of Criminology*, 44, 496-519.
- Bulwer, M. (2006). *Treatment development in problem and pathological gambling*. Unpublished Doctoral thesis, University of South Africa.
- Bundy, C. (1987). Street sociology and pavement politics: Aspects of youth and student resistance in Cape Town 1985. *Journal of Southern African Studies*, 13, 303-330.
- Bunge, S. A., & Wright, S. B. (2007). Neurodevelopmental changes in working memory and cognitive control. *Current Opinion in Neurobiology*, 17, 243-250.
- Bunnel, R., Mermin, J., & De Cock, K. M. (2006). HIV prevention for a threatened continent: Implementing positive prevention in Africa. *JAMA*, 296, 855-858.
- Burke, A. W. (1985). Mental health and Apartheid: World Health Psychiatric Association conference report. *International Journal of Psychiatry*, 31, 144-148.
- Burke, M. V. (2008). Health care providers discussions of tobacco use, advice to quit and patient satisfaction at college health centres. *The Journal of Smoking Cessation*, 3, 77-80.
- Burke, N. J., Joseph, G., Pasick, R. J., & Barker, J. C. (2009). Theorising social context: Rethinking behavioural theory. *Health Education and Behaviour*, 36, 55-70.
- Burker, E., Evon, D. M., Galanko, J. & Egan, T. (2005). Health locus of control predicts survival after lung transplant. *Journal of Health Psychology*, 10, 695-704.
- Burns, M. J., & Dillon, F. R. (2005). AIDS health locus of control, self-efficacy for safer sexual practices and future time orientation as predictors of condom use in African American college students. *Journal of Black Psychology*, 31, 172-188.

- Burston, D. (2006). Psychotherapy and post modernism: Agency, authenticity, and alienation in contemporary therapeutic discourse. *Psychotherapy and Politics International*, 4, 119- 130.
- Burton, N. W., Pakenham, K. I., & Brown, W. J. (2009). Evaluating the effectiveness of psychosocial resilience training for heart health, and the added value of promoting physical activity: A cluster randomised trial of the READY program. *BMC Public Health*, 9, 427-427.
- Buse, D. C., & Andrasik, F. (2009). Behavioural medicine for migraine. *Neurologic Clinics*, 27, 445-465.
- Bussing, A., & Fischer, J. (2009). Interpretation of illness in cancer survivors is associated with health-related variables and adaptive coping styles. *BMC Women's Health*, 9, 2- 2.
- Butler, S., Fearon, P., Atkinson, L., & Parker, K. (2007). Testing an interactive model of symptom severity in conduct disordered youth. *Criminal Justice and Behaviour*, 34, 721-738.
- Butter, C. M., McDonald, J. A., & Snyder, D. R. (1969). Orality, preference behaviour, and reinforcement value of non-food object in monkeys with orbital frontal lesions. *Science*, 13, 1306-1307.
- Butterfield, E. C. (1964). Locus of control, test anxiety, reaction to frustration, and achievement attitudes. *Journal of Personality*, 32, 298-311.
- Byma, E. A., Given, B. A., Given, C. W., & You, M. (2009). The effects of mastery on pain and fatigue resolution. *Oncology Nursing Forum*, 36, 544-552.
- Byrne, D. (1964). The repression-sensitisation scale: Rationale, reliability and validity. In B. A. Maher (Ed.), *Progress in experimental personality research*. (PP. 169-169-220).

- Cabrera, A. F., & Nora, A. (1994). College students' perceptions of prejudice and discrimination and their feelings of alienation: A construct validation approach. *Review of Education, Pedagogy, and Cultural Studies*, 16, 387-409.
- Cabrera, A. F., & Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White and students and African-American students. *Journal of Higher Education*, 70, 134-160.
- Cacippo, J. T., Hughes, M. E., Waite, L. J., Hawkley, L. C. & Thisted, R. A. (2006). Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analyses. *Psychology and Aging*, 21, 140-151.
- Caldwell, J. C., Caldwell, P., & Orubuloye, I. O. (1992). The family and sexual networks in Sub-Saharan Africa: Historical regional differences and present-day implications. *Population Studies*, 46, 385-410.
- Caldwell, L. L., & Smith, E. A. (2006). Leisure as a context for youth development and delinquency prevention. *Australian and New Zealand Journal of Criminology*, 39, 398-418.
- Calhoun, L. G., Cheney, T., & Dawes, A. S. (1974). Locus of control, self-reported depression and perceived causes of depression. *Journal of Consulting and Clinical Psychology*, 42, 736-736.
- Calogero, R. M., & Watson, N. (2009). Self-discrepancy and chronic social-consciousness: Unique and interactive effects. *Personality and Individual Differences*, 46, 642- 647.
- Calsyn, D. A., Hatch-Maillette, M., Tross, S., Doyle, S. R., Crits-Christoph, P., Song, Y. S., Harrer, J. M., Lalos, G., & Berns, S. B. (2009). Motivational skills training, HIV/sexually transmitted infection, sexual risk reduction groups for men. *Journal of Substance Abuse Treatment*, 37, 138-150.

- Cameron, L. (2003). Anxiety, cognition, and response to health threats. In L. Cameron & H. Leventhal (Eds.), *The self-regulation of health and illness behaviour*. London: Routledge.
- Cameron, N. & Griffiths, P. (2009). Stuips, sputts, and prophet ropes: The treatment of abantu childhood illness in urban South Africa. *Social Science and Medicine*, 68, 343-351.
- Cameron, L. & Leventhal, H. (Eds.) (2003). *The self-regulation of health and illness behaviour*. London: Routledge.
- Campbell, C. (2004). Community health psychology: Promoting analysis and action for social change. *Journal of Health Psychology*, 9, 187-195.
- Campbell, M. O. N. (2004). Traditional forest protection and woodlots in the coastal savannah of Ghana. *Environmental Conservation*, 31, 225-232.
- Campbell, C., Gibbs, A., Maimane, S., Nair, Y., & Sibiyi, Z. (2009). Youth participation in the fight against AIDS in South Africa: From policy to practice. *Journal of Youth Studies*, 12, 93-109.
- Campbell, K. E., Olson, K. R. & Kleim, D. M. (1990). Physical attractiveness, locus of control, sex role and conversational assertiveness. *Journal of Social Psychology*, 130, 263-265.
- Campbell-Heider, N., Tuttle, T. R., Knapp, T. R., & Faan, E. (2009). CE FEATURE: The effect of positive adolescent life skills training on long-term outcomes for high risk teens. *Journal of Addictions Nursing*, 20, 6-15.
- Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration.
- Campbell, A. N. C., Tross, S., Dworkin, S. L., Hu, M. C., Manuel, J., Pavlicova, M., & Nunes, E. V. (2009). Relationship power and sexual risk among women in community-based substance abuse treatment. *Journal of Urban Health*, 86, 951-964.

- Campion, J. & Bhugra, D. (1998). Religion and indigenous treatment of mental illness in South India: A descriptive study. *Mental Health, Religion and Culture* 1: 21-29.
- Carey, P. D., Walker, J. L., Rossouw, W., Seedat, S., & Stein, D. J. (2008). Risk indicators and psychopathology in traumatised children and adolescents with a history of sexual abuse. *European Child and Adolescent Psychiatry*, 17, 93-98.
- Carlson, J. G. (1977). Training in relaxation techniques for health improvement. *Applied Psychophysiology and Biofeedback*, 2, 259-271.
- Carr, D. (2000). Who` s to blame?: Perceived responsibility for spousal death and psychological distress among older widowed persons. *Journal of Health and Social Behaviour*, 50, 359-375.
- Carter-Edwards, L., Godette, D. C., White, S. S., & Tyson, W. (2009). A conceptual framework for studying alcohol intake and blood pressure on historically Black college and university campuses. *Journal of Drug Education*, 39, 149-165.
- Carver, C. S. (2005). Impulse and constraint: Perspectives from personality psychology, convergence with theory in other areas, and potential for integration. *Personality and Social Psychology*, 9, 312-333.
- Case, J. M. (2008). Alienation and engagement: Development of an alternative theoretical framework for understanding student learning. *Higher Education*, 55, 321-332.
- Casey, B. J., Jones, R. M., & Galvan, A. (2008). The adolescent brain. *Developmental Review*, 28, 62-77.
- Casper, R. C. (1990). Personality features of women with good outcome from restricting anorexia nervosa. *Psychosomatic Medicine*, 52, 156-170.
- Caspi, A. & Rober, B. W. (2001). Personality Development across the life course: The argument for change and continuity. *Psychological Inquiry*, 12, 49-66.

- Caspi, A., Harrington, H., Moffitt, T. E., Milne, B. J., & Poulton, R. (2006). Socially isolated children 20 years later: Risk of cardiovascular disease. *Archives of Paediatrics and Adolescent Medicine*, 160, 805-811.
- Cast, A. D., & Schweingruber, D., & Berns, N. (2006). Childhood physical punishment and problem solving in marriage. *Journal of Interpersonal Violence*, 21, 244-261.
- Castro-Leal, F., Dayton, J., Demery, L., & Mehra, K. (2000). Public spending on health care in Africa: Do the poor benefit? *Bulletin-World Health Organisation*, 78, 66-74.
- Catford, J. (1990). Strategic intent: Will Alice win the Olympic? *Health Promotion International*, 5, 249-251.
- Cattell, R. B. (1946). Description and measurement of personality. New York: World Book Co.
- Cavanagh, S. E., & Huston, A. C. (2006). Family instability and children`s early problem behaviour. *Social Forces*, 85, 551-582.
- Cavey, P. D., Walker, J. L., Roussouw, W., Seedat, S., & Stein, D. J. (2008). Risk indicators and psychopathology in traumatised children and adolescents with a history of sexual abuse. *European Child and Adolescent Psychiatry*, 17, 93-98.
- Cebi, M. (2007). Locus of control and human capital investment. *Journal of Human Resources*, 42, 919-932.
- Centre for Disease Control and Prevention (2007). *HIV and AIDS: Are you at risk?* Atlanta: Centre for Disease Control and Prevention.
- Cervone, D., Shadel, W. G., Smith, R. E., & Fiori, M. (2006). Self-regulation: Reminders and suggestions from personality science. *Applied Psychology*, 55, 333-385.
- Chak, K., & Leung, L. (2004). Shyness and locus of control as predictors of internet addiction and internet use. *Cyberpsychology and Behaviour*, 7, 559-570.

- Chance, J. E. (1959). Generalisation of expectancies among functionally related behaviours. *Journal of Personality*, 27, 228-238.
- Chang, M. M., & Ho, C. M. (2009). Effects of locus of control and learner-control on web-based language learning. *Computer Assisted Language Learning*, 22, 189-206.
- Chao, L. W., Szrek, H., Pereira, N. S., & Pauly, M. V. (2009). Time preference and its relationship with age, health, and survival probability. *Judgement and Decision-making*, 4, 1-9.
- Chartier, M. J., Walker, J. R., & Naimark, B. (2009). Health risk behaviours and mental health problems as mediators of the relationship between childhood abuse and adult health. *American Public Health Association*, 99, 847-854.
- Chaurand, N., & Brauer, M. (2008). What determines social control? People's reaction to counternormative behaviours in urban environments. *Journal of Applied Social Psychology*, 38, 1689-1715.
- Chavis, D. M., & Wandersman, A. (1990). Sense of community in the urban environment: A catalyst for participation and community development. *American Journal of Community Psychology*, 18, 55-81.
- Chen, H. A., Ng., S., & Rao, A. R. (2005). Cultural differences in consumer impatience. *Journal of Marketing Research*, 42, 291-301.
- Cheng, W. N. K., Hardy, L., & Markland, D. (2009). Toward a three-dimensional conceptualisation of performance anxiety: Rational and initial measurement development. *Psychology of Sport and Exercise*, 10, 271-278.
- Cherry, F., & Deaux, K. (1978). Fear of success versus fear of gender-inappropriate behaviour. *Sex Roles*, 4, 97-101.
- Chidester, D. (1992). *Religions of South Africa*. Pretoria: University of South Africa.

- Chidester, D. (2000). Mapping the sacred in the mother city: Religion and urban space in Cape Town. *Journal of the Study of Religion*, 13, 5-42.
- Chipfakacha, V. G. (1997). STD/HIV/AIDS knowledge, beliefs, and practices of traditional healers in Botswana. *AIDS Care*, 9, 417-425.
- Chirodzwa, A., Van Rooyen, H., Joseph, P., Sikotoyi, S., Richter, L., & Coates, T. (2009). Using participatory methods and geographic information systems (GIS) to prepare for an HIV community-based trial in Vulindlela, South Africa. *Journal of Community Psychology*, 37, 41-57.
- Chisholm, J. S., Quinlivan, J. A., Petersen, R. W., & Coall, D. A. (2005). Early stress predicts age at menarche, and first birth, adult attachment, and expected lifespan. *Human Nature*, 16, 233-265.
- Christopher, A. N., Zabel, K. L., Jones, J. R., Marek, P. (2008). Protestant ethic ideology: Its multifaceted relationships with just world beliefs, social dominance orientation, and right-wing authoritarianism. *Personality and Individual Differences*, 45, 473- 477.
- Civic, D., & Wilson, D. (1996). Dry sex in Zimbabwe and implications for condom use. *Social Science and Medicine*, 42, 91-98.
- Clark, L. T., Ferdinand, K. C., Flack, J. M., Gavin, J. R., Hall, W. D., Kumanyika, S. K., Saunders, E., Valentine, H. A., & Watson, K. (2001). Coronary heart disease in African-Americans. *Heart Disease*, 3, 97-108.
- Clarke, J. H., MacPherson, B. V., & Holmes, D. R. (1982). Cigarette smoking and external locus of control among young adolescents. *Journal of Health and Social Behaviour*, 23, 253-259.
- Cleanthous, A., & Christodoulou, C. (2009). Is self-control a learned strategy employed by a reward maximizing brain? *BMC Neuroscience*, 10, 14-14.

- Cleemput, P. V., Parry, G., Thomas, K., Peters, J., & Cooper, C. (2007). Health-related beliefs and experiences of gypsies and travelers: A qualitative study. *Journal of Epidemiology and Community Health*, 61, 205-210.
- Cluver, L., Gardner, F., & Operario, D. (2009). Poverty and psychological health among AIDS- orphaned children in Cape Town, South Africa. *AIDS Care*, 21, 732-741.
- Coast, J. (2004). Is economic evaluation in touch with society` s health values? *British Medical Journal*, 7476, 1233-1236.
- Cockcroft, K., Grasko, D., & Fridjhon, P. (2006). On counting sheep: The self-medication and coping strategies of university students suffering from primary insomnia. *South African Journal of Higher Education*, 20, 627-638.
- Coelho, C. L. M., & Bastos, C. L. (2009). PO3-90 Time and psychopathology OD depression in old age. *European Psychiatry*, 24, 1089-1089.
- Cohen, J. (1960). *Chance, skill, and luck*. Baltimore: Penguin.
- Cohen, J., Cohen, P., West, S. G. & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd Ed.) Mahwah, NJ: Lawrence Erlbaum and Associates.
- Cohen, M., & Fried, G. (2007). Comparing relaxation training and cognitive-behavioural group therapy for women with breast cancer. *Research on Social Work Practice*, 17, 313-323.
- Cole, D., & Espinoza, A. (2008). Examining the academic success of Latino students in science and mathematics (STEM) majors. *Journal of College Student Development*, 49, 285-300.
- Coleman, J., & Campbell, E. (1966). *Equality of educational opportunity*. Washington DC: US Department of Health, Education and Welfare.

- Coleman, R., Gill, G., & Wilkinson, D. (1998). Non-communicable disease management in resource poor settings: A primary care model from rural South Africa. *Bulletin-World Health Organisation*, 76, 633-640.
- Colliers, P., & Hoeffler, A. (2002). On the incidence of civil war in Africa. *Journal of Conflict Resolution*, 46, 13-28.
- Collins, C. J., Hanges, P. J., & Locke, E. A. (2004). The relationship of achievement motivation to entrepreneurial behaviour: A meta-analysis. *Human Performance*, 17, 95-117.
- Comaroff, J. L. (1980). Healing and the cultural order: The case of the Baralongboo Ratshidi of Southern Africa. *American Ethnologist*, 7, 637-657.
- Comaroff, J. L. (1982). Medicine: Symbol and ideology. In D. Wright & A. Treacher (Eds.), *The problem of medical knowledge: Examining the social construction of medicine* (pp. 49-68). Edinburgh: Edinburgh University Press.
- Comaroff, J. L. (1995). Ethnicity, nationalism and politics of difference in the age of revolution. *International Studies in Global Change*, 7, 243-276.
- Comaroff, J. L. (1997). Of totemism and ethnicity: Consciousness, practice and the signs of inequality. In J. L. Grinker & C. B. Steiner (Eds.), *Perspectives on Africa: A reader in culture, history, and representation* (pp. 69-85). London: Blackwell Publishers.
- Connelly, C., Simbayi, L.C., Shanmugam, R., & Nqeketo, A. (2008). Male circumcision and its relationship to HIV infection in South Africa: Results of a national survey in 2002. *South African Medical Journal*, 98, 789-794.
- Connelly, D., Veriava, Y., Roberts, S., Tsoetsi, J., Jordan, A., DeSilva, E., Rosen, S. D., & DeSilva, M. B. (2007). Prevalence, of HIV infection and median CD4 counts among health care workers in South Africa. *South African Medical Journal*, 97, 115-120.

- Connor, J., & Rueter, M. (2009). Predicting adolescent suicidality: Comparing multiple informants and assessment techniques. *Journal of Adolescence*, 32, 619-631.
- Cook, C. T. (2009). Sangomas: Problem or solution for South African health care system. *Journal of the National Medical Association*, 101, 261-265.
- Cook, R. J. & Ngwenya, C. G. (2006). Women` access to health care: The legal framework. *International Journal of Gynecology and Obstetrics*, 94, 216-225.
- Cooper, S., & Foster, D. (2008). Psychosocial analysis of HIV/AIDS-related stigma in South Africa. *International Quarterly of Community Health Education*, 29, 23-44.
- Corcoran, K. J., & Rotter, J. B. (1987). Morality-conscience guilt scale as a predictor of ethical behaviour in a cheating situation among college females. *Journal of General Psychology*, 114, 117-123.
- Cornuz, J., Humair, J. P., Seematter, L., Stoianov, R., Melle, G., Stalder, H., & Pecoud, A. (2002). Efficacy of resident training in smoking cessation: A randomised controlled trial of a programme based on applications of behavioural theory and practice with standardised patients. *Annals of Internal Medicine*, 137, 429-437.
- Corpus, J. H., & Gilbert, M. S. M. (2009). Within-year changes in children`s intrinsic and extrinsic motivation motivational orientations: Contextual predictors of academic outcomes. *Contemporary Educational Psychology*, 34, 154-166.
- Corral-Verdugo, V., Fraijo-Sing, B., & Pinheiro, J. (2006). Sustainable behaviour and time perspective: Present, past, and future orientations and their relationship with water conservation behaviour. *Inter-American Journal of Psychology*, 40, 139-148.
- Crais, C. C. (2002). *The politics of evil: magic, state power, and political imagination in South Africa*. Cambridge: Cambridge University Press.

- Cramer, P., & Kelly, F. D. (2004). Defence mechanisms in adolescent conduct disorder and adjustment reaction. *Journal of Nervous and Mental Disease*, 192, 139-145.
- Crandall, V. C. (1964). Achievement behaviour in young children. *Young Children*, 20, 77-90.
- Crandall, V. C., Katkovsky, W. & Crandall, V. J. (1965). Children`s beliefs in their own control of reinforcement in intellectual-academic achievement situations. *Child Development*, 36, 91- 109.
- Crandall, V. J., Katkovsky, W., & Preston, A. (1960). A conceptual formulation for some research on children`s achievement development. *Child Development*, 31, 787-797.
- Crandall, V. J., Katkovsky, W., & Preston, A. (1962). Motivational and ability determinants of young children`s intellectual achievement behaviours. *Child Development*, 33, 643-661.
- Crandall, V. J., Preston, A., & Rabson, A. (1960). Maternal reactions and the development of independence and achievement behaviour in young children. *Child Development*, 31, 243-251.
- Crepaz, N. & Marks, G. (2002). Towards an understanding of sexual risk behaviour in people living with HIV: A review of social, psychological and medical findings. *AIDS: Official Journal of the International AIDS Society*, 16, 135-150.
- Crinson, I., & Yuill, C. (2008). What can alienation theory contribute to an understanding of health inequalities? *International Journal of Health Services*, 38, 455-470.
- Crone, E. A., Bullens, L., Van der Plas, E. E. A., Kijkuit, E. J., & Zelazo, P. D. (2008). Developmental changes and individual differences in risk and perspective taking in adolescence. *Development and Psychopathology*, 20, 1213-1229.

- Crook, E. D. (2002). Diabetic renal disease in African-Americans. *American Journal of Medical Sciences*, 323, 78-84.
- Croson, R. & Sundali, J. (2005). The gambler`s fallacy and the hot hand: Empirical data from casinos. *The Journal of Risk and Uncertainty*, 30, 195-209.
- Crowne, D. P., & Liverant, S. (1963). Conformity under varying conditions of personal commitment. *Journal of Abnormal and Social Psychology*, 66, 547-555.
- Cummins, L. F., Nadorff, M. R., & Kelly, A. E. (2009). Winning and positive affect can lead to reckless gambling. *Psychology of Addictive Behaviours*, 23, 287-294.
- Cunningham, J. A., Hodgins, D. C., Toneatto, T., Rail, A., & Cordingley, J. (2009). Pilot study of a personalized feedback intervention for problem gamblers. *Behaviour Therapy*, 40, 219-224.
- Cvengros, J. A., Christensen, A. J., & Lawton, W. J. (2005). Health locus of control and depression in chronic kidney diseases: A dynamic perspective. *Journal of Health Psychology*, 10, 677-686.
- Czaja, R., Manfredi, C., & Price, J. (2003). Determinants and consequences of information seeking among cancer patients. *Journal of Health Communication*, 8, 529-562.
- Dageid, W., & Duckert, F. (2008). Balancing between normality and social death: Black rural South African women coping with HIV/AIDS. *Qualitative Health Research*, 18, 182-195.
- Dagher, D., & Ross, E. (2004). Approaches of South African traditional healers regarding the treatment of cleft lip and palate. *Cleft Palate Craniofacial Journal*, 41, 461-469.
- Dandeneau, S. D., & Baldwin, M. W. (2009). The buffering effects of rejection-inhibiting, attentional training on social and performance threat among adult students. *Contemporary Educational Psychology*, 34, 42-50.

- Daneel, M. L. (2008). Coping with wizardry in Zimbabwe in African initiated churches (AICs). In P. van van Doorn-Harder, N. van Doorn-Harder, & L. Minnema (Eds.), *Coping with evil in religion and culture* (pp. 51-70). New York: Rodopi Publishers.
- Daniels, L. M., Hayness, T. L., Stupnisky, R. H., Perry, R. P., Newall, N. E., & Pekrun, R. (2008). Individual differences in achievement goals: A longitudinal study of cognitive, emotional, and achievement outcomes. *Contemporary Educational Psychology, 33*, 584-608.
- Darbes, L., Crepaz, N., Lyles, C., Kennedy, G., & George, R. (2008). The efficacy of behavioural interventions in reducing HIV risk and incident sexually transmitted diseases in heterosexual African-Americans. *AIDS, 19*, 1177-1194.
- Darton-Hill, I., Nishida, C., & James, W. P. T. (2004). A life course approach to diet, nutrition, and the prevention of chronic diseases. *Public Health Nutrition, 7*, 101-121.
- Davis, J.E. (2003). Early schooling and academic achievement of African-American males. *Urban Education, 38*, 515-537.
- Davison, J. (2007). Alcohol misuse: Contributor to and consequence of violence against women. *Diversity in Health and Social Care, 4*, 137-148.
- Davison, G. C. & Neale, J. M. (1990). *Abnormal psychology*. New York: John Wiley and Sons.
- Deacon, H., Uys, L., & Mohlalane, R. (2009). HIV and stigma in South Africa. In P. Rohleder, L. Swartz, S. C. Kalichman, & L. C. Simbayi (Eds.), *HIV/AIDS in South Africa 25 years on: Psychosocial Perspectives* (pp. 105-120). New York: Springer.
- Dean, D. G. (1961). Alienation: Its meaning and measurement. *American Sociological Review, 26*, 753-758.

- Dean, D. G. (1969). Alienation. In D. G. Dean (Ed.), *Dynamic Social Psychology: Toward appreciation and replication* (pp. 141-143). New York: Random House.
- Dean, D. G. (2005). Alienation and marital adjustment. *Sociological Quarterly*, 9, 186-192.
- Deaton, A. (2002). Policy implications of the gradient of health and wealth. *Health Affairs: The Policy Journal of the Health Sphere*, 21, 13-30.
- Deaton, A. (2003). Health inequality, and economic development. *Journal of Economic Literature*, 41, 113-158.
- De Beers, J., Smith, U., Jansen, C. (2009). ``Situated in a separated campus``-Students` sense of belonging and academic performance: A case of the experiences of students during a higher education merger. *Education as Change*, 13, 167-194.
- de Catanzaro, D. (1981). *Suicide and self-damaging behaviour*. New York: Academic Press.
- deCharms, R. (1972). Personal causation training in the schools. *Journal of Applied Social Psychology*, 2, 95-113.
- Declercq, M., de Houwer, J., & Baeyens, F. (2008). Evidence for an expectancy-based theory of avoidance behaviour. *The Quarterly Journal of Experimental Psychology*, 61, 1803-1812.
- De Genna, N. M., Stack, D. M., Serbin, L. A., Ledingham, J. E., & Schwartzman, A. E. (2006). From risky behaviour to health risk: Continuity across two generations. *Journal of Developmental and Behavioural Paediatrics*, 27, 297-309.
- de Jonge, J., Dormann, C., Jansen, P. P. M., Dollard, M. F., Landeweerd, J. A. & Nijhuis, J. N. (2001). Testing reciprocal relationships between job characteristics and psychological well-being: A cross-lagged structural equation model. *Journal of Occupational and Organisational Psychology*, 74, 29-46.

- Delisi, M. & Berg, M. T. (2006). Exploring theoretical linkages between self-control theory and criminal justice system processing. *Journal of Criminal Justice*, 34, 153-163.
- Delobelle, P., Rawlinson, J. L., Ntuli, S., Malatsi, I., DeCock, R., & Depoorter, A. M. (2009). HIV/AIDS knowledge, attitudes, practices and perceptions of rural nurses in South Africa. *Journal of Advanced Nursing*, 65, 1061-1073.
- Denkowski, K. M., Denkowski, G. C., & Omizo, M. M. (1983). The effect of EMG-assisted relaxation training on the academic performance, locus of control, and self-esteem of hyperactive boys. *Applied Psychophysiology, and Biofeedback*, 8, 363-375.
- Dennis, M. K. (2009). Risk and protective factors for HIV/AIDS in Native Americans: Implications for preventive integration. *Social Work*, 54, 145-154.
- Denny, K. G., & Steiner, H. (2009). External and internal factors influencing happiness in elite collegiate athletes. *Child Psychiatry and Human Development*, 40, 55-72.
- Denscombe, M. (1993). Personal health and the social psychology of risk taking. *Health Education Research*, 8, 505-517.
- Department of Health. (2004). *National HIV and syphilis antenatal sero-prevalence survey in South Africa*. Pretoria: Health Systems Research, Research Co-ordination and Epidemiology.
- Dervic K., Oquendo, M. A., Grunebaum, M. F., Ellis, S., Burke, A. K., & Mann, J. J. (2004). Religious affiliation and suicide ideation attempt. *American Journal of Psychiatry*, 161, 2303-2308.
- Dettart-Davis, L., & Pandey, S. K. (2005). Red tape and public employees: Does perceived rule dysfunction alienate managers? *Journal of Public Administration Research and Theory*, 15, 133-148.

- Deutsch, M. (1960). Trust, trustworthiness, and the F scale. *Journal of Abnormal and Social Psychology*, 61, 138-140.
- De Volder, M. C., & Lens, W. (1982). Academic achievement and future time perspective of a cognitive motivational concept. *Journal of Personality and Social Psychology*, 42, 566-571.
- De Wall, C. N., Baumeister, R. F., Stillman, T. F., & Gailliot, M. T. (2005). Violence restrained: Effects of self-regulation and its depletion on aggression. *Journal of Experimental Social Psychology*, 43, 62-76.
- De Wit, S., & Dickinson, A. (2009). Associative theories of goal-directed behaviour: A case for animal-human translational models. *Psychological Research*, 73, 463-476.
- Diamond, L. (1994). Rethinking civil society: Toward democratic consolidation. *Journal of Democracy*, 5, 4-17. *Journal of Abnormal Psychology*, 82, 514-518.
- Diamond, M. J. & Shapiro, J. L. (1973). Changes in locus of control as a function of encounter group experiences. *Journal of Abnormal Psychology*, 82, 514-518
- Diecidue, E., & Van de Ven, J. (2008). Aspiration level, probability of success and failure, and unexpected utility. *International Economic Review*, 49, 683-700.
- Dickinson, D. (2004, June). *Medium-sized companies, many stakeholders: The sociology, psychology and political economy of HIV/AIDS responses in three manufacturing companies*. Paper presented at the ``HIV/AIDS in the workplace research symposium``, Centre for Health Policy, University of the Witwatersrand, Johannesburg, South Africa.
- Dickinson, D. & Stevens, M. (2005). Understanding the response of large South African companies to HIV/AIDS. *Journal of Social Aspects of HIV/AIDS*, 2, 286-295.

- DiClemente, R. J., & Crosby, R. A. (2009). Preventing HIV among adolescents in Sub-Saharan Africa. *Journal of Adolescent Health, 44*, 101-102.
- DiClemente, R. J., Crosby, R. A., & Kegler, M. (Eds.) (2009). *Emerging theories in health promotion and practice research*. New York: John Wiley & Sons.
- DiClemente, R. J. & Wingood, G. M. (1995). A randomised controlled trial of an HIV sexual risk-reduction intervention for young African-American women. *JAMA, 274*, 1271-1276.
- Dillon-Malone, C. (1988). Mutumwa Nchimi healers and wizardry beliefs in Zambia. *Social Science and Medicine, 26*, 1159-1172.
- DiPietro, R. B., & Pizam, A. (2008). Employee alienation in the quick service restaurant industry. *Journal of Hospitality and Tourism Research, 32*, 22-39.
- Divine, R. L., & Lepisto, L. (2005). Analysis of the healthy lifestyle consumer. *Journal of Consumer Marketing, 22*, 275-283.
- Dixon, S. K., & Kurpius, S. E. R. (2008). Depression and college stress among university undergraduates: Do mattering and self-esteem make a difference? *Journal of College Student Development, 49*, 412-424.
- Djokic, D., Englund, J., Daum, R., Martin, R., Dozier, T., Potts, S., Verber, L., & Marcinak, J. (2009). HIV knowledge and attitudes towards HIV testing of South side Chicago housing authority residence. *AIDS Patient Care and STDs, 23*, 23-28.
- Dolan, P. & Tsuchiya, A. (2009). The social welfare function and individual responsibility: Some theoretical issues and empirical evidence. *Journal of Health Economics, 28*, 210-220.
- Dorrington, R. (2001). *The impact of HIV/AIDS on adult mortality in South Africa*. Cape Town: Medical Research Council.

