

**PERCEPTION OF HEALTH NEEDS AND
HIV/AIDS THREATS IN RURAL AND
URBAN ZULU-SPEAKING ADULTS.**

GREGORY DAMIEN WOOD

Submitted in partial fulfilment of the requirements for the degree of Master of
Social Science (Clinical Psychology) in the Department of Psychology,
University of Natal, Pietermaritzburg.

1995

ABSTRACT

This study sought to investigate the relationship between variables common to models of health behaviour, and the role of demographic and contextual variables in determining or influencing AIDS health protective behaviours. In addition, the perceived and stated health needs and priorities of the sample were investigated. The overall intention of the study was to inform HIV/AIDS interventions in the region.

A sample of fifty Zulu-speaking adults were randomly selected from a rural area and an urban area within the KwaZulu-Natal Midlands. Data was obtained using a simple questionnaire together with a structured interview. Data was collected by Zulu-speaking assistants. The design and instruments were based on the findings of a pilot study conducted in the same area.

The results of the study showed a close relationship between perceived health needs and identified social and environmental problems. HIV/AIDS and other sexually transmitted diseases were not perceived by those sampled as a health priority. Results indicated that knowledge of HIV/AIDS was relatively low and responses tended to be stereotyped. There was some indication of an awareness of personal vulnerability and self-efficacy, but subjects' responses suggest that this was not translated into health-protective behaviours. Culture, gender, age, education and rural/urban classification were found to be associated with the prioritisation of health needs and explanations of

ill-health. Urban/rural classification was found to be significantly related to knowledge score and efficacy score, and gender was significantly related to the behaviour score.

It was concluded that while many of the variables included in the theoretical models of health behaviour were useful in explaining such behaviour in the population studied, demographic and contextual factors were paramount in determining and influencing decisions about health.

ACKNOWLEDGEMENTS

I gratefully acknowledge the help received from many people in the completion of this thesis. In particular I would like to thank:

My supervisor, Professor Graham Lindegger, for all the guidance and patience, and particularly for continuing to assist during his sabbatical.

Craig Higson-Smith for assistance with the analysis of data, and for assisting Prof. Lindegger with supervising this thesis during his sabbatical.

My research assistants, Bonginkosi Njapha and Nombulelo Makalima, as well as Dennis Dlamini who assisted during the pilot study. Jacque Dawson, Thulani and others at the Natal Provincial Administration who helped in the identification of clinics and transportation of the research assistants.

Catharina Adendorff for her assistance in doing the content analysis, and to Catharina and Shirley Adendorff for proof reading and editing.

The Organisation for Appropriate Social Services in South Africa (OASSSA) for their financial assistance and support. Thanks, too, to the Progressive Primary Health Care Network, and to the Pietermaritzburg AIDS Training, Information and Counselling Centre (ATICC) for supporting the study and allowing me the time to complete it.

The people who so kindly gave of their time to participate in this study.

The Medical Research Council for their financial assistance. Opinions expressed in this thesis, and conclusions arrived at, are those of the author and are not necessarily to be attributed to the Medical Research Council.

Finally, to Barbara Mason for her assistance, encouragement and patience.

PREFACE

This whole thesis, unless otherwise noted in the text,
is the product of my own original work.

TABLE OF CONTENTS

<i>ABSTRACT</i>	i
<i>ACKNOWLEDGEMENTS</i>	iii
<i>PREFACE</i>	iv
<i>TABLE OF CONTENTS</i>	vi
<i>LIST OF FIGURES</i>	viii
<i>LIST OF TABLES</i>	viii
CHAPTER 1: INTRODUCTION	1
1.1 HIV latency and the progression to AIDS	1
1.2 AIDS and the South African Experience	3
1.3 State and NGO Responses to the Epidemic	6
1.4 Interventions in the first decade of AIDS	9
1.5 The present study	12
CHAPTER 2:	
KAP STUDIES AND THEORIES OF BEHAVIOUR CHANGE	14
2.1 Research on elements of behaviour change	14
2.1.1 Men who have sex with men	15
2.1.2 Intravenous Drug Users	18
2.1.3 Commercial Sex Workers and their Clients	20
2.1.4 General Heterosexual Public	21
2.2 Models of Health Behaviours	27
2.2.1 The Health Belief Model	28
2.2.2 The Theory of Reasoned Action and other models	31
2.2.3 Application to HIV/AIDS-related behaviours	34
2.3 Critiques of models of health behaviour	37
CHAPTER 3: INVESTIGATING THE CONTEXT	46
3.1 Social and cultural contexts	46
3.2 Gender-specific issues	50
3.3 Impact on theories of behaviour	52