- Dorrington, R. E., Johnson, L. F., Bradshaw, D., & Daniel, T. (2009). *The demographic impact of HIV/AIDS in South Africa: National and provincial indicators for 2006*. Cape Town: Centre for Actual Research.
- Dotterer, A. M., McHale, S. M., & Crouter, A. C. (2009). Sociocultural factors and school engagement among African-American youth: The roles of racial discrimination, racial socialization, and ethnic identity. *Applied Developmental Science, 13*, 61-73.
- Douvan, E. & Adelson, J. (1958). The psychodynamics of social mobility in adolescent boys. *Journal of Abnormal and Social Psychology, 56*, 31-44.
- Dowden, A. R. (2009). Implementing self-advocacy training within a brief psycho-educational group to improve the academic motivation of black adolescents. *The Journal for Specialists in Group Work, 34*, 118-136.
- Doyal, L., Anderson, J., & Papparini, S. (2009). ``You are not yourself``: Exploring masculinities among heterosexual African men living with HIV in London. *Social Science and Medicine, 68*, 1901-1907.
- Dressler, W. W. (1990). Culture, stress, and disease. In T. M. Johnson & C. F. Sargent (Eds.), *Medical Anthropology* (pp. 248-268). New York: Praeger Publishers.
- Drimie, S. (2003). HIV/AIDS and land: Case studies from Kenya, Lesotho, and South Africa. *Development Southern Africa, 20*, 647-658.
- Dua, P. S. (1970). Comparison of the effects of behaviourally oriented action and psychotherapy reeducation on introversion-extraversion, emotionality, and internal-external control. *Journal of Counselling Psychology, 17*, 567-572.
- Duggleby, W. (2005). What about focus group interaction data? *Qualitative Health Research, 15*, 832-840.
- Duncan, N. & Bowman, B. (2009). Liberating South African Psychology: The legacy of racism and the pursuit of representative knowledge production. In C. C. Sonn & M. Montero (Eds.), *Psychology of liberation* (pp.1-21). New York: Springer.

- Dunkle, D. L., Jewkes, R. K., Brown, H. C., Gray, G. E., McIntyre, A. M., & Harlow, S. (2004). Gender-based violence, relationships, power, and the risk of HIV infection in women attending antenatal clinics in South Africa. *The Lancet*, 363, 1415-1421.
- Dunkle, K. L., Jewkes, R. K., Nduna, M., Levin, J., Jama, N., Khuzwayo, N., Koss, M. P., & Duvvury, N. (2006). Perpetration of partner violence and HIV risk among young men in the rural Eastern Cape, South Africa. *AIDS*, 20, 2107-2114.
- Dunn, K., Elsom, S., & Cross, W. (2007). Self-efficacy and locus of control affect management of aggression by mental health nurses. *Issues in Mental Health Nursing*, 28, 201-217.
- Du Plessis, G. E., Meyer-Weitz, A. J. & Steyn, M. (1993). *Study of the knowledge, attitudes, perceptions and beliefs regarding HIV and AIDS (KAPB)*. Pretoria: Human Sciences Research Council.
- Dweck, C. S. (1975). The role of expectations and attributions on the alleviation of learned helplessness. *Journal of Personality and Social Psychology*, 31, 674-685.
- Eaton, L., Flisher, A. J., & Aaro, L. E. (2003). Unsafe sexual behaviours in South African youth. *Social Science and Medicine*, 56, 149-165.
- Ebbling, C. B., Pearson, M. N., Sorensen, G., Levine, R. A., & Hebert, J. R. (2007). Conceptualization and development of a theory-based healthful eating and physical activity intervention for post-partum women who are low income. *Health Promotion Practice*, 8, 50-59.
- Eccles, J. (2009). Who am I and what am I going to do with my life? Personal and collective identities as motivators of action. *Educational Psychologist*, 44, 78-89.
- Eckersley, R. (2005). Is modern western culture a health hazard? *International Journal of Epidemiology*, 35, 252-258.

- Edel, M. A., Pfutze, E. M., Lieder, A., Assion, H. J., Ribbert, H., Juckel, G., & Brune, M. (2009). Self-concept, action control, and ADHD symptoms under methylphenidate treatment in adults with ADHD. *Pharmacopsychiatry*, 42, 109-113.
- Edelman, D., Christian, A., & Mosca, L. (2009). Associations of acculturation status with beliefs, barriers, and perceptions related to cardiovascular disease prevention among racial and ethnic minorities. *Journal of Transcultural Nursing*, 20, 278-285.
- Edmunds, R. K. (2006). Increasing access to care with diversity. *Journal of Dental Education*, 70, 918-920.
- Efran, J. (1963). Some personality determinants of memory for success and failure. Unpublished doctoral dissertation, Ohio State University.
- Eide, E. R., Showalter, M. H., & Goldhaber, D. D. (2009). The relation between children's health and academic achievement. *Child and Youth Services Review*, 32, 231-238.
- Eigsti, I. M., Zayas, V., Mischel, W., Shoda, Y., Ayduk, O., Dadlani, M. B., Davidson, M. C., Aber, J. L., & Casey, B. J. (2006). Predicting cognitive control from preschool late adolescence, and young adulthood. *Psychological Science*, 17, 478-484.
- Eitner, S., Wichmann, M., Paulsen, A., & Holst, S. (2006). Dental anxiety an epidemiological study on its clinical correlation and effects on oral health. *Journal of Oral Rehabilitation*, 33, 588-593.
- Elbadawi, I., & Sambanis, N. (2000). Why are there so many civil wars in Africa? Understanding and preventing violent conflict. *Journal of African Economies*, 9, 244-269.

- El-Bassel, N., Witte, S. S., Wada, T., Gilbert, L., & Wallace, J. (2004). Correlates of partner violence among female street-based sex workers: Substance abuse, history of childhood abuse, and HIV risks. *AIDS Patient Care and STDs*, 15, 41-51.
- Elfstrom, M. L., & Kreuter, M. (2006). Relationship between locus of control, coping strategies and emotional wellbeing in persons with spinal cord lesion. *Journal of Clinical Psychology in Medical Settings*, 13, 89-100.
- Elliot, J. G. (1997). Locus of control, personal control, and the counselling of children with learning and/ or behavioural problems. *British Journal of Guidance and Counselling*, 25, 27-46.
- Elliot, G. C., Cunningham, S. M., Linder, M., Colangelo, M., & Gross, M. (2005). Child physical abuse and self-perceived social isolation among adolescents. *Journal of Interpersonal Violence*, 20, 1663-1684.
- Ellis, S. (2008). Witchcraft, violence, and democracy in South Africa. *American Anthropologist*, 108, 401-401.
- Elwood, W. N., Williams, M. L., Bell, D. C., & Richard, A. J. (1997). Powerlessness and HIV prevention among people who trade sex for drugs. *AIDS Care*, 9, 273-284.
- Endresen K., & Von Kotze, A. (2005). Living while being alive: Education and learning in the Treatment Action Campaign. *International Journal of Lifelong Education*, 24, 431-441.
- Eng, E., & Blanchard, L. (2007). Action-oriented community diagnosis: A health education tool. *International Quarterly of Community Health Education*, 26, 141-158.
- Enticott, P. G., & Ogloff, J. R. P. (2006). Elucidation of impulsivity. *Australian Psychologist*, 41, 3-14.
- Epp, J. (1995). Achieving health for all: A framework for health promotion. *PanAmerican Health Organisation*, 557, 23-35.

- Epperson, M. W., Platais, I., Valera, P., Barbieri, R., & El-Bassel, N. (2009). Fear, trust and negotiating safety: HIV risks for Black female defendants. *Affilia*, 24, 257-271.
- Erwee, R. (1986). Achievement motivation and locus of control of Black university students. *South African Journal of Industrial Psychology*, 12, 1-9.
- Esplen, M. J., Stuckless, N., Berk, T., Butler, K., & Gallinger, S. (2009). The FAP self-concept scale. *Familial Cancer*, 8, 39-50.
- Essuon, A. D., Simmons, D. S., Stephens, T. T., Richter, D., Lindley, L. L., & Braithwaite, R. L. (2009). Transient populations: Linking HIV, migrant workers, and South African male inmates. *Journal of Health Care for the Poor and Underserved*, 20, 40-52.
- Evans, T. A., & Beran, M. J. (2007). Delay of gratification and delay maintenance by Rhesus Macaques (*Macaca Mulatta*). *Journal of General Psychology*, 134, 199-216.
- Evans, G. W., Gonnella, C., Marcynyszyn, L., Gentile, L., & Salpekar, N. (2005). The role of chaos in poverty and children's socio-emotional adjustment. *Psychological Science*, 16, 560-565.
- Evans, G. W., & Rosenbaum, J. (2008). Self-regulation and the income-achievement gap. *Early Childhood Research Quarterly*, 23, 504-514.
- Evans, S. W., Vallano, G. & Pelham, W. E. (1995). Attention deficit hyperactivity disorder. In V. B. Van Hasselt & M. Hersen (Eds.). *Handbook of adolescent psychiatry: A guide to diagnosis and treatment* (pp 589-617). New York: Lexington Books.
- Evenden, J. L., & Ryan, C. N. (1996). The pharmacology of impulsive behaviour in rats: The effects of drugs on response choice with varying delays of reinforcement. *Psychopharmacology*, 128, 161-170.

- Everitt, B. J., & Robbins, T. W. (2005). Neural systems of reinforcement for drug addiction: From actions to habits to compulsion. *Nature Neuroscience*, 8, 1481-1489.
- Evian, C., Fox, M., MacLeod, W., Slotow, S. J., & Rosen, S. (2004). Prevalence of HIV in workforces in Southern Africa 2000-2001. *South African Medical Journal*, 94, 846-850.
- Exline, J. J., Yali, A. M., Sanderson, W. C. (2000). Guilt, discord, and alienation: The role of religious strain in depression and suicidality. *Journal of Clinical Psychology*, 56, 1481-1496.
- Ewertzon, M., Lutzen, K., Svensson, E., & Andershed, B. (2008). Developing the concept of family involvement and alienation questionnaire in the context of psychiatric care. *International Journal of Mental Health Nursing*, 17, 439-449.
- Eyal, T., Sagristano, M. D., Trope, Y., Liberman, N., & Chaiken, S. (2009). When values matter: Expressing values in behavioural intentions for the near vs. distant future. *Journal of Experimental Social Psychology*, 45, 35-43.
- Fakier, A. (2004, June). *The global reporting initiative`s HIV/AIDS reporting guidelines in South Africa: Perceptions, uses and possible outcomes*. Paper presented at the HIV/AIDS in the workplace research symposium`, Centre for Health Policy, University of the Witwatersrand, Johannesburg, South Africa.
- Fang, X., & Mowen, J. C. (2009). Examining the trait and functional motive antecedents of four gambling activities: slot machines, skilled card games, sports betting, and promotional games. *Journal of Consumer Marketing*, 26, 121-131.
- Farrington, D. P. (2005). Childhood origins of antisocial behaviour. *Clinical Psychology and Psychotherapy*, 12, 177-190.
- Fassin, D., & Schneider, H. (2003). The politics of AIDS in South Africa: Beyond the controversies. *British Medical Journal*, 326, 495-496.

- Faver, C. A., & Strand, E. B. (2007). Fear-guilt, and grief: Harm to pets and the emotional abuse of women. *Journal of Emotional Abuse*, 7, 51-70.
- Fay, D. (2009). Land tenure, land use, and land reform at Dwesa-Cwebe, South Africa: Local transformation and the limits of the state. *World Development*, 20, In press.
- Fazey, D. M. A. & Fazey, J. A. (2001). The potential in learning: Perceptions of competence, motivation and locus of control in first-year undergraduate students. *Studies in Higher Education*, 26, 345-361.
- Feather, N. T. (1959). Subjective probability and decision under uncertainty. *Psychological Review*, 66, 150-164.
- Ferguson, R.F. (2003). Teachers' perceptions and expectations and the Black-White test score gap. *Urban Education*, 38, 460-507.
- Ferguson, I., & Lavalette, M. (2004). Beyond power and discourse: Alienation and social work. *British Journal of Social Work*, 34, 297-312.
- Fernandez, C. P. (2007). Creating thought diversity: The antidote to groupthink. *Journal of Public Health Management and Practice*, 13, 670-671.
- Ferracuti, S., & DeMarco, M. C. (2004). Ritual homicide during dissociative trance disorder. *International Journal of Offender Therapy and Comparative Criminology*, 48, 59-64.
- Ferrand, R. A., Corbett, E. L., Wood, R., Hargrove, J., Ndhlovu, C. E., Cowan, F. M., Gouws, E., & Williams, B. G. (2009). AIDS among older children and adolescents in Southern Africa: Projecting the time course and magnitude of the epidemic. *AIDS*, 23, 2039-2046.
- Field, D. & Millsap, R. (1991). Personality in advanced old age: Continuity or change. *Journal of Gerontology*, 46, 299-308.

- Field, M., Santarcangelo, M., Sumnall, H., Goudie, A., & Cole, J. (2006). Delay discounting and the behavioural economics of cigarette purchases in smokers: The effects of nicotine deprivation. *Psychopharmacology*, 186, 255-263.
- Finnegan, C., Morris, L. V., & Lee, K. (2009). Differences by course discipline on student behaviour, persistence, and achievement in online courses of undergraduate general education. *Journal of College Student Retention: Research, Theory, and Practice*, 10, 39-54.
- Fiscella, K., & Kitzman, A. (2009). Disparities in academic achievement and health: The intersection of child education and health policy. *Pediatrics*, 123, 1073-1080.
- Fischer, S., & Smith, G. T. (2008). Binge eating, problem drinking, and pathological gambling: Linking behaviour to shared traits and social learning. *Personality and Individual Differences*, 44, 789-800.
- Fishbein, D. H., Herman-Stahl, M., Eldreth, D., Paschall, M. J., Hyde, C., Hubal, R., Hubbard, S., Williams, J., & Lalongo, N. (2006). Mediators of stress-substance-use relationship in urban male adolescents. *Prevention Science*, 7, 113-126.
- Fisher, A. C. (2007). Creating a discourse of difference. *Education, Citizenship, and Social Justice*, 2, 159-192.
- Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS risk behaviour. *Psychological Bulletin*, 111, 455-474.
- Fisher, J. D., & Fisher, W. A., & Malloy, T. E. (1994). Empirical tests of an information-motivation-behavioural skills model of AIDS-preventive behaviour with gay men and heterosexual university students. *Health Psychology*, 13, 238-250.
- Fisher, H. H., Eke, A., Cance, J., Hawkins, S. R., & Lam, W. K. K. (2008). Correlates of HIV-related risk behaviours in African-American adolescents from substance-using families: Patterns of adolescent-level factors associated with sexual experience and substance use. *Journal of Adolescent Health*, 42, 161-169.

- Fisher, H. H., Eke, A. N., Cance, J. D., Hawkins, S. R., & Lam, W. K. K. (2008). Correlates of HIV-related risk behaviours in African-American adolescents from substance-using families: Patterns of adolescent-level factors associated with sexual experience and substance use. *Journal of Adolescent Health, 42*, 161-169.
- Fiske, A. P. (2002). Socio-moral emotions motivate action to sustain relationships. *Self and Identity, 1*, 169-175.
- Firth-Cozens, J., Cording, H., & Ginsburg, R. (2003). Can we select health professionals who provide safer care? *Quality and Safety in Health care, 12*, 16-20.
- Fishbach, A., & Trope, Y. (2005). The substitutability of external control and self-control. *Journal of Experimental Social Psychology, 41*, 256-270.
- Fitzherbert, J. (1960). The role of extrasensory perception in early childhood. *British Journal of Psychiatry, 106*, 1560-1567.
- Fitzgerald, T. (2009). The tyranny of bureaucracy: Continuing challenges of leading and managing from the middle. *Educational Management, Administration, and Leadership, 37*, 51-65.
- Flett, G. L., Blankstein, K. R., & Hewitt, P. L. (2009). Perfectionism, performance, and state positive affect and negative affect after a classroom test. *Journal of School Psychology, 24*, 4-18.
- Flisher, A. J., Evans, J., Muller, M., & Lombard, C. (2004). A brief report: Test-retest reliability of self-reported adolescent risk behaviour. *Journal of Adolescence, 27*, 207-212.
- Flouri, E. (2006). Parental interest in children`s education, children`s self-esteem, and locus of control, and later educational attainment: Twenty-six year follow up of the 1970 British birth cohort. *British, Journal of Educational Psychology, 76*, 41-56.

- Floyd, K., Reid, & Wilkinson, D. (1999). Admission trends in a rural South African hospital during the early years of HIV epidemic. *JAMA*, 282, 1087-1091.
- Flynn, K. E., Pina, I. L., Whellan, D. J., Lin, L., Blumenthal, J. A., Ellis, S. J., Fine, J. J., Howlett, J. G., Kateyian, S. J., Kitzman, D. W., Krans, W. E., Miller, N. H., Schulman, K. A., Spertus, J. A., O'Connor, C. M., & Weinfurt, K. P. (2009). Effects of exercise training on health status in patients with chronic heart failure: HF-Action randomised controlled trial. *JAMA*, 301, 1451-1459.
- Foll, D. L., Rascle, O., & Higgins, N. C. (2006). Persistence in a putting task during perceived failure: Influence of state-attributions and attributional style. *Applied Psychology*, 55, 586-605.
- Follett, K. J., & Hess, T. M. (2002). Aging, cognitive complexity and the fundamental attribution *Journal of Gerontology Series B*, 57, 312-323.
- Fonck, K., Kaul, R., Keli, F., Bwayo, J. J., Ngugi, E. N., Moses, S. & Temmerman, M. (2001). Sexually transmitted infections and vaginal douching in a population of female sex workers in Nairobi, Kenya. *Sexually Transmitted Infections*, 77, 271-275.
- Ford, H. J., Rose, J., & Thrift, S. (2009). An evaluation of the applicability of the self-regulation model to sexual offenders with intellectual disabilities. *Journal of Forensic Psychiatry and Psychology*, 20, 440-457.
- Forrest, J. I., Kaida, A., Dietrich, J., Miller, C. L., Hogg, R. S., & Gray, G. (2009). Perception of HIV and fertility among adolescents in Soweto, South Africa: Stigma and social barriers continue to hinder progress. *AIDS and Behaviour*, 13, 55-61.
- Francoa, L. M., Burkhalter, B., de Wagtb, A., Jennings, L., Kelly, A. G., & Hammink, M. E. (2009). Evidence base for children affected by HIV and AIDS in low prevalence and concentrated epidemic countries: Applicability to programming guidance from high prevalence countries (2009). *AIDS Care*, 21, 49-59.

- Frank, J. D. (1976). Psychotherapy and the sense of mastery. In R. L. Spitzer & D. F. Klein (Eds.), *Evaluation of Psychological Therapies*. Baltimore: John Hopkins University Press.
- Frankl, V. E. (1966). Logotherapy and existential analysis –a review. *American Journal of Psychotherapy*, 20, 252-260.
- Frankl, V. E. (1972). The feeling of meaninglessness: A challenge to psychotherapy. *American Journal of Psychoanalysis*, 32, 85-89.
- Frankl, V. E. (1988). *The will to meaning: Foundations and applications to logotherapy*. New York: Meridian.
- Franklin, R. D. (1963). Youth` expectancies about internal versus external control of reinforcement related to N variables. Unpublished doctoral dissertation, Purdue University.
- Franklin, A.J. (1999). Invisibility syndrome and racial identity development in psychotherapy and counseling African American men. *The Counseling Psychologist*, 27, 761-793.
- Francis, R. D. & Armstrong, A. (2007). Personal ethics in a corporate world. *Journal of Business Systems, Governance and Ethics*, 3, 27-33.
- Francis, L. A., & Susman, J. (2009). *Archives of Paediatrics and Adolescent Medicine*, 163, 297-302.
- Francoa, L. M., Burkhalter, B., de Wagtb, A., Jennings, L., Kelly, A. G., & Hammink, M. E. (2009). Evidence base for children affected by HIV and AIDS in low prevalence and concentrated epidemic countries: Applicability to programming guidance from high prevalence countries (2009). *AIDS Care*, 21, 49-59.
- Frangou, G., Wilkerson, K., & McGahan, J. R. (2008). Perceived freedom of responsibility, covariation among Cypriot adolescents. *The Journal of General Psychology*, 135, 183-204.

- Frank, J. D. (1935). Some psychological determinants of the level of aspiration. *American Journal of Psychology*, 47, 285-293.
- Franklin, R. D. (1963). Youth`s expectancies about internal-versus external control of reinforcement related to N variables. *Dissertation Abstracts*, 24, 1684-1684.
- Freedman, H. S., Tucker, J. S., Tomlinson-Keasey, C., Schwartz, J. E., Wingard, D. L., Criqui, M. H. (1993). Does childhood personality predict longevity? *Journal of Personality and Social Psychology*, 65, 176-185.
- Freeman, M., & Motsei, M. (1992). Planning health care in South Africa-is there a role for traditional healers? *Social Science and Medicine*, 34, 1183-1190.
- Freud, S. (1927). *The ego and the id*. London: Hogarth Press and the Institute of Psychoanalysis.
- Freud, S. (1933). *New Introductory lectures on psycho-analysis*. New York: W. W. Norton & Co. Inc.
- Freud, S. (1938). *The basic writings of Sigmund Freud*. New York: Modern Library.
- Freund, B. (2009). Inequality and the causes of poverty in South Africa. *Journal of African History*, 129-132.
- Friedel, J. M., Cortina, K. S., Turner, J. C., & Midgley, C. (2007). Achievement goals, efficacy beliefs, and coping strategies in mathematics: The roles of perceived parent and teacher goal emphases. *Contemporary Educational Psychology*, 32, 434-458.
- Friedland, G., Gandhi, N. R., Moll, A. P., Lalloo, U., Pawinski, R., Zeller, K., Moodley, P., & Meyer, E. (2009). Successful integration of tuberculosis and HIV treatment in rural South Africa: The sizonqoba study. *AIDS*, 50, 37-43.
- Friedman, H. S. (2001). Long-term relations of personality and health: Dynamisms, mechanisms, tropisms. *Journal of Personality*, 68, 1089-1107.

- Friedman, S. & Mottiar, S. (2005). Rewarding engagement? The Treatment Action Campaign and the politics of HIV/AIDS. *Politics and Society*, 33, 511-566.
- Fries, S., & Dietz, F. (2007). Learning in the face of temptation: The case of motivational interference. *Journal of Experimental Education*, 76, 93-112.
- Foulds, M. L. (1971). Changes in locus of internal-external control. *Comparative Group Studies*, 2, 293-300.
- Fuchs, V. R. (2004). Reflections on socio-economic correlates of health. *Journal of Health Economics*, 23, 653-661.
- Fujita, K., & Han, H. A. (2009). Moving beyond deliberate control impulses: The effect of construal levels and evaluative associations in self-control conflicts. *Psychological Science* 20: 799-804.
- Funder, D. C., Block, J. H., & Block, J. (1983). Delay of gratification: Some longitudinal personality correlates. *Journal of Personality and Social Psychology*, 44, 1198-1213.
- Furnham, A., Akande, D., & Baguma, P. (1999). Beliefs about health and illness in three countries: Britain, South Africa, and Uganda. *Psychology, Health, and Medicine*, 4, 189-202.
- Galliot, M. T., & Schmeichel, B. J. (2006). Self-regulation processes defined against the threat of death: Effects of self-control depletion and trait self-control on thoughts and fears of dying. *Journal of Personality and Social Psychology*, 91, 49-62.
- Gandhi, N., Moll, A., Sturm, A., Pawinski, R., Govender, T., Lalloo, U., Zeller, K., Andrews, J., & Friedland, G. (2006). Extensive-drug-resistant tuberculosis as a cause of death in patients co-infected with tuberculosis and HIV in a rural area of South Africa. *The Lancet*, 368, 1575-1580.

- Gannon, T. A., & Polaschek, D. L. L. (2006). Cognitive distortions in child molesters: A re-examination of key theories and research. *Clinical Psychology Review, 26*, 1000- 1019.
- Garcia, A. (2006). Is health promotion relevant across cultures and the socio-economic spectrum? *Family and Community Health: The Journal of Health Promotion and Maintenance, 29*, 205-275.
- Gao, L., Zhao, L. & Jin, O. (2009). Meta-analysis: Prevalence of HIV infection and syphilis among MSM in China. *Sexually Transmitted Infections, 85*, 313-313.
- Garner, R. C. (2000). Safe sects? Dynamic religion and AIDS in South Africa. *Journal of Modern African Studies, 38*, 41-69.
- Garos, S., Kluck, A. S., Beggan, J. K., Martindale, J., Wheeler, A. E., & Zacchilli, T. C. (2008). Temptation bias: Can self-enhancement limit the influence of gender stereotypes? *Sex roles, 58*, 311-329.
- Garret, L. (2007). The challenges of global health. *Foreign Affairs New York, 86*, 14-38.
- Gatzke-Kopp, L. M., Beauchaine, T. P., Shannon, K. E., Chipman, S. J., Fleming, A. P., Crowell, S. E., Liang, O., Aylward, E., & Johnson, L. C. (2009). Neurological correlates of reward responding in adolescents with and without externalising behaviour disorders. *Journal of Abnormal Psychology, 118*, 203-213.
- Gay, G. (2000). *Culturally responsive teaching*. New York: Teachers College Press.
- Geis, K. J., & Ross, C. E. (1998). A new look at urban alienation: The effect of neighbourhood disorder on perceived powerlessness. *Social Psychology Quarterly, 61*, 232-246.
- Gerber, B., & Hendel, T. (2006). Outcome expectations drive learned behaviour in larval drosophila. *Proceedings of the Royal Society of London, 273*, 2965-2968.

- Geschiere, P. (2008). Witchcraft and the state: Cameron and South Africa: Ambiguities of “reality” and “superstition”. *Past and Present*, 199, 313-335.
- Getter, H. (1966). A personality determinant of verbal conditioning. *Journal of Personality*, 34, 397-405.
- Ghandour, L. A., Karam, E. G., & Maalouf, W. E. (2009). Lifetime alcohol use, abuse, and dependence among university students in Lebanon: Exploring the role of religiosity in different religious faiths. *Addiction*, 104, 940-948.
- Ghorpade, J., Lackritz, J., & Singh, G. (2008). Intrinsic religious orientation: Ethnic differences with a lay sample. *International Journal of Sustainable Society*, 1, 103-116.
- Gibson, C. L., Khey, D., & Schreck, C. J. (2008). Gender, internal controls, and academic dishonesty: Investigating mediating and differential effects. *Journal of Criminal Justice Education*, 19, 2-18.
- Gibson, L. & McIntyre, D. (2008). The interface between research and policy: Experience from South Africa. *Social Science and Medicine*, 67, 748-759.
- Gibson, C. L., Morris, S. Z., & Beaver, K. M. (2009). Secondary exposure to violence during childhood and adolescents: Does neighbourhood context matter? *Justice Quarterly*, 26, 30-57.
- Gilbert, L. & Walker, L. (2002). Treading the path of least resistance: HIV/AIDS and social inequalities-A South African case study. *Social Science and Medicine*, 54, 1093- 1110.
- Gilligan, J., & Lee, B. (2006). The psychopharmacologic treatment of violent youth. *Annals of the New York Academy of Sciences*, 1036, 356-381.
- Gilovich, T. (1981). Seeing the past in the present: The effect of associations to familiar events on judgement and decisions. *Journal of Personality and Social Psychology*, 40, 797-808.

- Gilovich, T., & Eibach, R. (2001). The fundamental attribution error where it really counts. *Psychological Inquiry*, 12, 23-26.
- Goetzel, R. Z. (2009). Do prevention of treatment services save money? The wrong debate. *Health Affairs*, 28, 37-41.
- Goetzel, R. Z., & Ozminkowski, R. J. (2008). The health and cost benefits of worksite health promotion programs. *Annual Review of Public Health*, 29, 303-323.
- Goggin, K., Malcarne, V. L., Metcalf, K. A., & Wallston, K. A. (2007). Do religious and control cognitions predict risky behaviour? Development and validation of the sexual risk behaviour-related God locus of control scale for adolescents (SexGLOCA). *Cognitive Therapy and Research*, 31, 123-139.
- Gol, S., & Oner, M. A. (2009). Operationalisation of space/time perspectives of individual theory and empirical results from Turkey. *Futures*, 41, 301-312.
- Goldbeck, L. & Bundschuh, S. (2007). Illness perception in paediatric somatisation and asthma: Complaints and health locus of control beliefs. *Child Adolescent Psychiatry and Mental Health*, 1, 5-5.
- Goldberg, J. H., Millstein, S., Schwartz, A., & Halpern-Felsher, B. (2009). Intertemporal tradeoffs: Perceiving the risk in the benefits of marijuana in a prospective study of adolescents and young adults. *Medical Decision Making*, 29, 182-192.
- Goldberg, A. D., Chiapetta, L., & Gold, M. A. (2007). The relationship between depressive symptoms and risk-taking behaviour in female adolescents. *Journal of Pediatric and Adolescent Gynecology*, 20, 131-131.
- Goldsmith, A. H., Veum, J. R. & Darity, W. (1996). The impact of labour force history on self-esteem and its component parts, anxiety, alienation, and depression. *Journal of Economic Psychology*, 17, 183-220.

- Goodnow, J. J., & Pettigrew, T. F. (1955). Effects of prior patterns of experience upon strategies and learning sets. *Journal of Experimental Psychology*, 49, 381-389.
- Goodnow, J. J., & Postman, L. (1955). Probability learning in a problem-solving situation. *Journal of Experimental Psychology*, 49, 16-22.
- Gore, J. S., Cross, S. E., & Kanagawa, C. (2009). Acting in our interests: Relational self-construal and goal motivation across cultures. *Motivation and Evolution*, 33, 75-87.
- Gore, P. M., & Rotter, J. B. (1963). A personality correlate of social action. *Journal of Personality*, 31, 58-64.
- Gorelick, P. B. (1998). Cerebrovascular disease in African-Americans. *Stroke*, 29, 2656-2664.
- Gorman, B. S. (1968). An observation of altered locus of control following political disappointment. *Psychological Reports*, 23, 1094.
- Goss, A., & Morosko, T. E. (1970). Relationship between a dimension of internal-external control and the MMPI with an alcoholic population. *Journal of Consulting and Clinical Psychology*, 34, 189-192.
- Gouws, A. (2008). Obstacles for women in leadership positions: The case of South Africa. *Journal of Women in Culture and Society*, 34, 21-27.
- Grant, D., Martinez, D. G., & White, B. W. (1998). Substance abuse among African-American children: A developmental framework for identifying intervention strategies. *Journal of Human Behaviour in the Social Environment*, 1, 137-163.
- Greef, A., & Aspeling, E. (2007). Resilience in South Africa and Belgian single-parent families. *Acta Academica*, 39, 139-157.
- Green, B. L., Lewis, R. K., Wang, M. Q., Person, S., & Rivers, B. (2004). Powerlessness, destiny, and control: The influence on health behaviour of African-Americans. *Journal of Community Health*, 29, 15-27.

- Greenberg, R. P. & Constantino, M. J., & Bruce, N. (2006). Are patient expectations still relevant for psychotherapy process and outcome? *Clinical Psychology Review*, 26, 657-678.
- Grossman, J. M., & Liang, B. (2008). Discrimination distress among Chinese American adolescents. *Journal of Youth and Adolescence*, 37, 1-11.
- Gottdiener, W. H., Murawski, P., Kucharski, L. T. (2008). Using the delay discounting task to test for failures in ego control in substance abusers: A meta-analysis. *Psychoanalytic Psychology*, 25, 533-540.
- Giusti, D., Criel, B., & De Bethune, X. (1997). Public versus private health care delivery: Beyond the slogans. *Health Policy and Planning*, 12, 193-198.
- Graham, D. T. (1967). Health, disease, and the body-mind problem: Linguistic parallelism. *Psychosomatic Medicine*, 29, 52-71.
- Graves, M. (2008). *Mind, brain, and the elusive soul: Human systems of cognitive science and religion*. London: Ashgate Publishing.
- Green, E. C., Zokwe, B., Dupree, J. D. (1995). The experiences of an AIDS prevention programme focused on South African traditional healers. *Social Science and Medicine*, 40, 503-515.
- Greene, J. D., & Paxton, J. M. (2009). Patterns of neural activity associated with honest and dishonest moral decisions. *Proceedings of the National Academy of Sciences*, 106, 12506-12511.
- Greguras, G. J., & Diefendorff, J. M. (2009). Different fits satisfy different needs: Linking person environment fit to employee commitment and performance using self-determination theory. *Journal of Applied Psychology*, 94, 465-477.
- Greyson, B. (2006). Near-death experiences and spirituality. *Journal of Religion and Science*, 41, 393-414.

- Griffeth, R. W., & Hom, P. W. (1988). Locus of control and delay of gratification as moderators of employee turnover. *Journal of Applied Social Psychology*, 18, 1318-1333.
- Griffin, K. W., Botvina, G. J., & Nichols, T. R. (2006). Effects of a school-based drug abuse prevention programme for adolescents on HIV risk behaviour in young adulthood. *Prevention Science*, 7, 103-112.
- Griffiths, K., Farrer, L., & Christensen, H. (2007). Clickety-click: e-mental health train on track. *Australasian Psychiatry*, 15, 100-108.
- Gross, D., Fogg, L., & Tucker, S. (1995). The efficacy of parent training for promoting positive parent-toddler relationships. *Research in Nursing and Health*, 18, 489-499.
- Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences on attitudes-behaviour relationships: A natural experiment with curb side recycling. *Environment and Behaviour*, 27, 699-718.
- Guerrieri, R., Nederkoorn, C., & Jansen, A. (2008). The effect of an impulsive personality on overeating and obesity: Current state of affairs. *Psychological Topics*, 17, 265-286.
- Guillebeau, C. (1999). Affirmative action in a global perspective: The cases of South Africa and Brazil. *Sociological Spectrum: Mid-South Sociological Association*, 19, 443-465.
- Gulliksen, H. O. (1938). Extrasensory perception: What is it? *The American Journal of Sociology*, 43, 623-634.
- Gureje, O., & Alem, A. (2000). Mental health policy development in Africa. *Bulletin-World Health Organisation*, 78, 475-482.
- Gyimah-Boadi, E. (1996). Civil society in South Africa. *Journal of Democracy*, 7, 118-132.

- Gysels, M., Pool, R., & Bwanika, K. (2001). Truck drivers, middlemen, and commercial sex workers: AIDS and the mediation of sex in South West Uganda. *AIDS Care*, 13, 373-386.
- Gwandure, C. (2006). Infantile colic among the traditional Shona people: An ethnopsychological perspective. *Journal of Psychology in Africa*, 16, 119-122.
- Gwandure, C. (2007a). Sexual assault in childhood: Risk HIV/AIDS behaviours in adulthood. *AIDS Care*, 19, 1313-1315.
- Gwandure, C. (2007b). Home-based care for parents living with AIDS: Impact on children`s psychological functioning. *Journal of Child and Adolescent Mental Health*, 19, 29-44.
- Gwandure, C. (2008a). Disability, locus of control, and HIV/AIDS prevention and control. *International Journal of Disability, Community and Rehabilitation*, 7, 1-9.
- Gwandure, C. (2008b). Dissociative fugue: Diagnosis, presentation, and treatment among the traditional Shona people. *The Open Anthropology Journal*, 1, 1-10.
- Gwandure, C. (2009a). Race and study material preference among first year social psychology students. *Journal of Educational Studies*, 8, 149-164.
- Gwandure, C. (2009b). Mubobobo: Women have no sexual fantasies in their sleep. *The Open Anthropology Journal*, 1-8.
- Hagglund, D., & Gerd, A. (2007). The meaning of women`s experience of living with long-term urinary incontinence is powerlessness. *Journal of Clinical Nursing*, 16, 1946-1954.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*. New Jersey: Prentice-Hall.
- Hajda, J. (1961). Alienation and integration of student intellectuals. *American Sociological Review*, 26, 758-777.

- Halbert, C. H., Armstrong, K., Gandy, O. H., & Shaker, L. (2006). Racial differences in trust in health care providers. *Archives of Internal Medicine*, 166, 896-901.
- Hall, J. H., & Fincham, F. D. (2005). Self-forgiveness?: The stepchild of forgiveness research. *Journal of Social and Clinical Psychology*, 24, 621-637.
- Hall, E., Hall, C. & Abaci (1997). The effects of human relations training on reported teacher stress, pupil control ideology and locus of control. *British Journal of Educational Psychology*, 67, 483-496.
- Hall, R. E. & Jones, C. I. (2007). The value of life and the rise in health spending. *The Quarterly Journal of Economics*, 122, 39-72.
- Hall, N. C., Perry, R. P., Chipperfield, J. G., Clifton, R. A., & Haynes, T. L. (2006). Enhancing primary and secondary control in achievement settings through writing-based attributional retraining. *Journal of Social and Clinical Psychology*, 25, 361-391.
- Hamilton-Attwell, A. (1998). Productivity and work ethics. *Work Study*, 47, 77-86.
- Hammack, P. L. (2003). Toward a unified theory of depression among urban African-American youth: Integrating socioecologic, cognitive, family stress, and biopsychosocial perspectives. *Journal of Black Psychology*, 29, 187-209.
- Hammer, L. R. (1968). Relationship of reinforcement value to consummatory behaviour. *Journal of Comparative Physiological Psychology*, 66, 667-672.
- Hammond-Tooke, W. D. (1985). Descent, groups, chiefdoms, and South African historiography. *Journal of Southern African Studies*, 11, 305-319.
- Hammond, T., Clayton, B. M., & Arnold, P. J. (2009). South Africa's transition from apartheid: The role of professional closure in the experiences of Black chartered accountants. *Accounting, Organisations and Society*, 34, 705-721.
- Hampton, R., Oliver, W., & Magarian, L. (2003). Domestic violence in the African-American community: An analysis of social and structural factors. *Violence Against Women*, 9, 533-557.

- Hangwanishkul, D., Happanoy, K. R., Lee, W. S. C., & Zelazo, P. D. (2005). Assessment of hot and cool executive function in young children: Age-related changes and individual differences. *Developmental Neuropsychology*, 28, 617-644.
- Hanton, S., Neil, R., & Mellalieu, S. D. (2008). Recent developments in competitive anxiety direction and competition stress research. *International Review of Sports and Exercise Psychology*, 1, 45-57.
- Hardy, S., Padilla-Walker, L. & Carlo, G. (2008). Parenting dimensions and adolescents' internalisation of moral values. *Journal of Moral Education*, 37, 205-225.
- Hariri, A. R., Brown, S. M., Williamson, D. E., Flory, J. D., de Wit, H., & Manuck, S. B. (2006). Preference for immediate over delayed rewards is associated with magnitude of ventral striatal activity. *The Journal of Neuroscience*, 26, 13213-13217.
- Harris, K., Salway, S. (2009). Long-term ill-health, poverty, and ethnicity. *Ethnicity and Inequalities in Health and Social Care*, 2, 39-48.
- Harrison, A. Karim, S. A., Floyd, K., Lombard, C., Lurie, M., Ntuli, N., & Wilkinson, D. (2000). Syndrome packets and health worker training improve sexually transmitted disease case management in South Africa: Randomised controlled trial. *AIDS*, 14, 2769-2780.
- Harrison, A., Xaba, N., & Kunene, P. (2001). Understanding sex: Gender narratives of HIV and pregnancy prevention by rural South African school-going youth. *Reproductive Health Matters*, 17, 63-71.
- Harkness, S., & Super, C. M. (1999). From parents' cultural belief systems to behaviour. In L. Edering & P. Leseman (Eds.), *Effective Early Education* (pp. 67-90). London: Routledge.
- Harper, B., & Tuckman, B. (2006). Racial identity beliefs and academic achievement: Does being black hold students back? *Social Psychology of Education*, 9, 381-403.

- Harrow, M., & Ferrante, A. (1969). Locus of control in psychiatric patients. *Journal of Consulting and Clinical Psychology, 33*, 582-589.
- Harrow, M., Hansford, B., & Astrachan-Fletcher, E. B. (2009). Locus of control: Relation to schizophrenia, recovery, depression, and psychosis: A 15-year longitudinal study. *Psychiatry Research, 168*, 186-192.
- Hart, T. & Evans, J. (2006). Self-regulation and goal theories in brain injury rehabilitation. *Journal of Head Trauma Rehabilitation, 21*, 142-155.
- Hartman, J. B., Shim, S., Barber, B., & O'Brien, M., (2006). Adolescents utilitarian and hedonic web consumption behaviour: Hierarchical influence of personal values and innovativeness. *Psychology and Marketing, 23*, 813-839.
- Harvey, J. M. (1971). Locus of control shift in administrators. *Perceptual and Motor Skills, 33*, 980-982.
- Harvey, P. D., & Bellack, A. S. (2009). Toward a terminology for functional recovery in schizophrenia: Is functional remission a visible concept? *Schizophrenia Bulletin, 35*, 300-306.
- Harvey, J., & Delfabbro, P. H. (2004). Psychological resilience in disadvantaged youth: A critical review. *Australian Psychologist, 39*, 3-13.
- Harwood, G. A., Salsberry, P., Ferketich, P., & Wewers, M. E. (2007). Cigarette smoking, socio-economic status and psychological factors: Examining a conceptual framework. *Public Health Nursing, 24*, 361-371.
- Hastings, E. C., & West, R. L. (2009). The relative success of a self-help and a group-based memory training program for older adults. *Psychology of Aging, 24*, 586-594.
- Hattrup, K., O'Connell, M. S., & Labrador, J. R. (2005). Incremental validity of locus of control after controlling for cognitive ability and conscientiousness. *Journal of Business and Psychology, 19*, 461-481.

- Haugli, L., Steen, E., Laerum, E., Finset, A., & Nygaard, R. (2000). Agency orientation and chronic musculoskeletal pain: Effects of a group learning programme based on the personal construct theory. *Clinical Journal of Pain*, 16, 281-289.
- Hayes, G. (2000). The struggle for mental health in South Africa: Psychologists, apartheid and the story of Durban DASSSA. *Journal of Community and Applied Social Psychology*, 10, 327-342.
- Hayness, T.C., Ruthig, J. C., Pery, R. P., Stupnisky, R. R., & Hall, N. C. (2006). Reducing the academic risks of over-optimism: The longitudinal effects of attributional retraining on cognition and achievement. *Research in Higher Education*, 47, 755-779.
- Hays, R. D. & Stewart, A. L. (1990). Structure of self-reported health in chronic disease patients. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2, 22-30.
- Hayward, K. (2007). Situational crime prevention and its discontents: Rational choice theory versus the ``culture of now`. *Social Policy and Administration*, 41, 232-250.
- Hazen, H. D., & Alberts, H. Z. (2006). Visitors or immigrants? International students in the United States. *Population Space and Place*, 12, 201-216.
- Heath, N. L., Toste, J. R., Nedecheva, T., & Charlebois, A. (2008). An examination of nonsuicidal self-injury among college students. *Journal of Mental Health Counselling*, 30, 137-156.
- Heatherton, T. F., & Baumeister, R. F. (1996). Self-regulation, past, present, and future. *Psychological Inquiry*, 7, 90-98.
- Heeren, G. A., Jemmott, J. B., Mandeya, A., & Tyler, J. C. (2009). Sub-Saharan African university students` beliefs about condoms, condom-use, intention and subsequent condom use: A prospective study. *AIDS and Behaviour*, 13, 268-276.

- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Helleve, A., Flisher, A. J., Onya, H., Mukoma, W., & Klepp, K. I. (2009). South African teachers' reflections on the impact of culture on their teaching of sexuality and HIV/AIDS. *Culture, Health and Sexuality*, 11, 189-204.
- Hellstrom, T., (2008). Innovation as social action. *Organisation*, 11, 631-649.
- Henderson-King, D., & Smith, M. N. (2006). Meanings of education for university students: Academic motivation and personal values as predictors. *Social Psychology of Education*, 9, 195-221.
- Hendricksen, E. S., Pettifor, A., Lee, S. J., Coates, T. J. & Rees, H. V. (2007). Prediction of condom use among young adults in South Africa: The reproductive health and HIV research unit national youth survey. *American Journal of Public Health*, 97, 1241-1248.
- Henry, J. (2004). Extrasensory perception. In J. Henry (Ed.), *Parapsychology: Research on exceptional experiences* (pp. 99-108). Abingdon: Francis and Taylor.
- Herman, M. R. (2009). The Black-White-Other achievement gap: Testing theories of academic performance among multiracial and monoracial adolescents. *Sociology of Education*, 82, 20-46.
- Hermann-Pillath, C. (2009). Elements of a neo-Weblenian theory of the individual. *Journal of Economic Issues*, 43, 189-214.
- Hernando, V., del Romero, J., & Garcia, S., Rodriguez, C., del Amo, J., & Castilla, J. (2009). Reducing sexual risk behaviour among steady heterosexual serodiscordant couples in a testing and counselling program. *Sexually Transmitted Diseases*, 36, 621-628.
- Herrnstein, R. J. (1970). The law of effect. *Journal of Experimental Analysis of Behaviour*, 13, 243-266.

- Hersch, P. D., & Scheibe, K. E. (1967). Reliability and validity of internal-external control as a personality dimension. *Journal of Consulting Psychology*, 31, 609-613.
- Heslin, P. A. (2005). Conceptualising and evaluating career success. *Journal of Organisational Behaviour*, 26, 113-136.
- Heywood, M. (2003). Preventing mother-to-child HIV transmission in South Africa: Background, strategies, and outcomes of the Treatment Action Campaign case against the Minister of Health. *South African Journal on Human Rights*, 19, 278-315.
- Heywood, M. (2009). South Africa's treatment action campaign: Combining law and social mobilization to realize the right to health. *Journal of Human Rights Practice*, 1, 14-36.
- Hider, P. N., Griffin, G. & Coughlan, E. (2009). Information-seeking behaviour of staff in a large health care organisation. *Journal of Medical Library Association*, 97, 47-50.
- Hiner, C. A., Mandel, B. G., Weaver, M. R., Bruce, D., McLaughlin, R., & Anderson, J. (2009). Effectiveness of a training-of-trainers model in a HIV counselling and testing program in the Caribbean Region. *Human Resource for Health*, 7, 11-11.
- Hirsh, J. B., Peterson, J. B., & Morisano, D. (2008). Delay discounting: Interactions between personality and cognitive ability. *Journal of Research in Personality*, 42, 1646-1650.
- Hirschmann, D. (1998). Civil society in South Africa: Learning from gender themes. *World Development*, 26, 227-238.
- Hirst, G., Knippperberg, D. V., & Zhou, J. (2009). A cross-level perspective on employee creativity: Goal-orientation, team learning behaviour, and individual creativity. *The Academy of Management Journal*, 52, 280-293.

- Hislop, T. G., Low, A., Yasui, Y., Tu, S. P., Li, L., & Taylor, V. M. (2008). Knowledge and behaviour regarding heart disease prevention in Chinese Canadian immigrants. *Canadian Journal of Public Health, 99*, 1-4.
- Ho, A. K., Thomsen, L., & Sidanius, J. (2009). Perceived academic competence and overall job evaluation: Student evaluations of African-American and European-American professors. *Journal of Applied Psychology, 39*, 389-406.
- Hobbs, M., & McLaren, S. (2009). The interrelations of agency, depression, and suicide ideation among older adults. *Suicide and Life-Threatening Behaviour, 39*, 161-171.
- Hoff, P. (2006). Delusion in general and forensic psychiatry-historical and contemporary aspects. *Behavioural Science and Law, 24*, 241-255.
- Hofmann, W., Friese, M., & Roefs, A. (2009). Three ways to resist temptation: The independent contributions of executive attention, inhibitory control, and affect regulation to the impulse control of eating behaviour. *Journal of Experimental Social Psychology, 45*, 431-435.
- Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-system perspective. *Perspectives on Psychological Science, 4*, 162-176.
- Hoffman, S., O'Sullivan, L. F., Harrison, A., Dolezal, C., Monroe-Wise, A. (2006). HIV risk behaviours and the context of sexual coercion in young adults' sexual interactions: Results from a diary study in rural South Africa. *Sexually Transmitted Diseases, 33*, 52-58.
- Hofmann, W., Rauch, & Gawronski, B. (2007). And deplete us not into temptation: Automatic attitudes, dietary restraint, and self-regulatory resources as determinants of eating behaviour. *Journal of Experimental Social Psychology, 43*, 497-504.
- Hofstede, G. (1980). *Culture's consequences*. Beverly Hills: Sage.

- Hofstede, G. (2006). What did GLOBE really measure? Researchers minds versus respondents` minds. *Journal of International Business Studies*, 37, 882-896.
- Hogarth, L., Dickinson, A., Hutton, S. B., Elbers, N., & Duka, T. (2006). Drug expectancy is necessary for stimulus control of human attention, instrumental drug-seeking behaviour and subjective pleasure. *Psychopharmacology*, 185, 495-504.
- Hoge, E. A., Austin, E. D., & Pollack, M. H. (2007). Resilience: Research evidence and conceptual considerations for posttraumatic stress disorder. *Depression and Anxiety*, 24, 139-152.
- Holmes, D. O., Byrne, P., & Gastaldo, D. (2006). Raw sex as limit experience: A foucauldian analysis of unsafe anal sex between men. *Social Theory and Health*, 4, 319-333.
- Holt, C. L., Clark, E. M., Kreuter, M. W., & Scharff, D. P. (2000). Does locus of control moderate the effects of tailored health education materials? *Health Education Research*, 15, 393-403.
- Holtzman, J. S., & Seirawan, H. (2009). Impact of community-based oral health experiences on dental students attitudes towards caring for the underserved. *Journal of Dental Education*, 73, 303-310.
- Homsy, J., King, R., Tenywa, J., Kyeyune, P., Opio, A., & Balaba, D. (2004). Defining minimum standards of practice for incorporating African-traditional medicine into HIV/AIDS prevention, care, and support: A regional initiative in Eastern and Southern Africa. *Journal of Alternative and Complementary Medicine*, 10, 905-910.
- Hoque, E., & Hoque, M. (2009). Knowledge and attitude towards cervical cancer among female university students in South Africa. *South African Journal of Epidemiology and Infection*, 24, 21-24.

- Houston, B. K. (1972). Control over stress, locus of control, and response to stress. *Journal of Personality and Social Psychology*, 21, 249-255.
- Hovey, J. D., Kim, S. E., & Seligman, L. D. (2006). The influence of cultural values, ethnic identity and language use on the mental health of Korean American college students. *The Journal of Psychology: Interdisciplinary and Applied*, 140, 499-511.
- Howell, A. J. (2009). Flourishing: Achievement-related correlates of students' wellbeing. *Journal of Positive Psychology*, 4, 1-13.
- Howell, A. J., & Buro, K. (2009). Implicit beliefs, achievement goals, and procrastination: A mediational analysis. *Learning and Individual Differences*, 19, 151-154.
- Howitt, D. & Cramer, D. (2008). *Introduction to research methods in psychology*. London: Pearson Education.
- Hoyle, R. H. (2006). Personality and self-regulation: Trait and information processing perspectives. *Journal of Personality*, 74, 1507-1526.
- Hoyt, A. L., Rhodes, A. E., Hausenblas, H. A., & Giacobbi, P. R. (2009). Integrating five-factor model facet-level traits with the theory of planned behaviour. *Psychology of Sport and Exercise*, 10, 565-572.
- Hudley, C., Graham, S., & Taylor, A. (2007). Reducing aggressive behaviour and increasing motivation in school: The evolution of an intervention to strengthen school adjustment. *Educational Psychologist*, 42, 251-260.
- Hugo, C J., Boshoff, D. E. L., Traut, A., Zungu-Dirwayi, N., & Stein, D. J. (2003). Community attitudes toward and knowledge of mental illness in South Africa. *Social Psychiatry and Psychiatric Epidemiology*, 38, 715-719.
- Hull, C. L. (1930). Knowledge and purpose as habit mechanisms. *Psychological Review*, 37, 511-521.

- Hull, C. L. (1943). *Principles of behaviour: An introduction to behaviour theory*. New York: Apple-ton Century-Crofts.
- Hunter, J. B., Fernandez, M. L., Lacy-Martinez, C. R., Dunne-Sosa, A. M., & Coe, M. K. (2007). Male preventive health behaviours: Perceptions from men, women, and clinical staff along the US-Mexico border. *American Journal of Men`s Health*, 1, 242-249.
- Huschka, D. & Mau, S. (2006). Social anomie and racial segregation in South Africa. *Social Indicators Research*, 76, 467-498.
- Husman, J., & Shell, D. F. (2008). Beliefs and perceptions about the future time perspective. *Learning and Individual Differences*, 18, 166-175.
- Hutchens, L., Senserrick, T. M., Jamieson, P. E., Romer, D., & Winston, F. K. (2008). Teen driver crash risk and associations with smoking and drowsy driving. *Accident Analysis and Prevention*, 40, 869-876.
- Ievers-Landis, C. E., Greenley, R. N., Borawski, E. (2006). Cognitive social maturity, life change events, and health risk behaviours among adolescents: Development of a structural equation model. *Journal of Clinical Psychology*, 13, 107-116.
- Ikin, J. F., Sim, M. R., Creamer, M. C., Forbes, A. B., Mckenzie, D. P., Kelsall, H. L., Glass, D. C., McFarlane, A. C., Abramson, M. J., & Ittak, P. (2004). War-related psychological stressors and risk of psychological disorders in Australian veterans of 1991 Gulf war. *British Journal of Psychiatry*, 185, 116-126.
- Iliffe, S., Karicha, K., Hariri, D., Swift, C., Gillman, G., & Stuck, A. E. (2007). Health risk appraisal in older people 2: The implications for clinicians and commissioners of social isolation risk in older people. *British Journal of General Practice*, 57, 277-282.
- Iqbal, J. M. (2009). AIDS and the state: A comparison of Brazil, India, and South Africa. *South Asian Survey*, 16, 119-135.

- Irwin, D. D. (2009). Awards for suffering: The Nobel Peace Prize recipients of South Africa. *Contemporary Justice Review: Issues in Criminal, Social, and Restorative Justice*, 12, 157- 170.
- Israel B. A., Checkoway, B., Schulz, A., & Zimmerman, M. (1994). Health education and community empowerment: Conceptualising and measuring perceptions of individual, organisational, and community control. *Health Education Quarterly*, 21, 149-170.
- Israel, A. C., Guile, C. A., Baker, J. E., & Silverman, W. K. (1994). An evaluation of enhanced self-regulation training in the treatment of childhood obesity. *Journal of Pediatric Psychology*, 19, 737-749.
- Israel, N., & Jozefowicz-Simbeni, D. M. H. (2009). Perceived strength of urban girls and boys experiencing homelessness. *Journal of Community and Applied Social Psychology*, 19, 156-164.
- Iwasaki, S., & Liu, G. (2009). Cognitive neuroscience utility: a functional review. *Interdisciplinary Information Sciences*, 15, 13-23.
- Iyer, D. N., & Miller, K. D. (2008). Performance feedback, slack, and the timing of acquisitions. *The Academy of Management Journal*, 51, 808-822.
- Jackson, R. (2002). The national financial aid scheme of South Africa (NSFA): How and why it works. *Welsh Journal of Education*, 11, 82-94.
- Jacobson, P. D., & Warner, K. E. (1999). Litigation and public health policy making: The case of tobacco control. *Journal of Health Politics, Policy and Law*, 24, 769-804.
- Jahromi, L. B. & Stifter, C. A. (2008). Individual differences in preschoolers` self-regulation and theory of mind. *Merrill-Palmer Quarterly*, 54, 125-150.

- James, S., Reddy, S. P., Taylor, M., & Jinabhai, C. C. (2007). Young people, HIV/AIDS/STIs and sexuality in South Africa: The gap between awareness and behaviour. *Acta Paediatrica*, 93, 264-269.
- James, W. H. & Rotter, J. B. (1958). Partial and 100% reinforcement under chance and skill conditions. *Journal of Experimental Psychology*, 55, 397-403.
- James, L. M., & Taylor, J. (2008). Associations between symptoms of borderline personality externalisation disorders and suicide-related behaviours. *Journal of Psychopathology, and Behavioural Assessment*, 30, 1-9.
- Jang, S. J., & Lyons, J. A. (2006). Strain, social support, and retreatism among African Americans. *Journal of Black Studies*, 37, 251-274.
- Jeeves, A., & Jolly, A. (2009). Sexually transmitted infection and public health in South Africa: Educational campaigns for prevention 1935-1948 and 1999-2008. *Social Theory and Health*, 7, 264-283.
- Jemmott, J. B., Jemmott, L. S., & Fong, G. T. (1998). Abstinence and safer sex HIV risk-reduction interventions for African-American adolescents: A randomised controlled trial. *JAMA*, 20, 1529-1536.
- Jenkinson, C. (2009). The psychological wellbeing of patients with rheumatoid arthritis. *British Journal of Anesthetic and Recovery Nursing*, 10, 47-50.
- Jerome, R. C., Halkitis, P. N., & Siconolfi, D. E. (2009). Club drug use, sexual behaviour and HIV seroconversion: A qualitative study of motivations. *Substance Use and Misuse*, 44, 431-447.
- Jerusalem, M. (2009). Mental health promotion in schools by strengthening self-efficacy. *Health Education*, 109, 329-341.
- Jerusalem, M., & Hessling, J. K. (2009). Mental health promotion in schools by strengthening self-efficacy. *Health Education*, 109, 329-341.

- Jessor, R., Carman, R. S., Grossman, P. H. (1968). Expectations of need satisfaction and drinking patterns of college students. *The Quarterly Journal of Studies in Alcohol*, 29, 101-116.
- Jewkes, R. (2002). Preventing sexual violence: A rights-based approach. *The Lancet*, 360, 1092-1093.
- Jewkes, R., & Abrahams, N. (2002). The epidemiology of rape and sexual coercion in South Africa: An overview. *Social Sciences and Medicine*, 55, 153-166.
- Jewkes, R. K., Levin, J. B., & Penn-Kekana, L. A. (2003). Gender inequalities, intimate partner violence, and HIV preventive practice: Findings of a South African cross-sectional study. *Social Science and Medicine*, 56, 125-134.
- Jewkes, R. Nduna, M. Levin, J. Jama, N. Dunkle, K. Khuzwayo, N. Koss, M. Puren, A. Wood, K. Duvvury, N. (2006). A cluster randomized-controlled trial to determine the effectiveness of Stepping Stones in preventing HIV infections and promoting safer sexual behaviour amongst youth in the rural Eastern Cape, South Africa: trial design, methods and baseline findings. *Tropical Medicine and International Medicine*, 11, 3-16.
- Jewkes, R., Vundule, C., Mofarah, F., & Jordaan, E. (2001). Relationship dynamics and teenage pregnancy in South Africa. *Social Science and Medicine*, 52, 733-744.
- Johansen, E. B., Killeen, P. R., Russel, V. A., Tripp, G., Wickens, J. R., Tannock, R., Williams, J., & Sagvolden, T. (2009). Origins of altered reinforcement effects in ADHD. *Behavioural and Brain Functions*, 5, 7-7.
- Johnson, D. (2007). Building citizenship in fragmented societies: The challenges of deracialising and integrating schools in post-Apartheid South Africa. *International Journal of Educational Development*, 27, 306-317.
- Johnson, F. (1973). *Alienation, concept, term, and meanings*. New York: Seminar Press.

- Johnson, R. C., Ackerman, J.M., Frank, H, & Fionda, A. J. (1968). Resistance to temptation and guilt following yielding and psychotherapy. *Journal of Consulting and Clinical Psychology*, 32, 169-175.
- Johnson, C. D., & Gormly, J. (1972). Academic cheating: The contribution of sex, personality, and situational variables. *Developmental Psychology*, 6, 320-325.
- Johnson, S. L., Ruggero, C. J., & Carver, C. S. (2005). Cognitive, behavioural, and affective response to reward: Links with hypomanic symptoms. *Journal of Social and Clinical Psychology*, 24, 894-906.
- Johnson, B. T., Scott-Sheldon, L. A. J., Smoak, N. D., LaCroix, J. M., Anderson, J. R., & Carey, M. (2009). Behavioural interventions for African-American to reduce sexual risk of HIV: A meta-analysis of randomised controlled study. *JAIDS*, 51, 492-501.
- Joireman, S. F. (2008). The mystery of capital formation in Sub-Saharan Africa: Women, property rights, and customary law. *World Development*, 36, 1233-1246.
- Jolley, M. T., & Spielberger, C. D. (1973). The effects of locus of control and anxiety on verbal conditioning. *Journal of Personality*, 41, 443-456.
- Jones, E. (2008). Predicting performance in first-semester college basic writers: Revisiting the role of self-beliefs. *Contemporary Educational Psychology*, 33, 209-238.
- Jones, F. E. (2008). Structural determinants of consensus and cohesion in complex organisations. *Canadian Review of Sociology*, 5, 219-240.
- Jones, D. C., & Newman, J. B. (2009). Early adolescent adjustment and critical evaluations by self and other: The prospective impact of body image dissatisfaction and peer appearance teasing on global self-esteem. *European Journal of Developmental Science*, 3, 17-26.

- Jones, G., & Swain, A. (1995). Predispositions to experience debilitating and facilitative anxiety in elite and non-elite performers. *Sport Psychologist*, 9, 201-211.
- Jones, D. S., Tshimanga, M., Woelk, G., Nsubunga, P., Sunderland, N. L., Hader, S. L., & St Louis, E. (2009). Increasing leadership capacity for HIV/AIDS programmes by strengthening public health epidemiology and management training in Zimbabwe. *Human Resources for Health*, 7, 69-69.
- Josephs, L. L., & Abel, E. M. (2009). Investigating the relationship between intimate partner violence and HIV/AIDS propensity in Black African-American women. *Journal of Family Violence*, 24, 221-229.
- Judge, T. A. & Bono, J. E. (2001). The relationship of core self-evaluations, traits, self-esteem, generalised self-efficacy, locus of control and emotional stability with job satisfaction and job performance. *Journal of Applied Psychology*, 86, 80-92.
- Julian, J. W., & Katz, S. B. (1968). Internal versus external control and the value of reinforcement. *Journal of Personality and Social Psychology*, 76, 43-48.
- Jung, C. G. (1923). *Psychological Types*. New York: Harcourt, Brace & Co.
- Kahler, C. W., Daughters, S. B., Leventhal, A. M., Rogers, M. L., Clark, M. A., Colby, S. M., Boergers, J., Ramsey, S. E., Abrams, D. B., Niaura, R., & Buka, S. L. (2009). Personality, psychiatric disorders, and smoking in middle-aged adults. *Nicotine and Tobacco Research*, 11, 833-841.
- Kahn, J. S., Aulakh, V., & Bosworth, A. (2009). What it takes: Characteristics of the ideal personal health record. *Health Affairs*, 28, 369-376.
- Kale, R. (1995). South Africa's health: Traditional healers in South Africa: a parallel health care system. *British Medical Journal*, 10, 1182-1185.
- Kalenscher, T., Ohmann, T., & Gunturkun, O. (2006). The neuroscience of impulsive and self-controlled decisions. *International Journal of Psychophysiology*, 62, 203-211.

- Kalichman, S. C. (2000). HIV transmission risk behaviours of men and women living with HIV and AIDS: Prevalence, predictors and emerging clinical interventions. *Clinical Psychology: Science and Practice*, 7, 32-47.
- Kalichman, S. C., Sikkema, K. J., DiFonzo, K., & Luke, W. (2002). Emotional adjustment in survivors of sexual assault living with HIV-AIDS. *Journal of Traumatic Stress*, 15, 289-296.
- Kalichman, S. C., & Simbayi, L. C. (2003). HIV testing attitudes, AIDS stigma and voluntary HIV counselling and testing in a black township in Cape Town, South Africa. *Sexually Transmitted Infections*, 79, 442-447.
- Kalichman, S. C., & Simbayi, L. (2004). Traditional beliefs about the cause of AIDS and AIDS- related stigma in South Africa. *AIDS Care*, 16, 572-580.
- Kalichman, S. C., & Simbayi, L. C. (2009). Positive prevention: HIV risk reduction for people living with HIV/AIDS. In P. Rohleder, L. Swartz, S. C. Kalichman, & L. C. Simbayi (Eds.), *HIV/AIDS in South Africa 25 years on: Psychosocial Perspectives* (pp. 273-286). New York: Springer.
- Kalichman, S. C., Simbayi, L. C., Cain, D., & Jooste, S. (2008). Perceived HIV/AIDS prevalence, burden and risk, Cape Town, South Africa. *American Journal of Health Behaviour*, 32, 693-700.
- Kalichman, S. C., Simbayi, L. C., Cain, D., & Jooste, S. (2009). Heterosexual anal intercourse among community and clinical settings in Cape Town, South Africa. *Sexually Transmitted Infections*, 85, 411-415.
- Kalichman, S. C., Simbayi, L. C., Cain, D., Jooste, S., Skinner, D., & Cherry, C. (2006). Generalising a model of health behaviour change and AIDS stigma for use with sexually transmitted infection clinic patients in Cape Town, South Africa. *AIDS Care*, 18, 178-182.

- Kalichman, S. C., Simbayi, L. C., Cloete, A., Clayford, M., Anorlids, W., Mxoli, M., Smith, G., Cherry, C., Shefer, T., Crawford, M., & Kalichman, M. O. (2009). Integrated gender-based violence and HIV risk reduction intervention for South African men: Results of a quasi-experimental field trial. *Prevention Science*, 10, 260-269.
- Kalichman, S. C., Simbayi, L. C., Vermaak, R., Cain, D., Jooste, S. & Peltzer, K. (2007). HIV/AIDS risk reduction counselling for alcohol using sexually transmitted infections clinic patients in Cape Town, South Africa. *JAIDS*, 44, 594-600.
- Kalipeni, E., & Ghosh, J. (2007). Concern and practice among men about HIV/AIDS in low socioeconomic income areas in Lilongwe, Malawi. *Social Science and Medicine*, 64, 1116-1127.
- Kallmen, H., Andersson, P. & Andren, A. (2008). Are irrational beliefs and depressive mood more common among gamblers than non-gamblers?: A survey study of Swedish problem gamblers and controls. *Journal of Gambling Studies*, 24, 441-450.
- Kalvemark, S., Hoglund, A. T., Hansson, M. G., Westerholm, & Arnetz, (2004). Living with conflict-ethical dilemmas and moral distress in the health system. *Social Science and Medicine*, 58, 1075-1084.
- Kandala, N. B., Ji, C., Cappuccio, P. F., & Stones, R. W. (2008). The epidemic of HIV infection in Zambia. *AIDS Care*, 20, 812-819.
- Kapetanovic, S., Christensen, S., Karim, R., Lin, F., Mack, W. J., Operskalski, E., Federick, T., Spencer, L., Stek, A., Kramer, F., & Kovacs, A. (2009). Correlates of prenatal depression in HIV-infected women. *AIDS Patient Care and STDs*, 23, 101-108.
- Kaplan, D. S., Liu, R. X., & Kaplan, H. B. (2005). School-related stress in early adolescence and academic performance three years later. The conditional influence of self-expectations. *Social Psychology of Education*, 8, 3-17.

- Kaponda, C., Jere, J., Chimango, A., Chimwaza, A., Crittenden, K., Kachingwe, S., McCreary, L., Norr, J., & Norr, S. (2009). Impact of a peer-group intervention on HIV-related knowledge, attitudes, and personal behaviours for urban hospital workers in Malawi. *Journal of the Association of Nurses in AIDS Care*, 20, 230-242.
- Kapp, C. (2009). South Africa heads into elections in a sorry state of health. *The Lancet*, 373, 285-286.
- Karabenick, S. A., & Srull, T. K. (1978). The effect of personality and situational variation in locus of control on cheating: Determinants of the "congruence effect". *Journal of Personality*, 46, 72-95.
- Katerndahl, D. Parchman, M., & Wood, R. (2009). Perceived complexity of care, perceived autonomy, and career satisfaction among primary care physicians. *The Journal of American Board of Family Medicine* 22, 24-33.
- Katkovsky, W., Crandall, V. C., & Good, S. (1967). Parental antecedents of children's beliefs in internal-external control of reinforcement in intellectual achievement situations. *Child Development*, 38, 765-776.
- Katz, I., & Low-Ber, D. (2008). Why has HIV stabilised in South Africa, yet not declined further? Age and sexual behaviour patterns among the youth. *Sexually Transmitted Diseases*, 35, 837-842.
- Kaur, J., & Upmanyu, V. V. (2007). A study of locus of control in relation to grade and gender in high school children. *Journal of Mental Health and Human Behaviour*, 12, 38-42.
- Kauffman, D. F., & Husman, J. (2004). Effects of time perspective on student motivation: Introduction to a special issue. *Educational Psychology Review*, 16, 1-7.
- Kavanagh, M. B., Gruenigen, V. E., Courneya, K. S., Gibbons, H. E., Waggoner, S. E., & Lerner, E. (2009). Effects of lifestyle intervention on nutrient intake in

- overweight/obese endometrical cancer survivors. *Journal of Clinical Nutrition and metabolism*, 4, 143-147.
- Kazarian, S. S. (2005). Family functioning, cultural orientation, and psychological well-being among university students in Lebanon. *The Journal of Social Psychology*, 145, 141-154.
- Kelbessa, W. (2001). *Traditional Oromo attitudes towards the environment: An argument for environmentally sound development*. Addis Ababa: Organisation for social science research in Eastern and Southern Africa.
- Keller, P., McCarthy, K., Mosendane, T., Tellie, M., Venter, F., Noble, L., Scott, L., Stevens, W., & Van Rie, A. (2009). HIV prevalence among medical students in Johannesburg, South Africa. *South African Medical Journal*, 99, 71-71.
- Kellow, J. T., & Jones, B. D. (2008). The effect of stereotypes on the achievement gap: Reexamining the academic performance of African-African high school students. *Journal of Black Psychology*, 34, 94-120.
- Kelly, J. A. & Kalichman, S. C. (1998). The reinforcement value of unsafe sex as a predictor of condom use and continued HIV/AIDS risk behaviour among gay and bisexual men. *Health Psychology*, 17, 328-335.
- Kelly, K., & Ntlabati, P. (2002). Early adolescent sex in South Africa: HIV intervention challenges. *Social Dynamics*, 28, 42-63.
- Kelly, J. A., St Lawrence, J. S., Diaz, Y. E., Stevenson, L. Y., Hauth, A. C., Brasfield, T. L. Kalichman, S. C., Smith, J. E., & Andrew, M. E. (1991). HIV risk behaviour reduction following intervention with key opinion leaders of population: An experimental analysis. *American Journal of Public Health*, 81, 168-171.
- Kelman, H. C. & Lawrence, L. H. (1972). Assignment of responsibility in the case of Lt Calley. *Journal of Social Issues*, 28, 177-212.

- Kennett, D. J., & Keefer, K. (2006). Impact of learned resourcefulness and theories of intelligence on academic achievement of university: An integrated approach. *Educational Psychology, 26*, 411-457.
- Kennett, D. J. & Reed, M. J. (2009). Factors influencing academic success and retention following a 1st year post secondary course. *Educational Research and Evaluation, 15*, 153-166.
- Keppel, G. & Wickens, T. D. (2004). *Design and analysis: A researcher` handbook*. New Jersey: Pearson.
- Kerr, N. L., Rumble, A. C., Park, E. S., Ouwerkerk, J. W., Parks, C. D., Gallucci, M., & Van Lange, P. A. M. (2009). `` How many bad apples does it take to spoil the whole barrel? ``: Social exclusion and toleration of for bad apples. *Journal of Experimental Social Psychology, 45*, 603-613.
- Khawaja, N. G., & Dempsey, J. (2008). A comparison of international and domestic tertiary students in Australia. *Australian Journal of Guidance and Counselling, 18*, 30-46.
- Kim, S. W. & Choi, C. J. (2007). Habits, self-control, and social conventions: The role of global media and corporations. *Journal of Business Ethics, 76*, 147-154.
- Kim, H. S., & Kim, H. S. (2005). Gender differences in delinquent behaviour among Korean adolescents. *Child Psychiatry and Human Development, 35*, 325-345
- Kim, K., Ryu, E., Chon, M., Yeun, E., Choi, S., Seo, J., & Nam, B. (2006). Internet addiction in Korean adolescents and its relation to depression and suicide ideation: A questionnaire survey. *International Journal of Nursing Studies, 43*, 185-192.
- Kinderman, P. (2009). Understanding and addressing psychological and social problems: The mediating psychological process model. *International Journal of Social Psychiatry, 55*, 464-470.

- Kirby, K. N., Winston, G. C., & Santiesteban, M. (2005). Impatience and grades: Delay discount rates correlation negatively with college GPA. *Learning and Individual Differences*, 15, 213-222.
- Kirchner, M. J. (2003). *The relationship between locus of control and academic achievement among at risk students*. Unpublished MA thesis, University of Pretoria, South Africa.
- Kirkeby, B. S., & Robinson, M. D. (2005). Impulse behaviour and stimulus-response variability in choice reaction time. *Journal of Research in Personality*, 39, 263-277.
- Kistner, J.A., David, C.F., & White, B.A. (2003). Ethnic and sex differences in children's depressive symptoms: Mediating effects of perceived and actual competence. *Journal of Clinical Child & Adolescent Psychology*, 32, 341-351.
- Klein, H. (2009). Sexual orientation, drug use preferences during sex and high risk practices and preferences among men who specifically seek unprotected sex partners via the internet. *International Journal of Environmental Research and Public Health*, 6, 1620-1635.
- Kline, R. B. (2005). *Principles and Practice of Structural Equations Modeling* (2nd Ed.). NY: Guilford Press.
- Knight, L., & Maharaj, P. (2009). Use of public and private health services in KwaZulu-Natal, South Africa. *Development Southern Africa*, 26, 17-28.
- Kochavi, A. J. (2006). Israel and the international legal arena. *Journal of Israeli History*, 25, 223-244.
- Koehler, N., & Chisholm, J. S. (2009). Lack of condom use at first sex by men linked to early psychosocial stress. *Journal of Social, Evolutionary and Cultural Psychology*, 3, 68-80.

- Koehler, G., & Skvoretz, J. (2009). Residential segregation in university housing: The mathematics of preferences. *Social Science Research*, 39, 14-24.
- Koelen, M. A., & Lindstrom, B. (2005). Making healthy choices easy choices: The role of empowerment. *European Journal of Clinical Nutrition*, 59, 10-16.
- Koen, C., Cele, M., & Libhaber, A. (2006). Student activism and student exclusions in South Africa. *International Journal of Educational Development*, 26, 404-414.
- Koenig, R. (2006). South Africa bolsters HIV/AIDS plan but obstacles remain. *Science*, 314, 1378-1379.
- Koh, J. B. K., & Wang, Q. I. (2009). Father, mother, and me: Parental value orientations and child self-identity in Asian-American immigrants. *Sex Roles*, 60, 600-610.
- Komduur, R. H., Korthals, M., & Molder, H. (2009). The good life: Living for health and a life without risks?: On a prominent script of nutrigenomics. *British Journal of Nutrition*, 101, 307-316.
- Kon, Z. R., & Lackan, N. (2008). Ethnic disparities in access to care in post-Apartheid South Africa. *American Journal of Public Health*, 98, 2272-2277.
- Kopp, M. A. (2005). Anomie pressure and deviant behaviour: A pilot study. *Sociological Quarterly*, 1, 226-228.
- Koster, E. H. W., Fox, E., & MacLeod, C. (2009). Introduction to the special selection on cognitive bias modification in emotional disorders. *Journal of Abnormal Psychology*, 118, 1-4.
- Kouli, O., & Papaioannou, A. G. (2009). Ethnic/cultural identity salience, achievement goals, and motivational climate in multicultural physical education classes. *Psychology of Sport and Exercise*, 10, 45-51.
- Krause, J. S., & Broderick, L. (2006). Relationship of personality and locus of control with employment outcomes among participants with spinal cord injury. *Rehabilitation Counselling Bulletin*, 49, 111-114.

- Krech, K. (1950). ``Dynamic systems, psychological fields and hypothetical constructs``. *Psychological Review*, 57, 28-290.
- Krewski, D., Lemyre, L., Turner, M. C., Lee, J. E. C., Dallaire, C., Bouchard, L., Brand, K., & Mercier, P. (2009). Public perception of population health risks in Canada: Health hazards and health outcomes. *International Journal of Risk Assessment and Management*, 11, 299-318.
- Krige, E. J. (1968). Girls` puberty songs and their relation to fertility, health, morality, and religion among the Zulu. *Africa: Journal of the International African Institute*, 38, 173-198.
- Kristjansson, A. L., Sigfusdottir, I. D., Allegrante, J. P., & Helgason, A. R. (2009). Adolescent health behaviour, contentment in school, and academic achievement. *American Journal of Health Behaviour*, 33, 69-79.
- Kritzinger, F. E., Den Boon, S., Verver, S., Enarson, D. A., Lombard, C. J., Borgdorff, M. W., Gie, R. P., & Beyers, N. (2009). No decrease in annual risk of tuberculosis infection in endemic area of Cape Town, South Africa. *Tropical Medicine and International Health*, 14, 136-142.
- Krueger, R. F., Caspi, A., Moffitt, T. E., & White, J. (1996). Delay of gratification, psychopathology, and personality: Is low self-control specific to externalising problems? *Journal of Personality*, 64, 107-129.
- Kruger, D. L., Reischl, T., & Zimmerman, M. A. (2008). Time perspective as a mechanism for functional developmental adaptation. *Journal of Social, Evolutionary, and Cultural Psychology*, 2, 1-22.
- Kumar, R. (2006). Students` experiences of home-school dissonance: The role of school academic culture and perceptions of classroom goal structures. *Contemporary Educational Psychology*, 31, 253-279.

- Kupchick, A., & Ellis, N. (2008). School discipline and security: Far for all students. *Youth and Society*, 39, 549-574.
- Kushiyaama, M., Shimazaki, Y., Murakami, M., & Yamashita, Y. (2009). Relationship between intake of green tea and periodontal disease. *Journal of Periodontology*, 80, 372-377.
- Kwak, H., Zinkhan, G. M., Delorme, D. E., & Larsen, T. (2006). Revisiting normative influence on impulsive buying behaviour and an extension to compulsive buying behaviour. *Journal of International Consumer Marketing*, 18, 57-80.
- Kyomuhendo, G. B. (2003). Low use of rural maternity services in Uganda: Impact of women`s status, traditional beliefs, and limited resources. *Reproductive Health Matters*, 11, 16-26.
- Labeau, S. O., Vandijck, D. M., Rello, J., Adam, S., Rosa, A., Wenisch, C., Backman, C., Agbaht, K., Csomos, A., Seha, M., Dimopoulos, G., Vandewoude, K., & Blot, S. I. (2009). Centre for disease control and prevention guidelines for preventing central venous catheter-related infection: Result of a knowledge test among 3405 European intensive care nurses. *Critical Care Medicine*, 37, 320-323.
- LaBrie, J. W., Kenny, S. R., Lac, A., Garcia, J. A., & Ferraiolo, P. (2009). Mental and social health impacts the use of protective behavioural strategies in reducing risky drinking and alcohol consequences. *Journal of College Student Development*, 50, 35-49.
- Laffrey, S. C., & Isenberg, M. (2003). The relationship of internal locus of control, value placed on health, perceived importance of exercise, and participation in physical activity during leisure. *International Journal of Nursing Studies*, 40, 453-459.
- Laforest, L., Hasnaoui, A. E. I., Pribil, C., Ritleng, C., Schwalm, M. S., & Van Ganse, E. (2009). Asthma, patients perception of their ability to influence disease control and management. *Annals of Allergy, Asthma, and Immunology*, 102, 378-384.

- Lam, A. G. & Barnhart, J. E. (2006). It takes two: The role of partner ethnicity and age characteristics in condom negotiations of heterosexual Chinese and Filipino American college women. *AIDS Education and Prevention*, 8, 68-80.
- Lam, S. R., Morrison, K. R., Smeesters, D. (2009). Gender, intimacy, and risky sex: A terror management account. *Personality and Social Psychology Bulletin*, 35, 1046-1056.
- Lan, G., Ma, Z., Cao, J. A., & Zhang, A. (2009). A comparison of personal values of Chinese accounting practitioners and students. *Journal of Business Ethics*, 88, 59-76.
- Lan, P. T., Lundborg, C. S., Mogren, I., Phuc, H. D., & Chuc, N. T. K. (2009). Lack of knowledge about sexually transmitted infections among women in North rural Vietnam. *BMC Infectious Diseases*, 9, 85-85.
- Lanjananda, P., & Patterson, P. G. (2009). Determinants of customer-oriented behaviour in health care context. *Journal of Service Management*, 20, 5-32.
- Lansford, J. E., Deater-Deckard, K., & Bornsstein, M. H. (Eds.) (2009). *Immigrant families in contemporary societies*. New York: Guilford Press.
- Lasane, T. P., & O'Donnell, D. A. (2005). Time orientation measurement: A conceptual approach. In A. Strathman & J. Joireman (Eds.), *Understanding behaviour in the context of time: Theory, research, and application* (pp. 11-30). New Jersey: Lawrence Erlbaum.
- Latimer, A. E., Williams-Piehot, P., Katulak., N. A., Cox, A., Mowad, L., Higgins, T. & Salovey, P. (2008). Promoting fruit and vegetable intake through messages tailored to individual differences in regulatory focus. *Annals of Behavioural Medicine*, 35, 363-369.

- Lau, S. H., & Woods, P. C. (2009). Understanding the behaviour changes in belief and attitude among experienced and inexperienced learning object users. *Computers and Education*, 52, 333-342.
- Lauren, R., Hamilton, S., Gauvreau, K., Mets, M., Hunter, D., Rahmani, B., Wu, C., & Curley, M. (2009). Preventing corneal abrasions in critically ill children receiving neuromuscular blockade: A randomised controlled trial. *Paediatric Critical Care Medicine*, 10, 171-175.
- Laverack, G. (2006). Improving health outcomes through community empowerment: A review of literature. *Journal of Health Population and Nutrition*, 24, 113-120.
- Lawton, R., Conner, M., & McEachan, R. (2009). Desire or reason: Predicting health behaviours from affective and cognitive attitudes. *Health Psychology*, 28, 56-65.
- Lazarus, R., Struthers, H., & Violari, A. (2009). Hopes, fears, knowledge, and misunderstandings: Responses of HIV positive mothers` early knowledge of the status of their baby. *Aids Care*, 21, 329-334.
- Lecky, P. (1945). *Self-consistency, a theory of personality*. New York: Island Press.
- Lecky, P., Adams, J. F., & Thorne, F. C. (1969). *Self-consistency: A theory of personality*. New York: Garden City.
- Leclerc-Madlala, S., Simbayi, L. C., & Cloete, A. (2009). The sociocultural aspects of HIV/AIDS in South Africa. In P. Rohleder, L. Swartz, S. C. Kalichman, & L. C. Simbayi (Eds.), *HIV/AIDS in South Africa 25 years on: Psychosocial Perspectives* (pp. 13-25). New York: Springer.
- Lee, J. A., & Kacen, J. J. (2008). Cultural influences on consumer satisfaction with impulsive and planned purchase decisions. *Journal of Business Research*, 61, 265- 272.
- Lee, P. L., Lan, W., Wang, C. L., & Chiu, H. Y. (2008). Helping young children to delay gratification. *Early Childhood Education Journal*, 35, 557-564.

- Lee, J. H., & Venkataraman, S. (2006). Aspirations, market offerings, and the pursuit of entrepreneurial opportunities. *Journal of Business Venturing*, 21, 107-123.
- Lefcourt, H. M. (1967). The effects of cue explication upon persons maintaining external control expectancies. *Journal of Personality and Social Psychology*, 5, 372-378.
- Lefcourt, H. M. (1972). Recent developments in the study of locus of control. In B. A. Maher (Ed.), *Progress in experimental research in personality* (pp.1-39). New York: Academic Press.
- Lefcourt, H. M. (1976). *Locus of control, current trends in theory and research*. New Jersey: Lawrence Erlbaum Associates.
- Lefcourt, H. M. (Ed.) (1981). *Research with the locus of control construct: Assessment methods*. New York: Academic Press.
- Lefcourt, H. M. (1982). *Locus of control: Current trends in theory and research*. New Jersey: Lawrence Erlbaum Associates.
- Lefcourt, H. M. (Ed.) (1983). *Research with the locus of control construct: Developments and social problems*. London: Academic Press.
- Lefcourt, H. M., & Ladwig, G. W. (1965). The American Negro: A problem in expectancies. *Journal of Personality and Social Psychology*, 1, 377-380.
- Lefcourt, H. M., Von Baeyer, C. L., Ware, E. E., & Cox, D. J. (1979). The multidimensional-multiattributinal causality scale: The development of a goal-specific locus of control scale. *Canadian Journal of Behavioural Science*, 11, 286-304.
- Legerski, E. M., Cornwall, M., & O'Neil, B. (2006). Changing locus of control: Steelworkers adjusting to forced unemployment. *Social Forces*, 84, 1521-1537.

- Lehavot, K., Walters, K. L., & Simoni, J. M. (2009). Abuse, mastery, and health among lesbian, bisexual, and two-spirit American Indian and Alaska native women. *Cultural Diversity and Ethnic Minority Psychology, 15*, 275-284.
- Leiser, D., Azar, O. H., & Hadar, L. (2008). Psychological construal of economic behaviour. *Journal of Economic Psychology, 29*, 762-776.
- Le Roux, C. A. (2008). Achievement motivation, locus of control, and individuality as predictors of participative management in the South African educational environment. *South African Journal of Industrial Psychology, 23*, 1-8.
- Lester, D. (1989). Relationship between locus of control and depression mediated by anger towards others. *Journal of Social Psychology, 129* (3) 413-414.
- Letzring, T. D., Block, J., & Funder, D. C. (2005). Ego-control and ego-resilience: Generalisation of self-report scales based on personality descriptions from acquaintances, clinicians, and the self. *Journal of Research in Personality, 39*, 395-422.
- Leung, L. (2008). Internet embeddedness: Links with online health information-seeking, expectancy value, quality of health information websites, and internet usage patterns. *Cyber Psychology and Behaviour, 11*, 565-569.
- Levenson, H. (1974). Activism, and powerful others: Distinctions with the concept of internal-external control. *Journal of Personality Assessment, 38*, 377-383.
- Levers, L. (2006). Traditional healing as indigenous knowledge: Its relevance to HIV/AIDS in Southern Africa and the implications for counsellor education. *Journal of Psychology in Africa, 1*, 87-100.
- Levine, R. J. (2005). Wet and dry sex-the impact of cultural influence in modifying vaginal function. *Sexual and Relationship Therapy, 20*, 465-474.

- Levine, A., & Crumrine, J. (1975). Women and fear of success. *The American Journal of Sociology*, 80, 964-974.
- Levin, M. M., & Robins-Browne, R. (2009). Vaccines, global health, and social equality. *Immunology and Cell Biology*, 87, 274-278.
- Levin, S., Van Laar, C., Foote, W. (2006). Ethnic segregation and perceived discrimination in college: Mutual influences and effects on social and academic life. *Journal of Applied Social Psychology*, 36, 1471-1501.
- Levy, A. G., Micco, E., Putt, M., & Armstrong, K. (2006). Value for the future and breast- cancer-preventive health behaviour. *Cancer Epidemiology Biomarkers and Prevention*, 15, 955-960.
- Lewin, K. (1935). *A dynamic theory of personality*. New York: McGraw-Hill.
- Lewin, K. (1936). *Principles of topological psychology*. New York: McGraw-Hill.
- Lewin, K. (1943). Defining the ``field at a given time``. *Psychological Review*, 50, 292-310.
- Lewin, K., Dembo, D., Festinger, L., & Sears, P. S. (2007). Level of aspiration. In J. M. Hunt (Ed.), *Personality and behaviour disorders* (pp. 333-378). New York: Ronald Press Company.
- Lewis, O. (1961). *Children of Sanchez*. New York: Random House.
- Lewis, C., & Carpendale, J. I. M. (2009). Introduction: The link between social interaction and executive function. *New Directions for Child and Adolescent Development*, 123, 1-5.
- Li, A., Varangrat, A., Wimonsate, W., Chemnasiri, T., Sithuwattanawibool, C., Phanuphak, P., Jommaroeng, R., Vermund, S., & Van Griensven, F. (2009). Sexual behaviour and risk factors for HIV infection among homosexuals and bisexuals in Thailand. *AIDS and Behaviour*, 13, 318-327.

- Li, W., Cheung, H., Chung, J., & Kwang, O. (2009). The relationship between children`s locus of control and their anticipatory anxiety. *Public Health Nursing, 26*, 153-160.
- Liang, H., Flisher, J., & Lombard, C. J. (2007). Bullying, violence, and risk behaviour in South African A school students. *Child Abuse and Neglect, 31*, 161-171.
- Liberman, N., & Foster, J. (2008). Expectancy, value, and psychological distance: A new look at goal gradients. *Social Cognition, 26*, 515-533.
- Liddell, C., Barrett, L., & Bydawell, M. (2004). Indigenous representation of illness and AIDS in Sub-Saharan Africa. *Social Science and Medicine, 60*, 691-700.
- Lilienfeld, S. O., & Landfield, K. (2008). Science and pseudoscience in law enforcement. *Criminal Justice and Behaviour, 35*, 1215-1230.
- Lipp, L., Kolstoe, R., James, W., & Randall, H. (1968). Denial of disability and internal control of reinforcement: A study using a perceptual defence paradigm. *Journal of Consulting and Clinical Psychology, 32*, 72-75.
- Lisak, D. (1994). The psychological impact of sexual abuse: Content analysis of interviews with male survivors. *Journal of Traumatic Stress, 7*, 525-548.
- Litt, M. D., Kadden, R. M., Kabela-Cormier, E., & Petry, (2008). Coping skills training and contingency management treatments for marijuana dependence: Exploring mechanisms of behaviour change. *Addiction, 103*, 638-648.
- Liu, W. & Aaker, J. (2007). Do you look to the future or focus on today? The impact of life experience on intertemporal decisions. *Organisational Behaviour and Human Decision Processes, 102*, 212-225.
- Liu, W. M., & Ali, S. R. (2005). Addressing social class and classism in vocational theory and practice. *The Counselling Psychologist, 33*, 189-196.

- Ljubotina, D., Galic, J., & Jukic, V. (2004). Prevalence and risk factors of substance use among urban adolescents: Questionnaire study. *Croatian Medical Journal*, 45, 88-98.
- Lochner, C., Hemmings, S., Seedat, S., Kinnear, C., Schoeman, R., Annerbrink, K., Olsson, M., Eriksson, E., Moolman-Smook, J., & Allgulander, C. (2007). Genetics and personality traits in patients with social anxiety disorder: A case-control study in South Africa. *European Neuropsychopharmacology*, 17, 321-327.
- Lodewyk, K. R., Winnie, P. H., & Jamieson-Noel, D. L. (2009). Implications of task structure on self-regulated learning and achievement. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 29, 1-25.
- Loewenstein, G., Rick, S., & Cohen, J. D. (2008). Neuroeconomics. *Annual Review of Psychology*, 59, 647-672.
- Loewenstein, G., Read, D., & Baumeister, R. F. (Eds.) (2003). *Time and decision: Economic and Psychological Perspectives on intertemporal choice*. New York: Russel Sage Foundation.
- Loo, C. M., & Rolison, G. (1986). Alienation of ethnic minority students at a predominantly white university. *The Journal of Higher Education*, 57, 58-77.
- Lopes, P. (2005). Signifying deviance and transgression: Jazz in the popular imagination. *American Behavioural Scientist*, 48, 1468-1481.
- Louw, D. A., & Pretorius, E. (1995). The traditional healer in a multicultural society: The South African experience. In L. L. Adler & B. R. Mukherji (Eds.), *Spirit versus scalpel: Traditional healing and modern psychotherapy* (pp. 44-57). London: Greenwood Publishing Group.
- Love, K. M. (2008). Parental attachment and psychological distress among African-American college students. *Journal of College Student Development*, 49, 31-40.

- Love, R. (2006). Religion, ideology, and conflict in Africa. *Review of African Political Economy*, 33, 619-634.
- Low, A., Lang, P. J., Smith, J. C., & Bradley, M. M. (2008). Both predator and prey: Emotional arousal in threat and reward. *Psychological Science*, 19, 865-873.
- Luban, D. (2004). A theory of crimes against humanity. *Yale Journal of International Law*, 29, 85-168.
- Lundberg, J., Bobak, M., Malyutina, S., Kristenson, M. & Phikhart, H. (2007). Adverse health effect of low levels of perceived control in Swedish and Russian community samples. *BMC Public Health*, 7, 314-314.
- Ma, Q., Ono-Kihara, M., Cong, L., Xu, G., Pan, X., Zamani, S., Ravari, S. M., Zhang, D., Homma, T., & Kihara, M. (2009). Early initiation of sexual activity: A risk factor for sexually transmitted diseases, HIV infection, and unwanted pregnancy among university students. *BMC Public Health*, 9, 111-111.
- MacDonald, A. P., & Hall, J. (1969). Perception of disability by the non-disabled. *Journal of Consulting and Clinical Psychology*, 33, 654-660.
- Macdonald, R. (2006). *Mind, religion, and health: With an appreciation of the Emmanuel movement*. New York: McMillan.
- MacDonald, A., & Worth, H. (2005). Mad and bad: HIV infection, mental illness, intellectual disability, and the law. *Sexuality Research, and Social Policy: Journal of NSRC*, 2, 51-62.
- Macduff, C. (2006). A follow-up study of professionals` perspectives on the development of family health nursing in Scotland: A questionnaire survey. *International Journal of Nursing Studies*, 43, 345-356.
- Mackenbach, J. P., Borsboom, G. J. J. M., Nusselder, W. J., Looman, C. W. N., & Schrijvers, C. T. M. (2001). Determinants of levels and changes of physical

- functioning in chronically ill persons: Results from the GLOBE Study. *Journal of Epidemiology and Community Health*, 55, 631-638.
- MacPhail, C., Pettifor, A., Moyo, W., & Rees, H. (2009). Factors associated with HIV Testing among sexually active South African youth aged 15-24 years. *AIDS Care*, 21, 456-467.
- Madu, S. N., & Peltzer, K. (2000). Risk factors and child sexual abuse among secondary school students in the Northern Province, South Africa. *Child Abuse and Neglect*, 24, 259-268.
- Maehr, M. L. (2008). Culture and achievement. *International Journal of Psychology*, 43, 917-918.
- Magaliso, Z. A. (1997). Gender and nation-building in South Africa. In L. A. West (Ed.), *Feminist Nationalism*, (pp. 130-144). London: Routledge.
- Magen, E., & Gross, J. J. (2007). Harnessing the need for immediate gratification: Cognitive reconstrual moderates the reward value of temptations. *Emotion*, 7, 415-428.
- Magwaza, A. S. & Bhana, K. (1991). Stress, locus of control and psychological status in black South African migrants. *Journal of Social Psychology*, 13 (2) 157- 164.
- Magnani, L. & Li, P. (Eds.) (2007). *Model-based reasoning in science, technology, and medicine*. London: Springer.
- Magubane, P. (1998). *Vanishing cultures of South Africa: Changing customs in a changing world*. New York: Rizzoli Publishers.
- Mahiane, S. G., Legeai, C., Taljaard, D., Latouche, A., Puren, A., Peillon, A., Bretagnolle, J., Lissouba, P., Nguema, E. P., Ndong, G. E., & Auvert, (2009). Transmission probabilities of HIV and Herpes simplex virus type 2, effect of male circumcision and interaction: A longitudinal study in a township of South Africa. *AIDS*, 23, 377-383.

- Mahrer, A. R. (1956). The role of expectancy in delayed reinforcement. *Journal of Experimental Psychology*, 52, 101-106.
- Makgoba, M. W. (2000). HIV/AIDS: The peril of pseudoscience. 5469, 1171-1172.
- Mowrer, O. H. (1950). *Learning theory and personality dynamics*. New York: Ronald Press.
- Mall, S. (2008). Attitudes towards African traditional healing practices in South Africa: Health care workers and traditional healers affiliated to antiretroviral (ARV) services. *International Journal of Infectious Diseases*, 12, 162-162.
- Mallow, R.M., Rosenberg, R., & Devieux, J. G. (2009). Cognitive-behavioural stress management interventions for ethnic-minority HIV-positive alcohol/drug abusers in resource limited and culturally diverse communities. *American Journal of Infectious Diseases*, 5, 48-59.
- Malterud, K., & Tonstad, S. (2009). Preventing obesity: Challenges and pitfalls for health promotion. *Patient Education and Counselling*, 76, 254-259.
- Maman, S., Abler, L., Parker, L., Lane, T., Chiroowodza, A., Ntogwisangu, J., Srirak, N., Modiba, P., Murima, O., & Fritz, K. (2009). A comparison of HIV stigma and discrimination in five internal sites: The influence of case and treatment resources in high prevalence settings. *Social Science and Medicine*, 68, 2271-2278.
- Manderson, L., Aagaard-Hansen, J., Allotey, P., Gyapong, M., & Sommerfeld, J. (2009). Social research on neglected diseases of poverty: Continuing and emerging themes. *PLOS Neglected Tropical Diseases*, 3, 332-332.
- Manfrin-Ledet, L., & Demetrius, J. P. (2003). The state of science: Violence and HIV infection in women. *Journal of the Association of Nurses in AIDS Care*, 14, 56-68.
- Mann, T. & Ward, A. (2007). Attention, self-control, and health behaviours. *Current Directions in Psychological Science*, 16, 280-283.

- Mannetti, L., Leder, S., Insalata, L., Pierro, A., Higgins, T., & Kruglanski, A. (2009). Priming the ant or the grasshopper in people's mind: How regulatory mode affects intertemporal choices. *European Journal of Social Psychology*, 39, 1120-1125.
- Mansyur, C. L., Amick, B. C., Harrist, R. B., Franzini, L., & Roberts, R. E. (2009). The cultural production of health inequalities: A cross-sectional, multi-level examination of 52 countries. *International Journal of Health Services*, 39, 301-319.
- Mao, R., Li, X., Stanton, B., Wang, J., Hong, Y., Zhang, H., & Chen, X. (2009). Psychosocial correlates of cigarette smoking among college students in China. *Health Education Research*, 24, 105-118.
- Mao, R., Xiaoming, L., Stanton, B., Wang, J., Hong, Y., Zhang, H., & Chen, X. (2008). Psychosocial correlates of cigarette smoking among college students in China. *Health Education Research*, 24, 105-118.
- Maravelias, C. (2009). Health promotion and flexibility: Extending and obscuring power in organisations. *British Journal of Management*, 20, 194-203.
- Margaretha, S. K. (2004). Illness is powerlessness: A phenomenological study about worthlessness, limitations and suffering. *Scandinavian Journal of Caring Sciences*, 18, 135-144.
- Marks, L. (2006). Global health crisis: Can indigenous healing practices offer a valid resource? *International Journal of Disability, Development and Education*, 53, 471-478.
- Marks, S. (2002). An epidemic waiting to happen? The spread of HIV/AIDS in South Africa in social and historical perspective. *African Studies*, 61, 13-26.
- Marmot, M. (2007). Achieving health equity: From root causes to fair outcomes. *The Lancet*, 370, 1153-1163.

- Marmot, M., Friel, S., Bell, R., Houweling, T. A. J., & Taylor, S. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. *The Lancet*, 372, 1661-1669.
- Marquez, D., Blissmer, B. J., & Prohaska, T. R. (2009). Health promotion for successful aging. *American Journal of Lifestyle Medicine*, 3, 12-19.
- Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective. *Perspectives on Psychological Science*, 1, 133-163.
- Marshall, E. C., Vujanovic, A. A., Kutz, A., Gibson, L., Leyro, T., & Zvolensky, M. J. (2009). Reasons for quitting smoking prior to a self-quit attempt among smokers with and without posttraumatic stress disorder or other anxiety/mood psychopathology. *American Journal on Addiction*, 18, 309-315.
- Martens, A., Greenberg, J., & Schimel, J. (2006). Combating stereotype threat: The effect of self-affirmation on women's intellectual performance. *Journal of Experimental Social Psychology*, 42, 236-243.
- Martijn, C., & Sharpe, L. (2006). Pathways to youth homelessness. *Social Science and Medicine*, 62, 1-12.
- Martin, J. (1993). Would Machiavelli now be a better guide for doctors than Hippocrates? *World Health Forum*, 14, 105-115.
- Martin, A. J., & Dawson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of Educational Research*, 79, 327-365.
- Martin, S., Meyer, J. A., Nelson, L., Baldwin, V., Ting, L., & Sterling, D. (2007). Locus of control, self-control and family income as predictors of young children's mathematics and science scores. *Perceptual and Motor Skills*, 104, 599-610.

- Martin, G., Richardson, A. S., Bergen, H. A., Roeger, L., & Allison, S. (2005). Perceived academic performance, self-esteem and locus of control as indicators of need for assessment of adolescent suicide risk: Implications for teachers. *Journal of Adolescence*, 28, 75-85.
- Martino-McAllister, J. M. (2004). Pulsar: A qualitative study of a substance abuse prevention programme. *Journal of Drug Education*, 34, 89-103.
- Masvaure, T. B., Terry, P. E., Adlis, S., & Mhloyi, M. (2009). When “no” means “yes”: The gender implications of HIV programming in a Zimbabwean university. Cacioppo et al., 2006; Caspi et al., 2006; Rubin et al., 2009). *Journal of the International Association of Physicians in AIDS Care*, 8, 291-298.
- Matharu, K. (2009). Using indigenous Australian drama to break cultural barriers in healthcare relationships. *British Medical Journal*, 35, 47-53.
- Mathias, C. W., Marsh-Richard, D. M., & Dougherty, D. M. (2008). Behavioural measures of impulsivity and the law. *Behavioural Sciences and the Law*, 26, 691-707.
- Mattson, M. (2005). A review of Perloff, R. M. (2003). “The dynamics of persuasion: Communication and attitudes in the 21st century (2nd ed.)”. *Journal of Health Communication*, 10, 581-588.
- Mauldin, R. K. (2008). Alienation: A laughing matter. *Humour-International Journal of Humour Research*, 21, 313-345.
- Mawson, A. R. (2004). Intentional Injury and the behavioural syndrome. *Aggression and Violent Behaviour*, 10, 375-405.
- May, T. (2001). The rights of conscience in health care. *Social Theory and Practice*, 27, 111-128.
- McAdam, E., & Mirza, K. A. H. (2009). Drugs, hopes, and dreams: Appreciative inquiry with marginalised young people using drugs and alcohol. *Journal of Family Therapy*, 31, 175-193.

- McArthur, L. A. (1970). Luck is alive and well in New Haven. *Journal of Personality and Social Psychology*, 16, 316-318.
- McClelland, D. C. (1961). *The achieving society*. New York: D. Van Nostrand.
- McClelland, D., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). *The Achievement Motive*. New York: Appleton-Century-Crofts.
- McClintock, A. (1991). "No longer in a future heaven": Women and nationalism in South Africa. *Transition*, 51, 104-123.
- McClure, S. M., Laibson, D. I., Loewenstein, G., & Cohen, J. D. (2004). Separate neural systems value immediate and delayed monetary rewards. *Science*, 306, 503-507.
- McCrae, R. R. (2009). Personality profiles of cultures: Patterns of ethos. *European Journal of Personality*, 23, 205-227.
- McCuddy, M. K., & Peery, B. L. (1996). Selected individual differences and collegians' ethical beliefs. *Journal of Business Ethics*, 15, 261-272.
- McEwan, C. (2000). Engendering citizenship: Gendered spaces of democracy in South Africa. *Political Geography*, 19, 627-651.
- McEwan, C. (2003). "Bringing government to the people": Women, local governance and community participation in South Africa. *Geoforum*, 34, 469-481.
- Mc Ghee, P. E., & Crandall, V. C. (1968). Belief in internal-external control of reinforcements and academic performance. *Child Development*, 39, 91-102.
- McGown, I. (2006). Microbicides: A new frontier in HIV prevention. *Biologicals*, 34, 241-255.
- McInerney, D. M. (2004). A discussion of future time perspective. *Educational Psychology Review*, 16, 141-151.
- McInerney, D. M., & Liem, G. A. D. (2009). Achievement motivation in a cross cultural context: Application of personal investment theory in educational settings. In A. Kaplan, S. Karabenick, & E. De Groot (Eds.), *Culture, self, and motivation:*

- Essays in honour of Martin L. Maehr* (pp. 213-241). London: Information Age Publishing.
- McIntyre, L. L., Blacher, J., & Baker, B. L. (2006). The transition to school: Adaptation in young children with and without intellectual disability. *Journal of Intellectual Disability Research*, 50, 349-361.
- McIntyre, D., & Gibson, L. (2002). Putting equity in health back onto the social policy agenda: Experience from South Africa. *Social Science and Medicine*, 54, 1637-1656.
- McIntyre, D., & Klugman, B. (2006). The human face of decentralisation and integration in health services: Experience from South Africa. *Reproductive Health Matters*, 11, 108-119.
- McGinn, C. (1989). Can we solve the mind-body problem? *Mind*, 98, 349-366.
- McIntyre, D., & Gilson, L. (2000). Redressing disadvantage: Promoting vertical equity within South Africa. *Health Care Analysis*, 8, 235-258.
- Meade, C. S., Graff, F. S., Griffin, M. L., & Weiss, R. D. (2008). HIV risk behaviour among patients with co-occurring bipolar and substance use disorders: Associations with mania and drug abuse. *Drug and Alcohol Dependence*, 92, 296-300.
- Mechner, F. (2008). Behavioural contingency analysis. *Behavioural Processes*, 78, 124-144.
- Medina, J. F., Saegert, J., & Gresham, A. (1996). Comparison of Mexican-American and Anglo-American attitudes towards money. *Journal of Consumer Affairs*, 30, 124-145.
- Medley, A., Kennedy, C., O'Reilly, K., & Sweat, M. (2009). Effectiveness of peer education interventions for HIV prevention in developing countries: A systematic review and meta-analysis. *AIDS Education and Prevention*, 21, 181-206.

- Meehan, A., Mackenzie, G., Shingadia, D., & Booy, R. (2009). Protecting children with HIV against pneumococcal disease. *The Lancet Infectious Diseases*, 9, 394-395.
- Meel, B. L. (2009). Witchcraft in Transkei region of South Africa: Case report. *African Health Sciences*, 9, 61-64.
- Meelan, A., Mackenzie, G., Shingadia, D., & Booy, R. (2009). Protecting children with HIV against pneumococcal disease. *The Lancet Infectious Diseases*, 9, 394-395.
- Mehrotra, P., Noar, S. M., Zimmerman, R. S., & Palmgreen, P. (2009). Demographic and personality factors as predictors of HIV/STD partner-specific risk: Implications for interventions. *AIDS Education and Prevention*, 21, 39-54.
- Meissner, O. (2004). Traditional healers as part of the primary health team? *South African Medical Journal*, 94, 901-902.
- Melges, F. T., & Weisz, A. E. (1971). The personal future and suicide ideation. *Journal of Nervous and Mental Disease*, 153, 244-250.
- Meschi, M., Detrenis, S., Musini, S., & Strada, E. (2006). Facts and fallacies concerning the prevention of contrast medium-induced nephropathy. *Critical Care Medicine*, 34, 2060-2068.
- Mestrovic, S. G., & Lorenzo, R. (2008). Durkheim`s concept of anomie and the abuse at Abu Ghraib. *Journal of Classical Sociology*, 8, 179-207.
- Meyer, B. (2004). Christianity in Africa: From African independent to Pentecostal-M charismatic churches. *Annual Review of Anthropology*, 33, 447-474.
- Midlarski, E. (1971). Aiding under stress: The effects of competence, dependency, visibility, and fatalism. *Journal of Personality*, 39, 132-149.
- Midlarski, E. & Midlarski, M. (1973). Some determinants of aiding under experimentally induced stress. *Journal of Personality*, 41, 305-327.

- Milberg, A., Strang, P., Jakobson, M. (2004). Next of kin` s experience of powerlessness and helplessness in palliative home care. *Supportive Care in Cancer*, 12, 120-128.
- Miller-Cribbs, J.E., Cronen, S., Davis, L., & Johnson, S.D. (2002). An exploratory analysis of factor that school engagement and completion among African American students. *Children & Schools*, 24, 159-175.
- Miller, W. R., Griboskov, C. J., & Morteli, R. L. (1981). Effectiveness of a self-control manual for problem drinkers without therapist contact. *Substance Use and Misuse*, 16, 1247-1254.
- Miller, A. G. & Minton, H. (1969). Machiavellianism, internal-external control and the violation of experimental instructions. *Psychological Record*, 19, 369-380.
- Miller, A. M., Sorokin, O., & Wang, E. (2006). Acculturation, social alienation and depressed mood in midlife women from the former Soviet Union. *Research in Nursing Health*, 29, 134-146.
- Milnes, S., Orbell, S., & Sheeran, P. (2002). Combining motivational and volitional interventions to promote exercise participation: Protection motivation theory and implementation intentions. *British Journal of Health Psychology*, 7, 163-184.
- Minkler, M. (1999). Personal responsibility for health? A review of the arguments and evidence at century`s end. *Health Education and Behaviour*, 26, 121-141.
- Mintz, E. D., & Guerrant, R. L. (2009). A lion in our village: The unconscionable tragedy of cholera in Africa. *The New England Journal of Medicine*, 360, 1060-1063.
- Miraftab, F. & Wills, S. (2005). Insurgency and spaces of active citizenship. *Journal of Planning Education and Research*, 25, 200-217).
- Mirowsky, J. & Ross, C. E. (2007). Life course trajectories of perceived control and their relationship to education. *American Journal of Sociology*, 112, 1339-1382.
- Mischel, W. (1958). Preference for delayed reinforcement: An experimental study of a cultural observation. *Journal of Abnormal and Social Psychology*, 56, 57-61.

- Mischel, W. (1961). Preference for delayed reinforcement and social responsibility. *Journal of Abnormal and Social Psychology, 62*, 1-7.
- Mischel, W. (2007). Toward a science of the individual: Past, present, and future. In Y. Shoda, D. Cervone, & G. Downey (Eds.), *Persons in context: Building a science of the individual* (pp. 263-277). New York: Guilford Press.
- Mischel, W. (2009, May). *Delay of gratification ability over time: Mechanisms and developmental implications*. Paper presented at the Association for Psychological Science, San Francisco, CA.
- Mischel, W., & Ayduk, O. (2002). Self-regulation in a cognitive-affective personality system: Attentional control in the service of the self. *Self and Identity, 1*, 113-120.
- Mischel, W., & Gilligan, C. (1964). Delay of gratification, motivation for the prohibited gratification, and responses to temptation. *Journal of Abnormal and Social Psychology, 69*, 411-417.
- Mischel, W., & Metzner, R. (1962). Preference for delayed reward as a function of age, intelligence, and length of delay interval. *Journal of Abnormal and Social Psychology, 64*, 425-431.
- Mischel, W., & Staub, E. (1965). Effects of expectancy on working and waiting for larger rewards. *Journal of Personality and Social Psychology, 5*, 625-633.
- Mischel, W., & Zeiss, R., & Zeiss, A. (1974). An internal-external control test for young children. *Journal of Personality and Social Psychology, 29*, 265-278.
- Misra, S., Harvey, R., Stokols, D., Pine, K., Fuqua, J., Shokair, S., & Whiteley, J. (2009). Evaluating an interdisciplinary undergraduate training programme, in health promotion research. *American Journal of Preventive Medicine, 36*, 358-365.
- Mitchell, J. M., Fields, H. L. D., Esposito, M., & Boettiger, C. A. (2005). Impulse responding in alcoholics. *Alcoholism: Clinical and Experimental Research, 29*, 2158-2169.

- Mittelmark, M. B. (2001). Promoting social responsibility for health: Health impact assessment and healthy public policy at the community level. *Health Promotion International*, 16, 269-274.
- Mndende, N. (1998). From underground praxis to recognised religion: Challenges facing African religions. *Journal for the Study of Religion*, 11, 115-124.
- Molde, H., Pallesen, S., Bartone, P., Hystad, S., & Johnsen, B. H. (2008). Prevalence and correlates of gambling among 16 to 19 year old adolescents in Norway. *Scandinavian Journal of Psychology*, 50, 55-64.
- Mollet, G. A., Harrison, D. W., Walters, R. P. & Foster, P. S. (2007). Asymmetry in the emotional content of lateralised multimodal hallucination following right thalamic stroke. *Cognitive Neuroscience*, 12, 422-436.
- Moore, S. C., & Foreman-Peck, J. (2009). Alcohol consumption predicts violent victimization, impulsive decision-making predicts violence. *The Open Behavioural Science Journal*, 3, 28-33.
- Morah, E. U. (2007). Are people aware of their HIV-positive status responsible for driving the epidemic in Sub-Saharan Africa? *Development Policy Review*, 25, 215-242.
- Morreli, G., Krottinger, H., & Moore, S. (1979). Neuroticism and Levenson's locus of control scale. *Psychological Reports*, 44, 153-154.
- Morris, L. V., & Finnegan, C. L. (2009). Best practices in predicting and encouraging student persistence and achievement. *Journal of College Student Retention: Research, Theory and Practice*, 10, 55-64.
- Morrison, V. & Bennett, P. (2006). *An introduction to health psychology*. NY: Pearson

- Moscarello, J. M., Ben-Shahar, O., & Ettenberg, A. (2009). Effect of food deprivation on goal-directed behaviour, spontaneous locomotion and c-Fos, immunoreactivity in the amygdale. *Behavioural and Brain, Research*, 197, 9-15.
- Mosher, D. L. (1965). Interaction of fear and guilt in inhibiting unacceptable behaviour. *Journal of Consulting Psychology*, 29, 161-167.
- Motala, S., Hoppers, W., & Pendlebury, S. (2006). Achievements and contradictions in South Africa`s pursuit of democratic education. *International Journal of Educational Development*, 26, 348-351.
- Moulding, R. & Kyrios, M. (2006). Anxiety disorders and control-related beliefs: The exemplary of obsessive-compulsive disorder (OCD). *Clinical Psychology Review*, 26, 573-583.
- Mouton, J. (2001). *How to succeed in your Master`s and Doctoral studies: A South African guide and resource book*. Pretoria: Van Schaik Publishers.
- Mouttapa, M., Weiss, J. W., & Hermann, M. (2009). Is image everything? The role of self-image in the relationship between family functioning and substance use among Hispanic adolescents. *Substance Use and Misuse*, 44, 702-721.
- Mowrer, O. H. & Viek, P. (1948). An experimental analogue of fear from a sense of helplessness. *Journal of Abnormal and Social Psychology*, 43, 193-200.
- Mpofu, E. (1994). Exploring the self-concept in an African culture. *Journal of Genetic Psychology*, 155, 341-351.
- Muller, H. P. (2000). The invention of religion: Aspects of South African case. *Social Dynamics*, 26, 56-75.
- Mullins, C. W., & Rothe, D. L. (2008). Gold, diamonds, and blood: International-state corporate crime in the Democratic Republic of Congo. *Contemporary Justice Review: Issues in Criminal, Social, and Restorative Justice*, 11, 81-99.

- Munro, S., Lewin, S., & Volmink, J. (2007). A review of health behaviour theories: How useful are these for developing interventions to promote long-term medication adherence for tuberculosis and HIV/AIDS? *BMC Public Health*, 7, 104-104.
- Muntaner, C., Benach, J., Haden, W. C., Gimeno, D., & Benavides, F. G. (2006). Continuing professional education: A glossary for the social epidemiology of work organisation: Part 2, terms from sociology of work and organisations. *Journal of Epidemiology and Community Health*, 60, 1010-1012.
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, 126, 247-259.
- Muraven, M., Baumeister, R. F., & Tice, D. M. (1999). Longitudinal improvement of self-regulation through practice: Building self-control strength through repeated exercise. *Journal of Social Psychology*, 139, 406-457.
- Murphy, G. (1947). *Personality: A biosocial approach to origins and structure*. New York: Harper and Brothers.
- Murphy, D. A., Brecht, M. L., & Huang, D. (2009). Trajectories of HIV risk behaviour from age 15 to 25 in the national longitudinal survey of youth sample. *Journal of Youth and Adolescence*, 38, 1226-1239.
- Murphy, K. M., & Topel, R. H. (2006). The value of health and longevity. *Journal of Political Economy*, 114, 871-904.
- Muyinda, H., Nakuya, J., Pool, R., & Whitworth, J. (2003). Harnessing the senga institution of adolescent sex education for the control of HIV/AIDS /STIs in rural Uganda. *AIDS Care*, 15, 159-168.
- Myer, L., Denny, L., Telerant, R., De Souza, M., Wright, T. C., & Kuhn, L. (2005). Bacterial vaginosis and susceptibility to HIV infection in South African women: A nested case-control study. *Journal of Infectious Diseases*, 192, 1372-1380.

- Myers, H. F., Sumner, L. A., Ullman, J. B., Loeb, T. B., Carmona, J. V., & Wyatt, G. E. (2009). Trauma and psychosocial prediction of substance abuse in women impacted by AIDS. *The Journal of Behavioural Health Services and Research*, 36, 233-246.
- Myerson, J., & Green, L. (1995). Discounting of delayed rewards: Models of individual choice. *Journal of Experimental Analysis of Behaviour*, 64, 263-276.
- Myles, S. M. (2004). Understanding and treating sense of loss of self following brain injury: A behaviour analytic approach. *International Journal of Psychology and Psychological Therapy*, 4, 487-504.
- Myrseth, K. O. R., Fishbach, A., & Trope, Y. (2009). Counteractive self-control: When making temptation less tempting. *Psychological Science*, 20, 159-163.
- Mzimkulu, K. G., & Simbayi, L. C. (2006). Perspectives and practices of Xhosa-speaking African traditional healers when managing psychosis. *International Journal of Disability, Development, and Education*, 53, 417-432.
- Nadelson, S. (2007). Academic misconduct by university students: Faculty perceptions and responses. *Plagiarism: Across-disciplinary Studies in Plagiarism, Fabrication, and Falsification*, 2, 1-10.
- Naditch, M. P., Gargan, M., & Michael, L. (1975). Denial, anxiety, locus of control, and the discrepancy between aspirations and achievements as components of depression. *Journal of Abnormal Psychology*, 84, 1-9.
- Naidoo, J. C., & Rajab, D. M. (2005). The dynamics of oppression: Psycho-political analysis of the traumatic experiences of minority Asian Indians in Apartheid South Africa. *Psychology and Developing Societies*, 17, 139-159.
- Nakibinge, S., Maher, D., Katende, J., Kamahi, A., Grosskurth, H., & Seeley, J. (2009). Community engagement in health research: Two decades of experience from a research project on HIV in rural Uganda. *Tropical Medicine and International Health*, 14, 190-195.

- Nasir, E. F., Astrom, A. N., David, J., & Ali, R. W. (2008). HIV and AIDS related knowledge, sources of information, and reported need for further education among dental students in Sudan: A cross-sectional study. *BMC Public Health*, 8, 286-286.
- Nasser, R., & Abouchdid, K. (2006). Locus of control and attribution for poverty: Comparing Lebanese and South African university students. *Social Behaviour and Personality*, 34, 777-796.
- National Institute of Allergy and Infectious Diseases (NIAID), (2009). *HIV Vaccine regimen demonstrates modest preventive effect in Thailand clinical trials study*. Bethesda: NIAID, US Department of Health and Human Sciences.
- Navarro, V. (2007). What is a national health policy? *International Journal of Health Sciences*, 37, 1-14.
- Nel, J. A., & Judge, M. (2008). Exploring homophobic victimisation in Gauteng, South Africa: Issues, impacts, and responses. *Acta Criminologica*, 21, 1-36.
- Nelms, L. W., & Gorski, J. (2006). The role of African traditional healers in women`s health. *Journal of Transcultural Nursing*, 17, 184-189.
- Nettler, G. (1957). A measure of alienation. *American Sociological Review*, 22, 670-677.
- Neuderth, S., Jabs, B., & Schmidtke, A. (2009). Strategies for reducing test anxiety and optimising exam preparation in German university students: A prevention-oriented pilot project of the University of Wurzburg. *Journal of Neural Transmission*, 116, 785-790.
- Newport, M. J., & Lang, T. (2009). Tropical medicine and hygiene, September 17-19, 2008, Brighton, UK. *Transactions of the Royal Society of Tropical Medicine, and Hygiene*, 103, 1075-1080.
- Ng., T. W. H., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). Predictors of objective and subjective career success: A meta-analysis. *Personnel Psychology*, 58, 367-408.

- Ng, T. W. H., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: A meta-analysis, *27*, 1057-1087.
- Ngubane, H. (1977). *Body and mind in Zulu medicine and ethnography of health and disease in Nyuswa-Zulu thought*. London: Academic Press.
- Nielson, W., & Jensen, M. (2004). Relationship between changes in coping and treatment outcomes in patients with fibromyalgia syndrome. *Pain*, *109*, 233-241.
- Niemiec, C., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom. *Theory and Research in Education*, *7*, 133-144.
- Nir, Z., & Neumann, L. (2009). Relationship among self-esteem, internal-external locus of control, and weight change after participation in a weight reduction programme. *Journal of Clinical Psychology*, *51*, 482-490.
- Noble, R. (2006). *South Africa HIV and AIDS statistics*. London: Avert.
- Nobre, P. J., & Pinto-Gouveia, J. (2006). Emotions during sexual activity: Differences between sexually functional and dysfunctional men and women. *Archives of Sexual Behaviour*, *35*, 491-499.
- Noguera, P.A. (2003). The trouble with black boys: The role and influence of environmental and cultural factors on the academic performance of African American males. *Urban Education*, *38*, 431-459.
- Nosaka, A., & Andrew, B. W. (2004). Institutionalised powerlessness in the context: The static and dynamic nature of women`s status in rural Bangladesh. *Journal of International Women Studies*, *6*, 148-167.
- Norvilitis, J. M., Merwin, M. M., Osberg, T. M., Roehling, P. V., Young, P., & Kamas, M. M. (2006). Personality factors, money attitudes, financial knowledge, and credit card debt in college students. *Journal of Applied Social Psychology*, *36*, 1395-1413.

- Nowicki, S. & Banes, J. (1973). Effect of structured camp experience on locus of control orientation. *Journal of Genetic Psychology*, 122, 247-252.
- Nowlis, S. M., Mandel, N., & McCabe, D. B. (2004). The effect of a delay between choice and consumption on consumption enjoyment. *Journal of Consumer Research*, 31, 502-510.
- Ntsebeza, L. (2006). *Democracy and compromised chiefs and the politics of land*. Pretoria: HSRC Press.
- Nweneka, C. V. (2007). Sexual practices of church youths in the area of HIV/AIDS: Playing the ostrich. *AIDS Care*, 19, 966-969.
- Nygaard, R., & Kunszenti, A. (1999). The agent-pawn construct: Basic viewpoints and preliminary scale development work. *Scandinavian Journal of Educational Research*, 43, 91-106.
- Ochieng, C. M. O. (2006). Development through positive deviance and its implications for economic policy making and public administration in Africa: The case of Kenyan agricultural development, 1930-2005.
- O`Dnohue, W., & Crouch, J. L. (2007). Marital therapy and gender-linked factors in communication. *Journal of Marital and Family Therapy*, 22, 87-101.
- O`Donnell, D. A., Schwab-Stone, M. E., & Ruchkin, V. (2006). The mediating role of alienation in the development of maladjustment in youth exposed to community violence. *Development and Psychopathology*, 18, 215-232.
- Ogden, J. (2004). *Health psychology*. New York: Open University Press.
- O`Hea, E. L., Bodenlos, J. S., Moon, S., Grothe, K. B., & Brantley, P. J. (2009). The multidimensional health locus of control: Testing the factorial structure in a sample of African-American medical patients. *Ethnicity and Disease*, 19, 192-198.

- O`Hea, E., Grothe, K. B., Bodenlos, J. S., Boudreaux, E., White, M. A., & Brantley, P. J. (2005). Predicting medical regimen adherence: The interactions of health locus of control beliefs. *Journal of Health Psychology, 10*, 705-717.
- Ohtsubo, Y., & Miller, C. E. (2008). Test of a level of aspiration model of group decision-making: A non-obvious group preference reversal due to an irrelevant alternative. *Journal of Experimental Social Psychology, 44*, 105-115.
- Oldfield, K. (2007). Humble and hopeful: Welcoming first-generation poor and working class students to college. *About Campus, 11*, 2-12.
- Oldham, J. M., Skodol, A. E., & Bender, D. S. (2009). *Essentials of Personality Disorders*. New York: American Psychiatric Association Publishing.
- O`Neil, J. M. (1981). Male sex role conflicts, sexism, and masculinity: Psychological implications for men, women, and the counselling psychologist. *The Counselling Psychologist, 9*, 61-80.
- Ong, T.H. (1994). Changes in psychological characteristics of drug abusers in a group counselling programme. *Bulletin on Narcotics, 2*, 35-47.
- Oren, A. (2008). The use of board games in child psychotherapy. *Journal of Child Psychotherapy, 34*, 364-383.
- Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *The Review of Higher Education, 30*, 363-389.
- Otto, A. M. C., Schots, P. A. M., Westerman, J. A. J. & Wesley, P. (2006). Children`s use of saving strategies: An experimental approach. *Journal of Economic Psychology, 27*, 57-73.
- Outwater, A., Abrahams, N., & Campbell, J. C. (2005). Women in South Africa: Intentional violence and HIV/AIDS: Intersections and prevention. *Journal of Black Studies, 35*, 135-154.

- Ozmen, E. (2008). The effect of locus of control on attitudes towards depression and schizophrenia. *Anadolu Journal of Psychiatry*, 9, 125-131.
- Pakenham-Walsh, N., & Bukachi, F. (2009). Information needs of health care workers in developing countries. *Human Resources for Health*, 7, 30-30.
- Pang, J. S., Villacorta, M. A., Chin, Y. S., & Morrison, F. J. (2009). Achievement motivation in the social context: Implicit and explicit hope of success and fear of failure predict memory for and liking of successful and unsuccessful peers. *Journal of Research in Personality*, 43, 1040-1052.
- Parcel, T. L., & Menaghan, E. G. (1993). Family social capital and children`s behavioural problems. *Social Psychology Quarterly*, 56, 120-135.
- Pargament, K. I., Maton, K., & Hess, R. E. (Eds.) (1992). *Religion and prevention in mental health: Research, vision, and action*. New York: The Haworth Press.
- Park, L. E., Crocker, J., & Kiefer, A. K. (2007). Contingencies of self-worth, academic failure, and goal pursuit. *Personality and Social Psychology Bulletin*, 33, 1503-1517.
- Parker, R. G., Easton, D. & Klein, C. H. (2000). Structural barriers and facilitators in HIV prevention: A review of international research. *AIDS*, 14, 22-32.
- Parker, D. & Lawton, R. (2003). Psychological contribution to the understanding of adverse events in health care. *Quality and Safety in Health Care*, 12, 453-457.
- Parkhurst, J. O. & Lush, L. (2004). The political environment of HIV: Lessons from a comparison of Uganda and South Africa. *Social Science and Medicine*, 59, 1913-1924.
- Parks, C., Becker, W. N., Chamberlain, J. M., & Crandall, J. M. (1975). Eliminating self-defeating behaviours and change in locus of control. *Journal of Psychology*, 91, 115-120.

- Parry, C. D. H., Carney, T., Petersen, P., Dewing, S., & Needle, R. (2009). HIV-risk behaviour among injecting or non-injecting drug users in Cape Town, Pretoria, and Durban. *Substance Use and Misuse*, 44, 886-904.
- Parsitau, D. M. (2009). ``Keep holy distance and abstain till he comes``: Interrogating a Pentecostal church`s engagements with HIV/AIDS and the youth in Kenya. *Africa Today*, 56, 45-64.
- Patel, C., & Trish, K. (2009). Abortion and contraception: Attitudes of South African university students. *Health Care for Women international*, 30, 550-568.
- Pearson, E. S. (1982). Women working: Fears of failure, deviance and success. *Journal of American Academy, of Psychoanalysis*, 10, 67-84.
- Pearson, S. D., & Rawlins, M. D. (2005). Quality, innovation, and value for money. *JAMA*, 294, 2618-2622.
- Peleg, G., Barak, O., Harel, Y., Rochberg, J., & Hoofien, D. (2009). Hope, dispositional optimism, and severity of depression following traumatic brain injury. *Brain Injury*, 23, 800-808.
- Peltzer, K. (2000). Health behaviour in Black South African university students. *South African Journal of Psychology*, 30, 46-49.
- Peltzer, K. (2003). Depressive symptoms in relation to alcohol and tobacco use in South African university students. *Psychological Reports*, 92, 1097-1098.
- Peltzer, K. (2005). Sexuality of black South African students in the context of HIV/AIDS. *Journal of Psychology in Africa*, 15, 17-24.
- Peltzer, K. (2009). Traditional health practitioners in South Africa. *The Lancet*, 374, 956-957.
- Peltzer, K., Friend-du-Preeze, N., & Ramlagan, S. (2008). Use of traditional, complementary and alternative medicine for HIV patients in KwaZulu-Natal. *BMC Public Health*, 8, e255-255.

- Peltzer, K., & Henda, N. (2006). Traditional birth attendants, HIV/AIDS, and safe delivery in the Eastern Cape, South Africa: Evaluation of a training programme. *South African Journal of Obstetrics and Gynaecology*, 16, 74-79.
- Peltzer, K., & Kant, X. (2009). Medical circumcision and manhood initiation rituals in the Eastern Cape, South Africa: A post intervention evaluation. *Social Aspects of HIV/AIDS and Health*, 11, 83-97.
- Peltzer, K., Kleintjes, S., Wyk, B. V., Thompson, E. A., & Mashego, T. A. B. (2008). Correlates of suicide risk among secondary school students in Cape Town. *Social Behaviour and Personality: An International Journal*, 36, 493-502.
- Peltzer, K., Malaka, D. W., & Phaswana, N. (2002). Socio-demographic factors, religiosity, academic performance, and substance use among first year university students in South Africa. *Psychological Reports*, 91, 105-113.
- Peltzer, K., Mngqundaniso, N., & Petros, G. (2006). A controlled study of a HIV/AIDS/STI/TB intervention with traditional healers in KwaZulu-Natal, South Africa. *AIDS and Behaviour*, 10, 683-690.
- Peltzer, K., Nzewi, E., & Mohan, K. (2004). Attitude towards HIV-antibody testing and people with AIDS among university students in India, South Africa and the United States. *Indian Journal of Medical Sciences*, 58, 95-108.
- Peltzer, K., Simbayi, L. C., Kalichman, S. C., Jooste, S., Cloete, A., & Mbelle, N. (2009). Drug use and HIV risk behaviour in three urban South African communities. *Journal of Social Science*, 18, 143-149.
- Perrig-Chiello, P., Jaeggi, S. M., Buschkuehl, M., Stahelin, H. B., & Perrig, W. J. (2009). Personality and health in middle age as predictors of wellbeing and health in old age. *European Journal of Aging*, 6, 27-37.
- Peters, R. J., Tortolero, S. R., Johnson, R. J., Addy, R. C., Markham, C. M., Escobar-Chaves, S. L., Lewis, H., & Yacoubian, G. S. (2005). The relationship between

future orientation and street substance abuse among Texas alternative school students. *American Journal of Addiction*, 14, 478-485.

Petersen, I., Bhana, A., Campbell-Hall, V., Mjadu, S., Lund, C., Kleintjies, S., Hosegood, V., & Flisher, A. J. (2009). Planning for district mental health services in South Africa: A situational analysis of a rural district site. *Health Policy and Planning*, 24, 140-150.

Petersen, I., Bhana, A., & McKay, M. (2005). Sexual violence and the youth in South Africa: The need for community-based prevention interventions. *Child Abuse and Neglect*, 29, 1233-1248.

Petersen, I., Low, J., & Dumont, K. (2009). Adjustment to university and academic performance among disadvantaged students in South Africa. *Educational Psychology*, 29, 99-115.

Petros, G., Airhihenhuwa, C. O., Simbayi, L., Ramlagan, L., & Brown, B. (2006). HIV and "othering" in South Africa: The blame goes on. *Culture, Health, and Sexuality*, 8, 67-77.

Petry, N. M., & Casarella, T. (1999). Excessive discounting of delayed rewards in substance abusers with gambling problems. *Drug and Alcohol Dependence*, 56, 25-32.

Pettifor, A. E., Rees, H.V., Steffenson, A., Hlongwa-Madikizela, L., MacPhail, C., Vermaak, K., & Kleinschmidt, I., (2004). *HIV and sexual behaviour among young South Africans. A national survey of 15-24 year olds*. Johannesburg: Reproductive Health Research Unit, University of the Witwatersrand.

Pettifor, A. E., O'Brien, K., MacPhail, C., Miller, C., & Rees, H. (2009). Early coital debut and associated HIV risk factors among young women and men in South Africa. *International Perspectives on Sexual and Reproductive Health*, 35, 74-82.

Pettifor, A. E., Rees, H. V., Kleinschmidt, I., Steffenson, A. E., MacPhail, C., Hlongwa-Madikizela, L., Vermaak, K., & Padian, N. S. (2005). Young people's sexual

- health in South Africa: HIV prevalence and sexual behaviours from a nationally representative household survey. *AIDS*, 19, 1525-1534.
- Pettifor, A., Van Der Straten, A., Dunbar, M. S., Shiboski, S. C., & Padian, N. S. (2004). Early age of first sex: A risk factor for HIV infection among women in Zimbabwe. *AIDS*, 18, 1435-1442.
- Phares, E. J. (1957). Expectancy changes in skill and chance situations. *Journal of Abnormal and Social Psychology*, 54, 339-342.
- Phares, E. J. (1964). Delay as a variable in expectancy changes. *The Journal of Psychology*, 57, 391-402.
- Phares, E. J. (1968). Differential utilisation of information as a function of internal-external control. *Journal of Personality*, 36, 649-662.
- Phares, E. J. (1971). Internal-external control and the reduction of reinforcement value after failure. *Journal of Consulting and Clinical Psychology*, 37, 386-390.
- Phares, E. J. (1976). *Locus of control in personality*. Morristown: General Learning Press.
- Phares, E. J., Ritchie, D. E. & Davies, W. L. (1968). Internal-external control and reaction to threat. *Journal of Personality and Social Psychology*, 10, 402-405.
- Phares, E. J., Wilson, K. G. & Klyver, N. W. (1971). Internal-external control and the attribution of blame, under neutral and distractive conditions. *Journal of Personality and Social Psychology*, 18, 285-288.
- Phatlane, S. N. (2003). Poverty and HIV/AIDS in apartheid South Africa. *Social Identities*, 9, 73-91.
- Phillips, D. R., & Verhasselt, Y. (1994). Health and development: Retrospect and prospect. In D. R. Phillips & Y. Verhasselt (Eds.), *Health and Development* (pp.301-318). New York: Routledge.

- Pillay, S. (2004). Where do you belong? Natives, foreigners, and apartheid. *African Identities*, 2, 215-232.
- Pillay, N. S., & Collings, S. J. (2008). Racial attitudes among South African university students: A follow up after four years. *Social Behaviour and Personality*, 36, 1061-1062.
- Piot, P., Kazatchkine, M., Dybul, M., & Lob-levyt, J. (2009). AIDS: Lessons learnt and myths dispelled. *The Lancet*, 374, 260-263.
- Platt, J. J., & Eisenman, R. (1968). Internal-external control of reinforcement, time perspective, adjustment, and anxiety. *Journal of General Psychology*, 79, 121-128.
- Plichta, M. W., Vasic, N., Wolf, R., Lesch, K., Brummer, D., Jacob, C., & Fallgatter, A. (2009). Neural hyporesponsiveness and hyperresponsiveness during immediate and delayed reward processing in adult attention deficit hyperactivity disorder. *Biological Psychiatry*, 65, 7-14.
- Plunkett, H. R., & Buehner, M. J. (2007). The relation of general and specific locus of control to intertemporal monetary choice, *Personality and Individual Differences*, 42, 1233-1243.
- Poortinga, W., Dinstan, F., & Fone, D. L. (2007). Health locus of control beliefs and socio-economic differences in self-rated health. *Preventive Medicine*, 46, 374-380.
- Postman, L. (1951). ``Towards a general theory of cognition``, in J. H. Rohrer and M. Sherif (Eds.), *Social psychology at the crossroads*, pp. 242-272.
- Poter, J. & Waisberg, J. (1992). Overcoming destructive societal values in the treatment of anorexia nervosa: An intensive day treatment model. *Journal of Contemporary Psychotherapy*, 22, 77-88.
- Powell, A., & Vega, M. (1972). Correlates of adult locus of control. *Psychological Reports*, 30, 455-460.

- Poynor, C., & Haws, K. L. (2009). Lines in the sand: The role of motivated categorisation in the pursuit of self-control goals. *Journal of Consumer Research*, 35, 777-787.
- Poyrazli, S., & Lopez, M. D. (2007). An exploratory study of perceived discrimination and homesickness: A comparison of international students and American students. *The Journal of Psychology: Interdisciplinary and Applied*, 141, 263-280.
- Preece, J. (2003). Education for transformative leadership in Southern Africa. *Journal of Transformative Education*, 1, 245-263.
- Prendiville, P. W., Saunders, J., & Fitzsimmons, J. (2009). The information seeking behaviour paediatricians accessing web-based resources. *Archives of Diseases in Childhood*, 94, 633-635.
- Pribram, K. (1967). Emotion: Steps towards a neurophysiological theory. In D. C. Glass (Ed.), *Neurophysiology and emotion*. New York: The Rockefeller University Press and Russel Sage Foundation.
- Pritchard, C. (1995). *Suicide - the ultimate rejection? A psycho-social study*. Buckingham: Open University Press.
- Pronyk, R. M., Makhubele, M. B., Hargreaves, J. R., Tollman, & Hausler, H. P. (2001). Assessing health-seeking behaviour among tuberculosis patients in rural South Africa. *The International Journal of Tuberculosis and Lung Disease*, 5, 619-627.
- Pronyk, P. M., Hargreaves, J. R., Kim, J. C., Morison, L. A., & Phetla, G. (2006). Effect of structural intervention for the prevention of intimate partner violence and HIV in rural South Africa: A cluster randomised trial. *The Lancet*, 368, 1973-1983.
- Puckree, T., Mkhize, M., Mgobhozi, Z., & Lin, (2002). African traditional healers: What health care professionals need to know. *International Journal of Rehabilitation Research*, 25, 247-252.
- Qin, D. B. (2008). `` Our child does not talk to us anymore``: Alienation in immigrant Chinese families. *Anthropology and Education*, 37, 162-179.

- Quarton, G. C. (1967). Deliberate efforts to control human behaviour and modify personality. *Daedalus*, 96, 837-853.
- Quayle, E., Vaughan, M., & Taylor, M. (2005). Sex offenders, internet child abuse images and emotional avoidance: The importance of personal values. *Aggression and Violent Behaviour*, 11, 1-11.
- Quellette, J. A. & Wood, W. (1998). Habit and interaction in everyday life: The multiple process by which past human behaviour predicts future behaviour. *Psychological Bulletin*, 124, 54-74.
- Quinn, T. C., & Overbaugh, J. (2005). HIV/AIDS in women: An expanding epidemic. *Science*, 308, 1582-1583.
- Rachlin, H. (1995). Self-control: Beyond commitment. *Behavioural and Brain Sciences*, 18, 109-159.
- Racz, J., Gyarmathy, V. A., & Neaigus, A. (2007). Injecting equipment sharing and perceptions of HIV/AIDS and hepatitis risk among injecting users in Budapest. *AIDS Care*, 19, 59-66.
- Radsma, J., & Bottorff, J. L. (2009). Counteracting ambivalence: Nurses who smoke and their health promotion role with patients who smoke. *Research in Nursing and Health*, 32, 443-452.
- Ragnarsson, A., Onya, H., & Aaro, L. E. (2009). Young people`s understanding of HIV: A qualitative study among school students, Mankweng, South Africa. *Scandinavian Journal of Public Health*, 37, 101-106.
- Raimy, V. C. (1948). "Self reference in counselling interviews." *Journal of Consulting Psychology*, 12, 153-163.
- Ralston, D. A., Holt, D. H., Treppstra, R. H., & Yu, K. C. (2008). The impact of national culture and economic ideology on managerial work values: A study of the United

- States, Russia, Japan, and China. *International Journal of Business Studies*, 39, 8-26.
- Ramseyer, A., Pele, M, Dufour, V., Chauvin, C., & Thierry, B. (2006). Accepting loss: The temporal limits of reciprocity in brown capuchin monkeys. *Proceedings of the Royal Society of London*, 273, 179-184.
- Randall, M. T., & Desrosiers, M. (1980). Measurement of supernatural belief: Sex differences and locus of control. *Journal of Personality Assessment*, 44, 493-498.
- Randall, V., & Svasand, L. (2002). Political parties and democratic consolidation in Africa. *Democratisation*, 9, 30-52.
- Rao, P., Pradhan, P. V., & Shah, H. (2004). Psychopathology and coping in parents of chronically ill children. *Indian Journal of Paediatrics*, 71, 695-700.
- Rauscher, E. A., & Targ, R. (2006). Investigation of a complex space-time metric to describe precognition of the future. *AIP Conference Proceedings*, 863, 121-146.
- Rawal, N. (2008). Social inclusion and exclusion: A review. *Dhaulagiri Journal of Sociology and Anthropology*, 2, 161-180.
- Raven, B. H. (1999). Kurt Lewin Address: Influence, power, religion, and the mechanism of social control. *Journal of Social Issues*, 55, 161-186.
- Ray, J. J. & Najman, J. M. (1986). The generalisability of the deferment of gratification. *Journal of Social Psychology*, 126, 117-119.
- Rayce, S. L. B., Holstein, B. E., & Kreiner, S. (2009). Aspects of alienation and symptom load among adolescents. *European Journal of Public Health*, 19, 79-84.
- Reason, R. D., Terenzini, P. T., & Domingo, R. J. (2006). First things first: Developing academic competence in the first year of college. *Research in Higher Education*, 47, 149-175.

- Rector, N. A., & Kocovski, N. L. (2006). Social anxiety and the fear of causing discomfort to others: Conceptualisation and treatment. *Journal of Social and Clinical Psychology, 25*, 906-918.
- Rees, H. (1998). The search for female-controlled methods of HIV prevention. *Agenda, 39*, 44-49.
- Regev, S., Shtub, A., & Ben-Haim, Y. (2006). Managing project risks as knowledge gaps. *Project Management Journal, 37*, 17-25.
- Reid, D., & Ware, E. E. (1973). Multidimensionality of internal-external control: Implications for past and future research. *Canadian Journal of Behavioural Science, 5*, 264-271.
- Reid, D., & Ware, E. E. (1974). Multidimensionality of internal versus external control: Addition of a third dimension and non-distinction of self versus others. *Canadian Journal of Behavioural Science, 6*, 131-142.
- Reider, B. (2006). Clairvoyance. *American Journal of Sports Medicine, 34*, 1393-1394.
- Reimanis, G. (1971). School performance, intelligence, and locus of reinforcement control scales. *Psychology in the schools, 10*, 207-211.
- Relf, M. V., Laverriere, K., Devlin, C., & Salerno, T. (2009). Ethical beliefs related to HIV and AIDS among nursing students in South Africa and the United States: A cross-sectional analysis. *International Journal of Nursing Studies, 46*, 1448-1456.
- Renn, R. W., Allen, D. G., Fedor, D. B., & Davis, W. D. (2005). The role of personality and self-defeating behaviours in self-management failure. *Journal of Management, 31*, 659-679.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin, 128*, 330-366.
- Republic of South Africa, Act No. 66 (1995). Labour Relations Act.

- Republic of South Africa, Act No. 108 (1996). Constitution Chapter 2: Bill of Rights
- Republic of South Africa, Act No. 75 (1997). Basic Conditions of Employment Act.
- Republic of South Africa, Act No. 97 (1998). Skills Development Act, 1998.
- Republic of South Africa, Act No. 55 (2006). Employment Equity Act.
- Republic of South Africa, Act No 22 (2007). *Traditional Health Practitioners Act*.
Pretoria: Government Gazette.
- Revell, A. T., Vansteenwegen, A., Nicholas, L., & Dumont, K. (2008). The association between unwanted early sexual experiences and sexual adjustment among Belgian and South African students. *Sexual and Relationship Therapy*, 23, 111-118.
- Reyes-Garcia, V., Godoy, R., Huanca, T., Leonard, W., McDade, T., Tanner, S., & Vadez, V. (2007). The origins of monetary income, inequality patience, human capital, and division of labour. *Evolution and Human Behaviour*, 28, 37-47.
- Rhodes, S. D., Hergenrather, K. C., Bloom, F. R., Leichter, J. S., & Montano, J. (2009). Outcomes from a community based, participatory lay health advisor, HIV/STD prevention for recently arrived immigrant Latino men in rural North Carolina. *AIDS Education and Prevention*, 21, 103-108.
- Rice, P. L. (1997). Giving birth in a new home: Childbirth traditions and the experience of motherhood among Hmong women from Laos. *Asian Studies Review*, 20, 133-148.
- Richie, E. & Phares, E. J. (1969). Attitude change as a function of internal-external control and communicator status. *Journal of Personality*, 37, 429-443.
- Richter, C. P. (1959). The phenomenon of unexplained sudden death in animals and man. In H. Feilfel (Ed.), *The meaning of death*. New York: McGraw-Hill.
- Richter, L. M. (1999). Parenting in poverty: Young children and their families in South Africa. In L. Edering & P. Leseman (Eds.), *Effective Early Education* (pp. 191-212). London: Routledge.

- Richter, L. M. (2003, November). *Traditional medicine and traditional healers in South Africa*. Paper presented to the Treatment Action Campaign and AIDS and Law Project, University of the Witwatersrand, Johannesburg, South Africa.
- Rickheim, P. L., Weaver, T. W., Flader, J. L., & Kendall, D. M. (2002). Assessment of group versus individual diabetes education: A randomised study. *Diabetic Care*,
- Ridge, D., Ziebland, S., Anderson, J., Williams, I., & Elford, J. (2007). Positive prevention: Contemporary issues facing HIV positive people negotiating sex in the UK. *Social Science and Medicine*, 65, 755-770.
- Riggall, R. M. (1924). General: Alfred Adler. Progress in individual psychology. *British Journal of Medical Psychology*, IV, 32.
- Rimm, E. B., & Stampfer, M. J. (2004). Diet, lifestyle and longevity-the next step? *JAMA*, 292, 1490-1492.
- Rissel, C. (1994). Empowerment: The holy grail of health promotion. *Health Promotion International*, 9, 39-47.
- Roberts, B. W., Smith, J., Jackson, J. J., & Edmonds, G. (2009). Compensatory consciousness and health in older couples. *Psychological Science*, 20, 553-559.
- Roderick, M. (2003). What's happening to the boys? Early high school experiences and school outcomes among African American male adolescents in Chicago. *Urban Education*, 38, 538-607.
- Roets, A., & Van Hiel, A. (2008). Why some hate to dilly-dally and others do not: The arousal-invoking capacity of decision-making for low- and high-scoring need for closure individuals. *Social Cognition*, 26, 333-346.
- Rogers, C. R. (1951). *Client-centred therapy, its current practice, implications, and theory*. Boston: Houghton Mifflin Company.
- Rogers, M. A. (2009). Parental involvement and children's school performance. *Canadian Journal of Psychology*, 24, 34-57.

- Rogers, M. A., Wiener, J., Marton, I., & Tannock, R. (2009). Supportive and controlling parental involvement as predictors of children`s academic achievement: Relations to children`s ADHD symptoms and parenting stress. *School Mental Health*, 1, 89-102.
- Rolison, M. R. & Scherman, A. (2002). Factors influencing adolescents` decisions to engage in risk-taking behaviour. *Adolescence*, 37, 585-586.
- Romano, J., Malcom, R. K., Garg, S., Rohan, L. C., & Kaptur, P. E. (2008). Microbicide delivery: Formulation, technology and strategies. *Current Opinion in HIV/AIDS*, 3, 558-566.
- Romanucci-Ross, L., Devos, G. A., & Tsuda, T. (2006). *Ethnic identity: Problems and prospects for the twenty-first century*. New York: Rowman Altamira.
- Rose-Ackerman, S. (2006). Altruism, ideological entrepreneurs and non-profit firms. *International Journal of Voluntary and non-profit organisations*, 8, 120-134.
- Rosen, B. C. (1969). Race, ethnicity, and the achievement syndrome. In B. C. Rosen & H. J. Crockett (Eds.), *Achievement in American society* (pp. 131-153). Cambridge: Schenkman Publishing Company.
- Rosen, B. C., Crockett, H. J., & Nunn, C. Z. (Eds.) (1969). *Achievement in American society*. Cambridge: Schenkman Publishing Company.
- Rosenbaum, M. (1980). A schedule for assessing self-control behaviours: Preliminary findings. *Behaviour Therapy*, 11, 109-121.
- Rosengard, C., Anderson, B. J., & Stein, M. D. (2006). Correlates of condom use and reasons for condom non-use among drug users. *The American Journal of Drug and Alcohol Abuse*, 32, 637-644.
- Ross, E. (2008). Traditional healing in South Africa: Ethical implications for social work. *Social Work in Health Care*, 46, 15-34.

- Ross, M. W., Kalucy, R. S., & Morton, J. E. (1983). Locus of control in obesity: Predictors of success in a jaw-wiring programme. *British Journal of Medical Psychology*, 56, 49-56.
- Ross, C. E., & Zhang, W. (2008). Education and psychological distress among older Chinese. *Journal of Ageing and Health*, 20, 273-289.
- Rossier, V., Bolognini, M., Plancherel, B., & Halfon, O. (2000). Sensation seeking: A personality trait characteristic of adolescent girls and young women with eating disorders. *European Eating Disorders Review*, 8, 245-252.
- Rotenberg, V. S. (2009). Search activity concept: Relationship between behaviour, health, and brain functions. *Activitas Nervosa Superior*, 51, 12-44.
- Rotheram-Bonus, M. J., Swendeman, D. & Flannery, D., Rice, E., Adamson, D. M., & Ingram, B. (2009). Common factors in effective HIV prevention programmes. *AIDS and Behaviour*, 13, 399-408.
- Rothmann, S. (2003). Burnout and engagement: A South African perspective. *South African Journal of Industrial Psychology*, 29, 16-25.
- Rothmann, S., & Strijdom, G. (2002). Suicide ideation in the South African police service in the North West Province. *South African Journal of Industrial Psychology*, 28, 44-48.
- Rothmann, S. & van Rensburg, P. (2002). Psychological strengths, coping and suicide ideation in the Northwest Province. *South African Journal of Industrial Psychology*, 28, 39-49.
- Rotter, J. B. (1941). *A study of the basis for individual differences in a level of aspiration situation*. Unpublished doctoral thesis, Indiana University.
- Rotter, J. B. (1954). *Social Learning and Clinical Psychology*. New York: Prentice-Hall.

- Rotter, J. B. (1955). The role of the psychological situation in determining the direction of human behaviour. In M. R. Jones, (Ed.), *Nebraska Symposium on motivation*, pp. 245-269. Lincoln: University of Nebraska Press.
- Rotter, J. B. (1966). *Generalised expectancies for internal versus external locus of control of reinforcement*. Washington: American Psychological Association.
- Rotter, J. B. (1967). A new scale for the measurement of interpersonal trust. *Journal of Personality*, 35, 651-665.
- Rotter, J. B. (1971). External control and internal control. *Psychology Today*, 5, 37-42.
- Rotter, J. B. (1971). Generalised expectancies for interpersonal trust. *American Psychologist*, 26, 443-452.
- Rotter, J. B. (1980). Trust, trustworthiness, and gullibility. *American Psychologist*, 35, 1-7.
- Rotter, J. B. (1982). *The Development and applications of social learning theory: Selected papers*. New York: Praeger.
- Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist*, 45, 489-493.
- Rotter, J. B. (1992). Some comments on the ``cognates of personal control``. *Applied and Preventive Psychology*, 1, 127-129.
- Rotter, J. B., Chance, J. E., Phares, E. J. (1972). *Applications of a social learning theory of personality*. Toronto: Holt, Rinehart & Winston.
- Rotter, J. B. & Hochreich, D. J. (1975). *Personality*. Illinois: Scott, Foresman, and Company.
- Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist*, 45, 489-493.

- Rotter, J. B., Liverant, S., & Crowne, D. P. (1961). The growth and extinction of expectancies in chance-controlled and skilled tests. *Journal of Psychology*, 52, 598-604.
- Rotter, J. B., & Mulry, R. C. (1965). Internal versus external control of reinforcement and decision time. *Journal of Personality and Social Psychology*, 2, 598-604.
- Roura, M., Busza, J., Wringe, A., Mbata, D., Urassa, M., & Zaba, B. (2009). Barriers to sustaining antiretroviral treatment in Kisesa, Tanzania: A follow-up study to understand attrition from the antiretroviral program. *AIDS Patient Care and STDs*, 23, 203-210.
- Rovai, A. P., & Wighting, M. J. (2005). Feelings of alienation and community among higher education students in a virtual classroom. *The internet and Higher Education*, 8, 97-110.
- Rowland, S. (2007). Response to Robert A. Segal's "Jung and Levy-Bruhl". *Journal of Analytical Psychology*, 52, 659-665.
- Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology*, 60, 141-171.
- Rubin, A., Gold, M., & Primack, B. (2009). Associations between depressive symptoms and sexual risk behaviour in a diverse sample of female adolescents. *Journal of Paediatric Adolescent Gynaecology*, 22, 306-312.
- Rubio, G., Jimenez, M., Rodriguez-Jimenez, R., Martinez, I., Avila, C., Ferre, F., Jimenez-Arriero, Ponce, G., & Polomo, T. (2008). The role of behavioural impulsivity in the development of alcohol dependence: A 4-year follow-up study. *Alcoholism, Clinical, and Experimental Research*, 32, 1681-1687.
- Rudy, B. J., Murphy, D. A., Harris, D. R., Muenz, L., & Ellen, J. (2009). Patient-related risks for non-adherence to antiretroviral therapy among HIV-infected youth in the

- United States: A study of prevalence and interactions. *AIDS Patient Care and STDs*, 23, 185-194.
- Rummel, A., & Feinberg, R. A. (1990). Re-evaluation or reinforcement? : A new look at cognitive evaluation theory. *Social Behaviour and Personality*, 18, 65-80.
- Russel, D. E. H. (2003). *Lives of courage: Women for a new South Africa*. New York: Basic Books.
- Russo, R. N., Miller, M. D., Haan, E., Cameron, I. D., & Crotty, M. (2008). Pain characteristics and their association with quality of life and self-concept in children with hemiplegic cerebral palsy identified from a population register. *Clinical Journal of Pain*, 24, 335-342.
- Rutter, M. (1991). Nature, nurture, and psychopathology: A new look at an old topic. *Development and Psychopathology*, 13, 125-136.
- Saez-Marti, M., & Zilibotti, F. (2008). Preferences as human capital: Rational choice theories of endogenous preferences and socioeconomic changes. *Finnish Economic Papers*, 21, 81-94.
- Salley, M. R. (2008). Life event, stress, and illness. *Malasian Journal of Medical Sciences*, 15, 9-18.
- Salmon, J., Booth, M. L., Phongsavan, P., Murphy, N., & Timperio, A. (2007). Promoting physical activity participation among children and adolescents. *Epidemiological Review*, 29, 144-159.
- Samuels, A. (2009). Carnal critiques: Promiscuity, politics, imagination, spirituality, and hypocrisy. *Psychotherapy and Politics International*, 7, 4-17.
- Sanchez-Castillo, C. P., Velasquez-Monroy, O., Lara-Esqueda, A., Berber, A., Sepulveda, J., Tapia- Conyer, R., & James, W. P. T. (2005). Diabetes and hypertension increases in a society with abdominal obesity: Results of the Mexican national health survey 2000. *Public Health Nutrition*, 8, 53-60.

- Sand L., Strang, P., & Milberg, A. (2008). Dying cancer patients' experiences of powerlessness and helplessness. *Supportive Care in Cancer*, 16, 853-862.
- Sanders-Phillips, K. (2002). Factors influencing HIV/AIDS in women of colour. *Public Health Reports*, 117, 151-156.
- Sandra, L., & Martin, S. C. (2004). Gender-based violence and HIV/AIDS: Recognising links and acting on evidence. *The Lancet*, 363, 1410-1411.
- Santucci, A. K., Silk, J. S., Shaw, D. S., Gentzler, A., Fox, N. A., & Kovacs, M. (2008). Vagal tone and temperament as predictors of emotion regulation strategies in young children. *Developmental Psychology*, 50, 205-216.
- Sargent, J. D., Gibson, J., & Heatherton, T. F. (2009). Comparing the effects of entertainment media and tobacco marketing on youth smoking. *Tobacco Control*, 18, 47-53.
- Sariola, S. (2009). Performing global HIV prevention incentives, identities, and inequality among sex workers in Chennai. *Journal of South Asian Development*, 4, 65-81.
- Sarwar, M., Bashir, M., Khan, M. N., & Khan, M. S. (2009). Study orientation of high and low academic achievers at secondary level in Pakistan. *Education Research and Review*, 4, 204-207.
- Scales, P. C., Benson, P. L., & Mannes, B. M. (2006). The contribution to adolescent wellbeing made by nonfamily adults: An examination of developmental assets of contexts and processes. *Journal of Community Psychology*, 34, 401-413.
- Schaalma, H., Aaro, L. E., Flisher, A. J., Mathews, C., Kaaya, S., Onya, H., Ragnarson, A., & Klepp, K. I. (2009). Correlates of intention to use condoms among Sub-Saharan African youth: The applicability of the theory of planned behaviour. *Scandinavian Journal of Public Health*, 37, 87-91.

- Schneider, M., Bradshaw, D., Steyn, K., Norman, R., & Lauscher, R. (2009). Poverty and noncommunicable diseases in South Africa. *Scandinavian Journal of Public Health, 37*, 176-186.
- Schneider, H. & Fassin, D. (2002). Denial and defiance: A socio-political analysis of AIDS in South Africa. *AIDS, 16*, 45-52.
- Schneider, H., Hlope, H., & van Rensburg, D. (2008). Community health workers and the response to HIV/AIDS in South Africa. Tensions and prospects. *Health Policy and Planning, 23*, 179-187.
- Schenk, K. D. (2009). Community interventions providing care and support to orphans and vulnerable children: A review of evaluation evidence. *AIDS Care, 21*, 918-942.
- Schenck-Gustafsson, K. (2009). Risk factors for cardiovascular disease in women. *Maturitas, 63*, 186-190.
- Schippers, M. C. & Van Lange, P. A. M. (2006). The psychological benefits of superstitious rituals in top sport: A study among top sports persons. *Journal of Applied Social Psychology, 36*, 2532-2553.
- Schlenker, B. R. (2008). Integrity and character: Implications of principled and expedient ethical ideologies. *Journal of Social and Clinical Psychology, 27*, 1078-1125.
- Schlichle, J., Yssel, N., & Merbler, J. (2005). Pathways to burnout: Case studies in teacher isolation and alienation. *Preventing School Failure, 50*, 35-40.
- Schloredt, K. A. & Heiman, J. R. (2003). Perceptions of sexuality as related to sexual functioning and sexual risk in women with different types of childhood abuse histories. *Journal of Traumatic Stress, 16*, 275-284.
- Schmeichel, B. J., & Vohs, K. (2009). Self-affirmation and self-control: Affirming core values counteracts ego depletion. *Journal of personality and Social Psychology, 96*, 770-782.

- Schneider, M., Bradshaw, D., Steyn, K., Norman, R., & Laubscher, R. (2009). Poverty and non-communicable diseases in Africa. *Scandinavian Journal of Public Health, 37*, 176-186.
- Schneider, H., Hlope, H., & Van Rensberg, D. (2008). Community health workers and their response to HIV/AIDS in South Africa. *Health Policy and Planning, 23*, 179-187.
- Schoeman, R., Carey, P., & Seedat, S. (2009). Trauma and posttraumatic stress disorder in South African adolescents: A case-control study of cognitive deficits. *The Journal of Nervous and Mental Disease, 197*, 244-250.
- Schwartz, J. C. (1966). Influences upon expectancy during delay. *Journal of Experimental Research in Personality, 1*, 211-220.
- Schwartzman, A. E., Serbin, L. A., Stack, D. M., Hodgins, S., & Ledingham, J. E. (2009). Likeability, aggression and social withdrawal in childhood, psychiatric status in maturity: A prospective study. *European Journal of Developmental Science, 3*, 51-63.
- Scorgie, F., Kunene, B., Smit, J. A., Manzini, N., & Chersich, M. F. (2009). In search of sexual pleasure and fidelity: Vaginal practices in KwaZulu-Natal, South Africa. *Culture, Health and Sexuality, 11*, 267-283.
- Seeling, B. J., & Rosof, L. S. (2001). Normal and psychological altruism. *Journal of American Psychoanalytic Association, 49*, 933-959.
- Seeman, M. (1959). On the meaning of alienation. *American Sociological Review, 24*, 782-791.
- Seeman, M. (1963). Alienation and social learning in a reformatory. *American Journal of Sociology, 69*, 270-284.
- Seeman, M., & Evans, J. W. (1962). Alienation and learning in a hospital setting. *American Sociological Review, 27*, 772-783.

- Seeman, M. & Lewis, S. (1995). Powerlessness, health and mortality: A longitudinal study of older men and mature women. *Social Science and Medicine*, 41, 517-525.
- Seeman, M., Seeman, A. Z., & Budros, A. (1988). Powerlessness, work, and community: A longitudinal study of alienation and alcohol use. *Journal of Health and Social Behaviour*, 29, 185-198.
- Seeyave, D. M., Coleman, S., Appugliese, D., Corwyn, R. F., Bradley, R. H., Davidson, N. S., & Kaciroti, N. (2009). Ability to delay gratification at age 4 years and risk of overweight at age 11 years. *Archives of Paediatrics and Adolescent Medicine*, 163, 303-308.
- Selikow, T. A., Ahmed, N., Flisher, A. J., Mathews, C., & Mukoma, W. (2009). I am not ``umqwayito``: A qualitative study of peer pressure and sexual risk behaviour among young adolescents in Cape Town, South Africa. *Scandinavian Journal of Public Health*, 37, 107-112.
- Semples, S. J., Zians, J., Grant, I., & Patterson, T. L. (2006). Methamphetamine use, impulsivity, and sexual risk behaviour among HIV-positive men who have sex with men. *Journal of Addictive Diseases*, 25, 105-114.
- Senler, B., & Sungur, S. (2009). Parental influence on students` self-concept, task value, beliefs, and achievement in science. *The Spanish Journal of Psychology*, 12, 106-117.
- Seth, P., Raiji, P. T., DiClemente, R. J., Wingood, G. M., & Rose, E. (2009). Psychological distress as a correlate of a biologically confirmed STI, risky sexual practices, self-efficacy and communication with male sex partners in African-American female adolescents. *Psychology, Health and Medicine*, 14, 291-300.
- Shahar, A. (2009). Self-reported driving behaviours as a function of trait anxiety. *Accident Analysis and Prevention*, 41, 241-245.

- Shain, R. N., Piper, J. M., Newton, E. R., Perdue, S. T., Ramos, R., Champion, J. D., & Guerra, F. A. (1999). A randomised, controlled trial of a behavioural intervention to prevent sexually transmitted disease among minority women. *The New England Journal of Medicine*, 340, 93-100.
- Shani, Y., Igou, E. R., & Zeelenberg, M. (2009). Different ways of looking at unpleasant truths: How construal levels influence information search. *Organisational Behaviour and Human Decision Processes*, 110, 36-44.
- Shapiro, D. (2006). Self-reproach and personality responsibility. *Psychiatry: Interpersonal and Biological Processes*, 69, 21-25.
- Sheppard, M., & Crocker, M. (2008). Locus of control, coping, and proto prevention in child and family care. *The British Journal of Social Work*, 38, 308-321.
- Sherman, M. R., Pelletier, R. J., Ryckman, R. M. (1973). Replication of the relationship between dogmatism and locus of control. *Psychological Reports*, 33, 749-750.
- Shim, S. S., Ryan, A. M., & Anderson, C. J. (2008). Achievement goals and achievement during early adolescence: Examining time-varying predictor and outcome variables in growth curve analysis. *Journal of Educational Psychology*, 100, 655-671.
- Shin, Y. J. (2006). The context of the poor, progress of the pro-poor policy: A case study on medical aid policy during Kim Dae-jung`s government (1998-2002) in the Republic of North Korea. *Health Policy*, 78, 209-223.
- Shiner, R. L. (2009). The development of personality disorders: Perspectives from normal personality development in childhood and adolescence. *Development and Psychopathology*, 21, 715-734.
- Shipe, D. (1971). Impulsivity and locus of control as predictors of achievement and adjustment in mildly retarded and borderline youth. *American Journal of Mental Deficiency*, 76, 12-22.

- Shisana, O., Hall, E. J., Maluleke, R., Chauveau, J., Schwabe, C. (2004). HIV/AIDS prevalence among South African health workers. *South African Medical Journal*, 94, 846-850.
- Shisana, O., Peltzer, K.F., Zungu-Dirwayi, N.P. & Louw, J.S. (eds). (2005b) *The health of our educators: A focus on HIV/AIDS in South African public schools, 2004/5 survey*. Cape Town: HSRC Press.
- Shisana, O., Rehle, T., Simbayi, L.C., Parker, W., Zuma, K., Bhana, A., Connolly, C., Jooste, S. & Pillay, V. (2005a) *South African national HIV prevalence, HIV incidence, behaviour and communication survey, 2005*. Cape Town: HSRC Press.
- Shisana, O., Rehle, T., Simbayi, L.C., Zuma, K., Jooste, S., Pillay-van-Wyk, V., Mbelle, N., Van Zyl, J., Parker, W., Zungu, N. P., Pezi, S., & the SABSSM III Implementation Team (2009). *South African national prevalence, incidence, behaviour and communication survey, 2008: A turning tide among teenagers?* Cape Town: HSRC Press.
- Shisana, O. & Simbayi, L. (2002). *Nelson Mandela/HSRC study of HIV/AIDS: South African national HIV prevalence, behavioural risks and mass media household survey*. Cape Town: Human Sciences Research Council.
- Shmueli, D., & Muraven, M. (2007). Depletion of self-control strength leads to increased deviance. In K. T. Froeling (Ed.), *Criminology research focus* (pp. 69-96). New York: Nova Science Publishers.
- Shobe, M. A., & Dienemann, J. (2007). Intimate partner violence in the United States: An ecological approach to prevention and treatment. *Social Policy and Society*, 7, 185-195.
- Shoho, A. R., Katims, D. S., & Wilks, D. (1997). Perceptions of alienation among students with disabilities in inclusive and resource settings. *The High School Journal*, 81, 28-36.

- Shrestha, S., Shrestha, N. K., & Deepak, S. (2009). A community assessment of poverty and disability among specific rural population groups in Nepal. *Asia Pacific Disability Rehabilitation Journal*, 20, 83-98.
- Shybut, J. (1968). Time perspective, internal versus external control, and severity of psychological disturbance. *Journal of Clinical Psychology*, 24, 312-315.
- Siahpush, M., Spittal, M., & Singh, G. K. (2008). Happiness and life satisfaction prospectively predict self-rated health, physical health, and the presence of limiting, long-term health conditions. *American Journal of Health Promotion*, 23, 18-26.
- Sidley, P. (2004). South Africa to regulated healers. *British Medical Journal*, 329, 758-758.
- Siegel, J. E. (2005). *The idea of the self*. Cambridge: Cambridge University Press.
- Silvester, J., Anderson-Gough, F.M., Anderson, N. R. & Mohamed, R. (2002). Locus of control, attributions and impression management in the selection interview. *Journal of Occupational and Organisational Psychology*, 75, 59-76.
- Simbayi, L. C., Kalichman, S. C., Jooste, S., Mathiti, V., Cain, D., & Cherry, C. (2006). HIV/AIDS risk among South African men who report sexually assaulting women. *American Journal of Health Behaviour*, 30, 158-166.
- Simeon, D., & Hwu, R. (2007). Temporal disintegration in depersonalisation disorder. *Journal of Trauma and Dissonance*, 8, 11-24.
- Singer, E. (1965). *Key concepts in psychotherapy*. New York: Random House.
- Singer, E., & Doornenbal, J. (2006). Learning morality in peer conflict: A study of school children`s narratives about being betrayed by a friend. *Childhood*, 13, 225-245.
- Singh, M. (2009). Valuing differentiation as a qualified good: The case of South African higher education. *Higher Education Policy*, 21, 245-264.

- Singh, J. A., Govender, M., & Mills, E. J. (2007). Do human rights matter to health? *The Lancet*, 370, 521-527.
- Skidmore, M., & Dede, Y. U. (2009). Role models, approaches to studying and self-efficacy in forensic and mainstream high school students: A pilot study. *Educational Psychology: An International Journal of Educational Psychology*, 29, 315-324.
- Skinner, B. F. (1971). *Beyond Freedom and dignity*. New York: Knopf.
- Skodlar, B., Tomori, M., & Parnas, J. (2008). Subjective experience and suicide ideation in schizophrenia. *Comprehensive Psychiatry*, 49, 482-488.
- Skuy, M. & Erikson, M. A. (1980). Locus of control of first-year student teachers at a South African college in relation to other variables. *Journal of Education for Teaching*, 6, 29-36.
- Sliwa, K., Wilkinson, D., Hansen, C., Ntyintyane, L., Tibazarwa, K., Becker, A., & Stewart, S. (2008). Spectrum of heart disease and risk factors in a Black urban population in South Africa (The Heart of Soweto study). *The Lancet*, 371, 915-922.
- Sloan, M. M. (2008). Emotion management and workplace status: Consequences for wellbeing. *International Journal of Work Organisation and Emotion*, 2, 236-255.
- Smedley, B. D., Myers, H. F., & Harrell, S. P. (1993). Minority status stresses and the college adjustment of ethnic minority freshmen. *Journal of Higher Education*, 64, 434-452.
- Smith, R. E. (1970). Changes in locus of control as a function of life crisis resolution. *Journal of Abnormal Psychology*, 75, 328-332.
- Smith, H. P., & Bohm, R. M. (2008). Beyond anomie: Alienation and crime. *Critical Criminology*, 16, 1-5.

- Smith, M., Calam, R., & Bolton, C. (2009). Psychological factors linked to self-reported depression symptoms in late adolescence. *Behavioural and Cognitive Psychotherapy*, 37, 73-85.
- Smith, S. R., Catellier, D. J., Conlisk, E. A., & Upchurch, G. A. (2006). Effect on health outcomes of a community-based medication therapy management programme for seniors with limited income. *American Journal of Health-System Pharmacy*, 63, 372-379.
- Smith, A. K., Davis, R. B., & Krakauer, E. L. (2007). Differences in the regulation of the patient-physician relationship among terminally ill African-American and White patients: Impact on advance care planning and treatment preferences. *Journal of General Internal Medicine*, 22, 1579-1582.
- Smith, H. K., Harper, P. R., Potts, C. N., & Thyle, A. (2009). Planning sustainable community health schemes in rural areas of developing countries. *European Journal of Operational Research*, 193, 768-777.
- Smith, N., Littlejohns, L. B., Hawe, P., & Sutherland, L. (2008). Great expectations and hard times: Developing community indicators in a Healthy Communities Initiative in Canada. *Health Promotion International*, 23, 119-126.
- Smith, C. E., Pryer, M. W., & Distefano, M. K. (1971). Internal-external control and severity of emotional impairment among psychiatric patients. *Journal of Clinical Psychology*, 27, 449-450.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology* (pp. 290-312). Washington DC: American Sociological Association.
- Solomon, M. (2006). Groupthink versus the wisdom of crowds: The social epistemology of deliberation, and dissent. *Southern Journal of Philosophy*, 44, 28-42.

- Soman, D., Ainslie, G., Frederick, S., Li, X., Lynch, J., Moreau, P., Mitchell, A., Read, D., Sawyer, A., Trope, Y., Wertenbroch, K., & Zauberman, G. (2006). *Marketing Letters*, 16, 347-360.
- Sorsdahl, K., Stein, D. J., Grimsrud, A., Seedat, S., Flisher, A. J., Williams, D. R., & Myer, L. (2009). Traditional healers in the treatment of common mental disorders in South Africa. *The Journal of Nervous and Mental Disease*, 197, 434-441.
- Southall, R. (2001). Opposition in South Africa: Issues and problems. *Democratisation*, 8, 1-24.
- Spann, M., Molock, S. D., & Barksdale, C. (2006). Suicide and African-American teenagers: Risk factors and coping mechanisms. *Life-Threatening Behaviour*, 36, 553-568.
- Spangenberg, J. J., & Orpen-Lyall, M. R. (2000). Stress and coping strategies in a sample of South African managers involved in postgraduate managerial studies. *South African Journal of Industrial Psychology*, 26, 6-10.
- Speizer, I. S., Pettifor, A., Cummings, S., MacPhail, C., & Kleinschmidt, I. (2009). Sexual violence and reproductive health outcomes among South African female youth: A contextual analysis. *American Journal of Public Health*, 425-431.
- Spence, K. W. (1944). ``The nature of theory construction in contemporary psychology``. *Psychological Review*, 51, 47-68.
- Spera, C. (2005). Avenues of the relationship among parents practices, parenting style, and adolescent school achievement. *Educational Psychology Review*, 17, 125-146.
- Sperling, M. R., Schilling, C. A., Glosser, D., Tracy, J. I., & Assadi-Pooya, A. A. (2008). Self-perception of seizure precipitants and their relationship to anxiety level, depression, and health locus of control in epilepsy. *Seizure: European Journal of Epilepsy*, 17, 302-307.

- Srole, L. (1956). Social integration and certain corollaries: An exploratory study. *American Sociological Review*, 21, 709-716.
- Srull, T. K., & Karabenick, S. A. (1975). Effects of personality-situation locus of control congruence. *Journal of Personality and Social Psychology*, 32, 617-628.
- Stadler, J. (2003). Rumour, gossip, and blame: Implications for HIV/AIDS prevention in the South African lowveld. *HIV/AIDS Education and Prevention*, 4, 357-368.
- Stadler, J., Delany, S., & Mntambo, M. (2007). Women`s perceptions and experiences of HIV prevention trials in Soweto, South Africa. *Social Science and Medicine*, 66, 189-200.
- Stanistreet, D., Watkins, F., Bromley, H., & Swami, V. (2008). Running out of time: A qualitative investigation of homeless men`s access to health services. *Journal of Social Distress and Homelessness*, 17, 190-212.
- Starfield, B., Hyde, J., Gervas, J., & Heath, I. (2008). The concept of prevention: A good idea gone astray? *Journal of Epidemiology and Community Health*, 62, 580-583.
- Steffen, P. R., Smith, T. B., Larson, M., & Butler, L. (2006). Acculturation to western society as a risk factor for high blood pressure: A meta-analytic review. *Psychosomatic Medicine*, 68, 386-397.
- Stein, D. (2009). Perpetration of gross human rights violations in South Africa: Association with psychiatric disorders. *South African Medical Journal*, 99, 390-395.
- Steinberg, L., Graham, S., O'Brien, L., Woolard, J., Cauffman, E., & Banich, M. (2009). Age differences in future orientation and delay discounting. *Child Development*, 80, 28-44.
- Steinke, G. D. (1975). *The prediction of untrustworthy behaviour and the interpersonal trust scale*. Unpublished doctoral dissertation, University of Connecticut.

- Steinmayr, R., & Spinath, B. (2009). The importance of motivation as a predictor of school achievement. *Learning and Individual Differences*, 19, 80-90.
- Stevens, M. (2004). *Company case studies: Responses of two large South African companies to HIV/AIDS in the workplace*. Johannesburg: Centre for Health Policy, University of the Witwatersrand.
- Stewart, E. B. (2008). School structure characteristics, student effort, peer associations, and parental involvement: The influence of school, and individual level factors on academic achievement. *Education and Urban Society*, 40, 179-204.
- Stewart, S. (2009). Population screening for heart disease in vulnerable populations: Lessons from the Heart of Soweto study. *Heart, Lung, and Circulation*, 18, 104-106.
- St Lawrence, J. S. (1993). African-American adolescents' knowledge, health-related attitudes, sexual behaviour, and contraceptive decision: Implications for the prevention of adolescent HIV infection. *Journal of Consulting and Clinical Psychology*, 61, 104-112.
- Straus, M. A. (1962). Deferred gratification, social class, and the achievement syndrome. *American Sociological Review*, 27, 326-335.
- Strickland, B. R. (1970). Individual differences in verbal conditioning, extinction and awareness. *Journal of Personality*, 38, 364-378.
- Strickland, B. R. (1972). Delay of gratification as a function of race of the experimenter. *Journal of Personality and Social Psychology*, 22, 108-112.
- Strickland, B. R. (1973). Delay of gratification and internal locus of control in children. *Journal of Consulting and Clinical Psychology*, 40, 338-338.
- Stroebe, W., Mensink, W., Aarts, H., Schut, H., & Kruglanski, (2008). Why dieters fail: Testing the goal conflict model of eating. *Journal of Experimental Social Psychology*, 44, 26-36.

- Stroebe, W., Papies, E. K., & Aarts, P. H. (2008). From homeostatic to hedonistic theories of eating: Self-regulating failure in food-rich environments. *Applied Psychology: An International Review*, 57, 172-193.
- Stumm, S. V., Gale, C. R., Batty, G. D., & Deary, I. J. (2009). Childhood intelligence, loss of control, and behaviour disturbance as determinants of intergenerational social mobility: British cohort study. *Intelligence*, 37, 329-340.
- Stuntz, C., & Weiss, M. R. (2009). Achievement goal orientation and motivational outcomes in youth sport: The role of social orientations. *Psychology of Sport and Exercise*, 10, 255-262.
- Suarez-Mendoza, M. J., & Zoghbi-Manrique-de-Lara, P. (2007). The impact of work alienation on organisational citizenship behaviour in the Canary Islands. *International Journal of Organisational Analysis*, 15, 56-76.
- Suhler, C. L., & Churchland, P. S. (2009). Control: Conscious and otherwise. *Trends in Cognitive Sciences*, 13, 341-347.
- Sumter, S. R., Bokhorst, C. L., Westenberg, P. M. (2008). The robustness of the factor structure of the self-restraint scale: What does self-restraint encompass? *Journal of Research in Personality*, 42, 1082-1087.
- Sun, J. (2009). How object, situation, and personality shape human attitude in learning: An activity perspective and a multilevel modelling approach. *Learning and Individual Differences*, 19, 314-319.
- Sunmola, A. M. (2004). Factors associated with consistent condom use by employees in the brewery industry in Nigeria. *Journal of social aspects of HIV and AIDS Research Alliance*, 1, 27-34.
- Supplee, L. H., Skuban, E. M., Shaw, D. S., & Prout, J. (2009). Emotion regulation strategies and later externalising behaviour among European-American and African-American children. *Development and Psychopathology*, 21, 393-415.

- Suvivuo, P., Tossavainen, K., & Kontula, O. (2008). The role of alcohol in a sexually motivated situation. *Health Education*, 108, 145-162.
- Swaminathan, H., Walker, C., & Margaret, A. (2008). *Women`s property rights, HIV and AIDS, and domestic violence: Research findings from two districts in South Africa and Uganda*. Pretoria: HSRC Press.
- Syed, J. (2008). From transgression to suppression: Implications of moral values and societal norms and emotional labour. *Gender Work and Organisation*, 15, 182-201.
- Synder, M. (2009). In the footsteps of Kurt Lewin: Practical theorising, action research, and the psychology of social action. *Journal of Social Issues*, 65, 225-245.
- Szapocznik, J., Prado, G., Burlew, A. K., Williams, R. A., & Santisteban, D. A. (2007). Drug abuse in African-American and Hispanic adolescents: Culture, development, and behaviour. *Annual Review of Clinical Psychology*, 3, 77-105.
- Szmigin, I., Griffin, C., Mistral, W., Bengry-Howell, A., Weale, L., & Hackley, C. (2008). Reframing ``binge drinking`` as calculated hedonism: Empirical evidence from the UK. *International Journal of Drug Policy*, 19, 359-366.
- Tabi, M. M., Powell, M., & Hodnicki, D. (2006). Use of traditional healers and modern medicine in Ghana. *International Nursing Review*, 53, 52-58.
- Takaki, J., & Yano, E. (2006). Possible gender differences in the relationships of self-efficacy and internal locus of control with compliance in haemodialysis. *Behavioural Medicine*, 32, 5-11.
- Tan, X., Pan, J., Zhou, D., Wang, C., & Xie, C. (2009). Knowledge, attitudes, and behaviour assessment of Chinese students: A questionnaire study. *International Journal of Environmental Research and Public Health*, 4, 248-253.
- Tang, P. C., Ash, J. S., Bates, D. W., Overhage, J. M., & Sands, D. Z. (2006). Personal health records: Definitions, benefits, and strategies for overcoming barriers to

- adoption. *Journal of the American Medical Informatics Association*, 13, 121-126.
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2008). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72, 271-324.
- Tavakoli, S., Lumley, M. A., Hajazi, A. M., Slavin-Spenny, O. M., Parris, G. P. (2009). Effects of assertiveness training and expressive writing on acculturative stress in international students: A randomised trial. *Journal of Counselling Psychology*, 56, 590-596.
- Taylor, A. F., Kuo, F. E., & Sullivan, W. C. (2002). Views of nature and self-discipline: Evidence from inner city children. *Journal of Environmental Psychology*, 22, 49-64.
- Tenkorang, E. Y., Rajulton, F., & Maticka-Tyndale, E. (2009). Perceived risks of HIV/AIDS and first sexual intercourse among youth in Cape Town, South Africa. *AIDS and Behaviour*, 13, 234-245.
- Thomas, C. M. (2007). The influence of self-concept and adherence to recommended health regimens in adults with heart failure. *Journal of Cardiovascular Nursing*, 22, 405-416.
- Thomas, J. (2002). Nutrition intervention in ethnic minority groups. *Proceedings of the Nutritional Society*, 61, 559-567.
- Thomas, S. A., & Lincoln, N. B. (2006). Factors related to depression after stroke. *British Journal of Clinical Psychology*, 45, 49-62.
- Thompson, K. M., Crosby, R. D., Wonderlich, S. A., Mitchell, J. E., Redlin, J., Demuth, G., Smyth, J., & Haseltine, B. (2003). Psychopathology and sexual trauma in childhood and adulthood. *Journal of Traumatic Stress*, 16, 35-38.

- Thorndike, E. L. (1927). The law of effect. *The American Journal of Psychology*, 39, 212-222.
- Thorndike, E. L. (1933). A proof of the law of effect. *Science, New Series*, 77, 173-175.
- Thorpe, S. A. (1991). *African traditional religions: An introduction*. Pretoria: University of South Africa.
- Tice, D. M., Baumeister, R. F., Shmueli, D., & Muraven, M. (2007). Restoring the self: Positive affect helps improve self-regulation following ego depletion. *Journal of Experimental Social Psychology*, 43, 379-384.
- Tolman, E. C. (1934). ``Theories of learning`` in F. A. Moss (Ed.), *Comparative Psychology*, pp. 367-408. New York: Prentice Hall, Inc.
- Torres, X., Collado, A., Arias, A., Peri, J., Bailles, E., Salamero, M., & Valdes, M. (2009). Pain locus of control predicts return to work among Spanish fibromyalgia patients after completion of a multidisciplinary pain programme. *General Hospital Psychiatry*, 31, 137-145.
- Trendo, M., Passera, P., Miselli, V., Bajardi, M., Borgo, E., Tomelini, M., Tomalino, M., Cavallo, F., & Porta, M. (2006). Evaluation of the locus of control in patients with type 2 diabetes after long-term management by group care. *Diabetes and Metabolism*, 32, 77-81.
- Trentacosta, C. J., & Shaw, D. S. (2009). Emotional self-regulation, peer rejection, and antisocial behaviour: Developmental associations from early childhood to early adolescence. *Journal of Applied Developmental Psychology*, 30, 356-365.
- Tseng, M. S. (1970). Locus of control as a determinant of job proficiency, employability, and training satisfaction of vocational rehabilitation clients. *Journal of Counseling Psychology*, 17, 487-491.
- Turmen, T. (2003). Gender and HIV/AIDS. *International Journal of Gynaecology and Obstetrics*, 82, 411-418.

- Turner, E. A., Chandler, M. & Heffer, R. W. (2009). The influence of parenting styles, achievement motivation, and self-efficacy in academic performance of college students. *Journal of College Student Development*, 50, 337-346.
- Twenge, J. M., Zhang, L., & Im, C. (2004). It's beyond my control: A cross-sectional temporal meta-analysis of increasing externality in locus of control, 1960-2002. *Personality and Social Psychology Review*, 8, 308-319.
- Ubbink, E. M., & Sadava, S. W. (1974). Rotter's generalised expectancies as predictors of helping behaviour. *Psychological Reports*, 35, 865-866.
- UNAIDS (2006). *Business and Labour*. Geneva: UNAIDS.
- United Nations Programme on HIV/AIDS (UNAIDS) (2000). *Collaboration with traditional healers in HIV/AIDS prevention and care in Sub-Saharan Africa: A literature review*. Geneva, Switzerland: Joint United Nations Programme on HIV/AIDS.
- United Nations Development Programme (2003). *Zimbabwe human development report: Redirecting our responses to HIV and AIDS*. Harare: Institute of development studies, University of Zimbabwe.
- USAID, (2002): *HIV/AIDS, Economic and governance in South Africa: Key issues in understanding response*. Johannesburg: Centre for AIDS, Development, Research, and Evaluation.
- Urassa, W., Moshiri, C., Chalamilla, G., Mhalu, F., & Sandstrom, E. (2008). Risky sexual practices among youth attending a sexually transmitted clinic in Dar es Salaam, Tanzania. *BMC Infectious Diseases*, 8, 159-159.
- Utsey, S. O., Hook, J. N., Fischer, N., & Belvet, B. (2008). Cultural orientation, ego, resilience, and optimism as predictors of subjective wellbeing in African-Americans. *Journal of Positive Psychology*, 3, 202-210.

- Valeda, R., Caetano, A., Michel, J. W., Lyons, B. D., & Kavanagh, M. J. (2007). The effects of training design, individual characteristics, and work environment on transfer of training. *The International Journal of Training and Development*, 11, 282-294.
- Vallejo, J. A., & Lee, J. (2009). Brown picket fences: The immigrant narrative and ``giving`` back among Mexican middle class. *Ethnicities*, 9, 5-31.
- Van der Berg, S. (2007). Apartheid enduring legacy: Inequalities in education. *Journal of African Economics*, 16, 849-880.
- Van den Putte, B., Yzer, M., Willemsen, M. C., & de Bruijn, G. J. (2009). The effects of smoking self- identity and quitting self-identity on attempts to quit smoking. *Health Psychology*, 28, 535-544.
- Van der Veen, I. & Peetsma, T. (2009). The development in self-regulated learning behaviour of first year students in the lowest level of secondary school in the Netherlands. *Learning and Individual Differences*, 19, 34-46.
- Van de Waddle, D. & Kimberly N. (Eds.) (1995). *Public spending and the poor: Theory and evidence*. Baltimore: John Hopkins University Press.
- Van Ettehoven, H. & Lucas, C. (2006). Efficacy of physiotherapy including craniocervical training programme for tension type headache: A randomised clinical trial. *Cephalalgia*, 26, 983-991.
- Van Gennep, A., Vizedom, M., & Caffee, G. L. (2004). *The rites of passage*. London: Routledge.
- Van Harreveld, F., Rutjens, B. T., Rotteveel, M., Nordgren, L. F., & Van der Pligt, (2009). Ambivalent and decisional conflict as a cause of psychological discomfort: Feeling tense before jumping off the fence. *Journal of Experimental Social Psychology*, 45, 167-173.

- Vansteenkiste, M., Lens, W., de Witte, H., & Feather, N. T. (2005). Understanding unemployed people's job search behaviour, unemployment experience, and wellness: A comparison of expectancy-value theory and self-determination theory. *British Journal of Social Psychology*, 44, 269-287.
- Van Vlierberghe, L., & Braet, C. (2007). Dysfunctional schemas and psychopathology in referred obese adolescents. *Clinical Psychology and Psychotherapy*, 14, 342-351.
- Varga, C. A. (1997). Sexual decision-making and negotiation in the midst of AIDS: Youth in KwaZulu-Natal, South Africa. *Health Transition Review*, 7, 45-68.
- Veblen, T. (1899). *The theory of the leisure class*. New York: MacMillan.
- Varga, C. A. (1997). Sexual decision-making and negotiation in the midst of AIDS: Youth in KwaZulu-Natal, South Africa. *Health Transition Review*, 7, 45-68.
- Verme, P. (2008). Happiness, freedom, and control. *Journal of Economic Behaviour and Organisation*, 71, 146-161.
- Vermund, S. H., Allen, K. L., Karim, & Q. A. (2009). HIV-prevention science at a crossroads: Advances in reducing sexual risk. *Current Opinion in HIV and AIDS*, 4, 266-273.
- Vickers, M. H., & Parris, M. A. (2007). "Your job no longer exists": Experiences of alienation to expectations resilience-A phenomenological study. *Employee Responsibilities and Rights Journal*, 19, 113-125.
- Vitaro, F., Arseneault, L., & Tremblay, R. E. (1999). Impulsivity predicts problem gambling in low SES adolescent males. *Addiction*, 94, 565-576.
- Voeks, R. A. (1996). Tropical forest healers and habitat preference. *Economic Botany*, 50, 381-400.
- Vohs, K. D., & Finkel, E. J. (Eds.) (2006). *Self and relationships: Connecting intrapersonal and interpersonal processes*. London: Guilford Press

- Von Braun, J., Teklu, T., & Webb, P. (2003). Famine in Africa-causes, responses and prevention. *South African Journal of Economic and Management Sciences*, 6, 917-919.
- Vuger-Kovacic, D., Kovacic, D., Vuge, T., & Kalenic, B. (2007). Relationship between anxiety, depression, and locus of control of patients with multiple sclerosis. *Multiple Sclerosis*, 13, 1065-1067.
- Waelder, R. (1963). Psychic determinism and the possibility of predictions. *Psycho-analytic Quarterly*, 32, 15-42.
- Waisanen, F. B. (2008). Stability, alienation, and change. *Sociological Quarterly*, 41, 18-30.
- Wakefield, M., Ruffin, R. E., Campbell, D., Roberts, L., & Wilson, D. (2008). Smoking related beliefs and behaviour among adults with asthma in a representative population sample. *Internal Medicine Journal*, 25, 12-17.
- Walker, C. (1982). *Women and resistance in South Africa*. London: Onyx Press.
- Walker, A. R. P., Walker, B. F., Manetsi, N. G., & Tsoetsi, N. G., & Segal, I. (1989). Appendicitis in Soweto, South Africa: Traditional healers and hospitalisation. *The Journal of the Royal Society for the Promotion of Health*, 109, 190-192.
- Wallerstein, N. (1992). Powerlessness, empowerment and health: Implications for health promotion programmes. *American Journal of Health Promotion*, 6, 197-205.
- Walls, R. T., & Smith, T. S. (1970). Development of preference for delayed reinforcement in disadvantaged children. *Journal of Educational Psychology*, 61, 118-123.
- Wallston, B. S. & Walston, K. A. (1978). Locus of control and health: A review of the literature. *Health Education and Behaviour*, 6, 107-117.

- Wallston, B. S., Wallston, K. A., Kaplan, G. D., & Maides, S. A. (1976). The development and validation of the health locus of control (HLC) scale. *Journal of Consulting and Clinical Psychology, 44*, 580-585.
- Walton, K. E., & Roberts, B. W. (2004). On the relationship between substance use and personality traits: Abstainers are not maladjusted. *Journal of Research in Personality, 38*, 515-535.
- Wang, X. (2009). Baccalaureate attainment and college persistence of community college transfer students at four-year institutions. *Research in Higher Education, 50*, 570-588.
- Wang, C. K. J. & Koh, K. T., & Chatzisarantis, N. (2009). An intra-individual analysis of players perceived coaching behaviours, psychological needs, and achievement goals. *International Journal of Sports Science and Coaching, 4*, 177-192.
- Ward, C. L., Flisher, A. J., Zissis, C., Muller, M. & Lombard, C. (2001). Exposure to violence and its relationship to psychopathology in adolescents. *British Medical Journal- Injury Prevention, 7*, 297-301.
- Ward, T., Hudson, S. M., & Marshall, W. L. (1995). Cognitive distortions and affective deficits in sex offenders: A cognitive deconstructionist interpretation. *Sexual Abuse: A Journal of Research and Treatment, 7*, 67-83.
- Wardle, L. D. (1993). Protecting the rights of conscience of health care providers. *Journal of Legal Medicine, 14*, 177-230.
- Warehim, R. G, & Woodson, M. (1971). Locus of control and immediate affect states. *Journal of Clinical Psychology, 27*, 443-444.
- Warikoo, N., & Carter, P. (2009). Cultural explanations for racial and ethnic stratification in academic achievement: A call for a new and improved theory. *Review of Educational Research, 79*, 366-394.

- Warner, R. (2009). Recovery from schizophrenia and the recovery model. *Current Opinion in Psychiatry*, 22, 374-380.
- Wassenaar, D. R. & Barsdorf, N. w. (2007). The ethical involvement of women in HIV vaccine trials in Africa: Discussion paper for the African vaccine programme. *Women and Health*, 45, 37-50.
- Watson, D. (1967). Relationship between locus of control and anxiety. *Journal of Personality and Social Psychology*, 6, 91-92.
- Watson, J. (2006). Scientists, activists, sue South Africa`s AIDS denialists. *Nature Medicine*, 12, 6-6.
- Watson-Jones, D., Weiss, H. A., Rusizoka, M., Baisley, K., Mugeye, K., Changalucha, J., Everett, D., Balira, R., Knight, L., & Ross, D. (2007). Risk factors for herpes simplex virus type 2 and HIV among women at high risk northwest Tanzania: Preparing for an H SV-2 intervention trial. *JAIDS*, 46, 631-642.
- Watt, M. H., Maman, S., Jacobson, M., Laiser, J., & John, M. (2009). Missed opportunity for religious organisations to support people living with HIV/AIDS: Findings from Tanzania. *AIDS Patient Care and STDs*, 23, 389-394.
- Watt, C., Watson, S., & Wilson, L. (2007). Cognitive and psychological mediators of anxiety: Evidence from a study of paranormal beliefs and perceived childhood control. *Personality and Individual Differences*, 42, 335-345.
- Webb-Johnson, G. (2002). Are schools ready for Joshua? African American culture among students identified as having behavioral/emotional disorders. *Qualitative Studies in Education*, 15, 653-671.
- Webley, P., & Nyhus, E. (2006). Parents` influence on children`s future orientation and savings. *Journal of Economic Psychology*, 27, 140-164.
- Weiner, B. (1992). *Human Motivation: Metaphors, theories and research*. London: Sage.

- Weinstein, N. D. (2007). Misleading tests of health behaviour theories. *Annals of Behavioural Medicine*, 33, 1-10.
- Weir, B. W., O'Brien, K., Bard, R. S., Casciato, C. J., Maher, J. E., Dent, C. W., Dougherty, J. A., & Stark. (2009). Reducing HIV and partner violence risk among women with criminal justice system involvement: A randomised controlled trial of two motivational interviewing-based interventions. *AIDS and Behaviour*, 13, 509-522.
- West, C. M. (2004). Black women and intimate partner violence: New directions for research. *Journal of Interpersonal Violence*, 19, 1487-1493.
- West, C. K. & Anderson, T. H. (1976). The question of preponderant causation in teacher expectancy research. *Review of Educational Research*, 46, 613-630.
- Weston, M. D., Churchyard, G. J., Mametja, D., McIntyre, J. A., & Rander, F. (2007). Business and AIDS: Sectoral challenges and opportunities. *AIDS*, 21, 85-89.
- Weyrauch, W. O. (2007). The experience of lawlessness. *New Criminal Law Review*, 10, 415-440.
- Whitaker, R. C. (2009). Self-regulation and obesity prevention: A valuable intersection between developmental psychology and paediatrics. *Archives of Paediatric and Adolescent Medicine*, 163, 386-387.
- Whitehead, D. (2006). Workplace health promotion: The role and responsibility of health care managers. *Journal of Nursing Management*, 14, 59-68.
- Wijbenga, F. H., & Van Witteloostuijn, A. (2007). Entrepreneurial locus of control of control and competitive strategies-the moderating effect of environmental dynamism. *Journal of Economic Psychology*, 28, 566-589.
- Wild, L. G., Flisher, A. J., & Lombard, C. (2004). Suicidal ideation and attempts in adolescents: Association with depression and six domains of self-esteem. *Journal of Adolescence*, 27, 611-624.

- Williams, D. R. (1998). The African-American health: The role of the social environment. *Journal of Urban Health*, 75, 300-321.
- Williams, K. D. (2007). Ostracism. *Annual Review of Psychology*, 58, 425-452.
- Williams, D. M., Anderson, E. S., & Winnett, R. A. (2008). A review of the outcome expectancy construct in physical activity research. *Annals of Behavioural Medicine*, 29, 70-79.
- Williams, P. G., & Thayer, J. F. (2009). Executive functioning and health: Introduction to the special series. *Annals of Behavioural Medicine*, 37, 101-105.
- Williams D. R. & Williams-Morns, (2000). Racism and mental health: The African-American experience. *Ethnicity and Health*, 5, 243-268.
- Wills, T. A., Murry, V. M., Brody, G. H., Gibbons, F. X., Gerrad, M., Walker, C., & Ainette, M. G. (2007). Ethnic pride and self-control related to protective and risk factors: Test of theoretical model for the strong African-American families programme. *Health Psychology*, 26, 50-59.
- Wilson, J. M., & Donnermeyer, J. F. (2006). Urbanity, rurality, and adolescent substance use. *Criminal Justice Review*, 31, 337-356.
- Witkow, M. R. (2009). Academic achievement and adolescent daily time use in the social and academic domains. *Journal of Research on adolescence*, 19, 151-172.
- Wittmann, M., & Paulus, M. P. (2008). Decision making, impulsivity, and time perception. *Trends in Cognitive Sciences*, 12, 7-12.
- Williams, K. J. (2009). Modelling the principles of community-based participatory research in a community health assessment conducted by a health foundation. *Health Promotion Practice*, 10, 67-75.
- Williams, R. M. (1969). Achievement and success as value orientations. In B. C. Rosen & H. J. Crockett (Eds.), *Achievement in American society* (pp. 13-17). Cambridge: Schenkman Publishing Company.

- Williams, C. C., Newman, P. A., Sakamoto, I., & Massaquoi, N. A. (2009). HIV prevention risks for Black women in Canada. *Social Science and Medicine*, 68, 12-20.
- Williams, J. K., Ramamurthi, H. C., Manago, C., & Harawa, N. T. (2009). Learning from successful interventions: A culturally congruent HIV risk-reduction intervention for African-American men who have sex with men and women. *American Public Health Association*, 99, 1008-1012.
- Williams, P. G., & Thayer, J. F. (2009). Executive functioning and health: Introduction to special series. *Annals of Behavioural Medicine*, 37, 101-105.
- Wilson, K., & French, C. C. (2006). The relationship between susceptibility to false memories, dissociativity, and paranormal beliefs and experiences. *Personality and Individual Differences*, 41, 1493-1502.
- Witt, L. A. (1989). Urban-Non-urban differences in social cognition: Locus of control and perception of a just world. *Journal of Social Psychology*, 129(5), 715-717
- Witte, A. S., van der Wal, D. M., & Steyn, H. C. (2008). Mystical experience in the context of healthcare. *Journal of Holistic Nursing*, 26, 84-92.
- Wittmann, M. & Paulus, M. (2008). Decision making, impulsivity, and time perception. *Trends in Cognitive Sciences*, 12, 7-12.
- Woehr, D. J., Arcinieg, L. M., & Lim, D. H. (2007). Examining work ethic across populations: A comparison of the multidimensional work ethic profile across three diverse cultures. *Educational and Psychological measurement*, 67, 154-168.
- Wojcicki, J. M., & Malala, J. (2001). Condom use, power, and HIV/AIDS risk: Sex workers bargaining for survival in Hillbrow, Joubert Park and Berea, Johannesburg. *Social Science and Medicine*, 53, 99-121.
- Wong, L. H., Rooyen, H., Modiba, P., Richter, L., Bray, G., McIntyre, J. A., Schetter, C. D., & Coates, T. (2009). Test and tell: Correlates of consequences of testing and

- disclosure of HIV status in South Africa. *Journal of Acquired Immune Deficiency Syndrome*, 50, 215-222.
- Woolverton, W. L., Myerson, J., & Green, L. (2007). Delay discounting of cocaine by Rhesus Monkeys. *Experimental and Clinical Psychopharmacology*, 15, 238-244.
- World Health Organisation (1978). *The promotion and development of traditional medicine*. Technical reports services, 666. Geneva: WHO.
- World Health Organisation (1989). *KABP inventory and findings: Report number 1*. Geneva: World Health Organisation Global Programme on AIDS, Social and Behavioural Research Unit.
- Wong, M. M., Nigg, J. T., Zucker, R. A., Puttler, L. I., Fitzgerald, H. E., Jester, J. M., Glass, J. M., & Adams, K. (2006). Behavioural control and resiliency in the onset of alcohol and illicit drug use: A prospective study from preschool to adolescence. *Child Development*, 77, 1016-1033.
- Worth, H., Patton, C., & Goldstein, D. (2005). Introduction to reckless vectors: The infecting ``other`` in HIV/AIDS law. *Sexuality Research and Social Policy*, 2, 3-14.
- Wright, T. L. & Shear, J. J. (1976). *Locus of control, interpersonal trust, expertise of diagnostician, and acceptance of personality interpretations in the Barnum effect*. Unpublished manuscript, Department of Psychology, Catholic University.
- Wulfert, E., Block, J. A., Santa Ana, E., Rodriguez, M. L., & Colman, M. (2002). Delay of gratification: Impulsive choices and problem behaviours in early and late adolescence. *Journal of Personality*, 70, 533-552.
- Yach, D., Stuckler, D., & Brownell, K. D. (2006). Epidemiologic and economic consequences of the global epidemics of obesity and diabetes. *Nature and Medicine*, 12, 62-66.

- Yamey, G., & Greenwood, R. (2004). Religious views of the ``medical`` rehabilitation model: A pilot qualitative study. *Disability and Rehabilitation*, 26, 455-462.
- Yang, L. H., Kleinman, A., Link, B. G., Phelan, J. C., Lee, S., & Good, B. (2007). Culture and stigma: Adding moral experience to stigma theory. *Social Science and Medicine*, 64, 1524-1535.
- Yilmaz, S., & Sarpkaya, P. (2009). Alienation in educational organisations and its management. *International Journal of Human Sciences*, 6, 314-333.
- Yotebieng, M., Turner, A. N., Hoke, T. H., Van Damme, K., Rasolofomanana, J. R., & Behets, F. (2009). The effect of consistent condom use on 6-month prevalence of bacterial vaginosis varies by baseline BV status. *Tropical Medicine and International Health*, 14, 480-486.
- Young, M. D., & Brewer, C. (2008). Fear and the preparation for school leaders: The role of ambiguity, anxiety, and power in meaning-making. *Educational Policy*, 22, 106-129.
- Younger, J., Marsh, K. J., & Grap, M. J. (1995). The relationship of health locus of control and cardiac rehabilitation to mastery of illness-related stress. *Journal of Advanced Nursing*, 22, 294-299.
- Yun, D., Silk, K. J., Bowman, N. D., Neuberger, L., & Atkin, C. K. (2009). Mothers` intentions to teach adolescents about breast cancer risk reduction: The influence of self-efficacy, response efficacy, and personal responsibility. *Communication Research Reports*, 26, 134-145.
- Yukselturk, E., & Bulut, S. (2007). Predictors for student success in an online course. *Educational Technology and Society*, 10, 71-83.
- Zaba, B., Isingo, R., Wringe, A., Marston, M., Slaymaker, E., & Urassa, M. (2009). Influence of timing of sexual debut and first marriage on sexual behaviour in later

- life: Findings from four survey rounds in the Kisesa cohort in Northern Tanzania. *Sexually Transmitted Infections*, 85, 20-26.
- Zaitsoff, S. L., Fehon, D. C., & Grilo, C. M. (2009). Social competence and social-emotional isolation and eating disorder psychopathology in female and male adolescent psychiatric inpatients. *International Journal of Clinical and Health Psychology*, 9, 219-228.
- Zanchetti, A., Mancia, G., Black, H. R., Oparil, S., Waeber, B., Schneider, R. E., Bakris, G. L., Messerli, F. H., Kjeldsen, S. E., & Ruilope, L. M. (2009). Facts and fallacies of blood pressure control in recent trials: Implications in the management of patients with hypertension. *Journal of Hypertension*, 27, 673-679.
- Zartman, I. W. (2000). *Traditional cures for modern conflicts: African conflict medicine*. New York: Lynne Rienner.
- Zhang, S. X. (1995). Measuring shaming in an ethnic context. *British Journal of Criminology*, 35, 248-262.
- Zhang, L., Li, X., Mao, R., Stanton, B., Zhao, Q., Wang, B., & Mathur, A. (2007). Stigmatising attitudes towards people living with HIV/AIDS among college students in China: Implications for HIV/AIDS education and prevention. *Health Education*, 108, 130-144.
- Zhou, F., Leung, K., & Bond, M. H. (2009). Social axioms and achievement across cultures: The influence of reward for application and fate control. *Learning and Individual Differences*, 19, 366-371.
- Zigler, E. (1992). Intelligence and social competence among high-risk adolescents. *Development and Psychopathology*, 4, 287-299.
- Zsolnai, A. (2002). Relationship between children`s social competence, learning motivation and school achievement. *Educational Psychology*, 22, 317-329.

- Zuma, K., Gouws, E., Williams, B., & Lurie, M. (2003). Risk factors for HIV infection among women in Carletonville, South Africa: Migration, demography, and sexually transmitted diseases. *International Journal of STD and AIDS*, 14, 814-817.
- Zytoskee, A., Strickland, B. R., & Watson, J. (1971). Delay of gratification and internal versus external control among adolescents of low socioeconomic status. *Developmental Psychology*, 4, 93-98.

APPENDICES

Appendix A: Biographical Questionnaire

Instructions:

1. This form is private and confidential.
2. Please answer all the questions.
3. Where applicable mark an X in the block provided.

SECTION A

Code:

1. Age(in complete years)

2. Gender

Male

Female

3. Marital Status:

Single

Married

Divorced

Widowed

Remarried

Co-habiting

4 Population group/Race

White

Indian

African

Coloured

5. Faculty and Year of study at Wits University

1

2

3

4

5

6

6 Nationality and Home Province

Kwa Zulu-Natal	The Eastern Cape
Mpumalanga	The Western Cape
Gauteng	The Northern Cape
Limpopo	North West
The Free State	Other

7 Home language

English

Afrikaans

Nguni

Other

languages

APPENDIX B

**LOCUS OF CONTROL-BASED TRAINING PROGRAMME FOR HIV AND
AIDS RISK REDUCTION AMONG UNIVERSITY STUDENTS**

DEVELOPED BY: CALVIN GWANDURE

DURATION OF THE TRAINING PROGRAMME: FOUR WEEKS

LENGTH OF EACH TRAINING SESSION: 2 HOURS

NUMBER OF TRAINING SESSIONS PER WEEK: 1

Week	Time	Variable	Locus of control learning points	Group Activities	Training Outcomes
1 Card 1	1 hour	1. locus of control	<p>1. The location of disease and illness in health risk reduction</p> <p>2. The internal attribution of disease risk reduction</p> <p>3. The external attribution of disease risk reduction</p> <p>4. Meaningful interaction of the individual with their meaningful environment in health risk reduction.</p>	<p>1. Focus group discussion on self-responsibility and self-protective behaviours in HIV and AIDS risk reduction</p> <p>2. Peer talk on the role of the individual in health risk reduction</p> <p>3. Role plays on externalisation of health risks and HIV and AIDS risk with locus of control modification statements such as ``What could you have done about it?`` and ``What do you want to do next about HIV and AIDS risk reduction?``</p>	<p>1. Ability to see the connection between disease and health habits of the individual</p> <p>2. Ability to assess the role of the individual in reducing health risks</p> <p>3. Ability to distinguish between internal and external factors in HIV and AIDS risk reduction</p>
1	1	2. Social	1. Goal directed	1. Peer talk on	1. Planning and

Card 1	hour	systems control	behaviour in health risk reduction 2. Mastery over the environment and social influence in health risk reduction 3. Personal effectiveness in health risk reduction 4. Group effectiveness in health risk reduction	behavioural potential for HIV and AIDS risk reduction 2. Group discussion on mastery over diseases and HIV and AIDS risk 3. Group members list down in point form how individuals and groups/communities can be effective in reducing HIV and AIDS	implementation of personal goals for HIV and AIDS risk reduction. 2. Developing expectancies for HIV and AIDS risk reduction at individual level and group level 3. Ability to influence local leaders, health authorities and government policy in HIV and AIDS risk reduction
Card 2	1 hour	Self-control	1. Personality is learned human behaviour 2. Self-control can be learned 3. Physiological needs are learned needs that can be controlled through training 4. Peer pressure	1. Group discussion on social influence and gullibility in HIV and AIDS risk reduction 2. Role plays on peer influence and HIV and AIDS risk 3. Listing down and exchanging notes on self-control techniques of	1. Ability to assess how personality is learned in various psychological situations. 2. Willingness to control undesirable impulse behaviours

			can influence risk-taking behaviours	resisting unplanned or compulsive sex	3. Applying self-control techniques in various health risk situations
2 Card 2	1 hour	Fatalism	<ol style="list-style-type: none"> 1. Behaviour takes place in space and time 2. The body and mind work together as a unity in disease prevention 3. Health-seeking behaviour reduce health risks 4. Correct health information reduces health risks 	<ol style="list-style-type: none"> 1. Discussion on extrasensory perception and its role in HIV and AIDS risk reduction 2. Discussion on the role of religion and culture in HIV and AIDS risk reduction. 3. Discussion on how to get correct and updated information on HIV and AIDS risk reduction 	<ol style="list-style-type: none"> 1. Ability to distinguish between fact and myth in HIV and AIDS risk reduction. 2. Ability to understand and control psychological and biological needs as learnt behaviours. 3. Ability to use HIV and AIDS risk reduction knowledge in a cultural or religious context.
3 Card 3	1 hour	Achievement-oriented behaviour	<ol style="list-style-type: none"> 1. Human behaviour is directional and individuals have freedom of 	<ol style="list-style-type: none"> 1. Focus group discussion on HIV and AIDS risk reduction as achievement 	<ol style="list-style-type: none"> 1. Identification of HIV and AIDS risk reduction behaviours as a

			<p>movement and freedom to make choices in a health context</p> <p>2. Human needs are learned</p> <p>3. Every individual has the behavioural potential to succeed in health risk reduction</p> <p>4. Reinforcement sustains behaviour in health risk reduction</p>	<p>behaviour</p> <p>2. Discussion on sexual needs as learnt behaviours that can be controlled and unlearned.</p> <p>3. Role plays on minimal goals and low achievement behaviours in HIV and AIDS risk reduction</p>	<p>form of health achievement.</p> <p>2. Identification of reinforcers in risk sexual behaviours.</p> <p>3. Identification of reinforcers in HIV and AIDS risk reduction behaviours</p>
3 Card 3	1 hour	Deferment of gratification	<p>1. Expectancy influences human behaviour</p> <p>2. Previous experiences influence current physiological needs</p> <p>3. Ability to delay</p>	<p>1. Discussion on social class, gender, race, age and how these variables are associated with delay of gratification</p> <p>2. Discussion on how the satisfaction of previous needs can influence risk</p>	<p>1. Ability to delay present bodily needs for future larger rewards</p> <p>2. Ability to plan for the future</p> <p>3. Ability to deal with sexually</p>

			<p>gratification has future health benefits</p> <p>4. Inability to delay gratification is associated with health risks</p>	<p>reduction behaviours in subsequent contexts.</p> <p>3. Peer talk on delay of gratification and sexual risks</p>	<p>tempting situations</p>
4 Card 4	1 hour	Personal values and expectancies	<p>1. Personal values and expectancies influence health decisions</p> <p>2. Personal ambitions can reduce health risks</p> <p>3. Career aspirations and future orientation can reduce health risks</p> <p>4. Expectancies for better health can reduce health risks</p>	<p>1. Group discussion on personal image and health promotion</p> <p>2. Group discussion on personal ambitions and HIV and AIDS risk reduction</p> <p>3. Peer talk on careers and HIV and AIDS risk</p>	<p>1. Ability to link values to health</p> <p>2. Ability to link personal success to good health</p> <p>3. Ability to see the connection between high expectancies for future career success and HIV and AIDS risk reduction behaviours to achieve the aspirations.</p>
4 Card 4	1 hour	Social alienation	<p>1. Normlessness is a health risk</p> <p>2. Lack of contact with the</p>	<p>1. Focus group discussion on the relationship between normlessness or</p>	<p>1. Demonstrating how social alienation can</p>

			<p>meaningful social environment is a health risk</p> <p>3. Powerlessness is a health risk</p> <p>4 Meaninglessness is a health risk</p>	<p>violence and HIV and AIDS risk</p> <p>2. Discussion on the relationship between social isolation and HIV and AIDS risk.</p> <p>3. Discussion on powerlessness, meaninglessness and ``being a cog in a big machine`` in HIV and AIDS risk reduction</p>	<p>be a risk factor in HIV and AIDS risk reduction</p> <p>2. Linking violence to HIV and AIDS risk</p> <p>3. Relating powerlessness and meaninglessness to HIV and AIDS risk</p>
--	--	--	--	---	--