CHAPTER 4: AIM	59
4.1 Research questions	59
4.2 Organisations involved	61
4.3 Methodological issues	62
CHAPTER 5: METHOD	66
5.1 Design	66
5.1.1 Pilot Study	66
5.1.2 Study Design	68
5.2 Sample	69
5.3 Instruments	71
5.3.1 The questionnaire	71
5.3.2 The structured interview	74
5.4 Procedure	76
5.5 Data Analysis	77
CHAPTER 6: RESULTS	80
6.1 Demographics	80
6.2 Questionnaire	80
6.2.1 Single items of interest	80
6.2.2 Scale scores	85
6.3 Content Analysis of structured interviews	85
6.4 Investigation of relationships between variables	90
6.4.1 One-way analysis of variance (ANOVA) of scale scores ..	90
6.4.2 Cross-tabulations	91
6.4.2.1 <i>Demographic relationships</i>	91
6.4.2.2 <i>Community health issues</i>	94
6.4.2.3 <i>AIDS-specific issues</i>	97
6.5 Factor Analysis	101
6.5.1 Factor 1	103
6.5.2 Factor 2	104
6.5.3 Factor 3	104
6.5.4 Factor 4	105
6.5.5 Factor 5	105
CHAPTER 7: DISCUSSION	106
7.1 Elements of Health Behaviour Models	106
7.2 The importance of knowledge in determining rational thinking ...	114
7.3 The influence of demographic variables	120

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS 132

 8.1 Conclusions 133

 8.2 Critique of the study 137

 8.3 Recommendations for further research 140

 8.4 Concluding comment 141

REFERENCES 143

APPENDICES159

 APPENDIX A: AIDS Questionnaire (English & Zulu). I

 APPENDIX B: Interview schedule. IX

 APPENDIX C: Questionnaire and content analysis items. XI

 APPENDIX D: Factor analysis final statistics XXX

LIST OF FIGURES

FIGURE 1: Water provision and sanitation	56
FIGURE 2: Provision of recreation facilities	57
FIGURE 3: Age distribution	70
FIGURE 4: Content analysis scree plot	102

LIST OF TABLES

TABLE 1: Age distribution	70
TABLE 2: Scale details	74
TABLE 3: Question 1 - <i>Do you think YOU could ever get AIDS?</i>	81
TABLE 4: Question 3 - <i>Can YOU prevent yourself getting AIDS?</i>	81
TABLE 5: Question 5 - <i>Are you worried that you might get AIDS?</i>	81
TABLE 6: Question 6 - <i>Do you use condoms</i>	82
TABLE 7: Question 7 - <i>Do you have partner/s</i>	82
TABLE 8: Question 8 - <i>Do you use condoms</i>	82
TABLE 9: Question 9 - <i>Have you ever been treated for an STD?</i>	83
TABLE 10: Question 10 - <i>Do you do anything to prevent AIDS?</i>	83
TABLE 11: Question 12 - <i>Do you think your friends could get AIDS?</i>	83
TABLE 12: Question 13 - <i>"Real" men don't use condoms</i>	83
TABLE 13: Question 14 - <i>Can you see if someone has the AIDS germ?</i>	84
TABLE 14: Question 18 - <i>People like me never get AIDS</i>	84
TABLE 15: Question 19 - <i>Only people with many sexual partners get AIDS</i>	84
TABLE 16: Demographic question 6 - <i>sexual partners in the last 2 months</i>	85
TABLE 17: Scale scores, means, statistics	85
TABLE 18: Crosstabulations: Demographic relationships	91
TABLE 19: Crosstabulation: Behaviour score x Sex	93
TABLE 20: Crosstabulation: Behaviour score x Age	94
TABLE 21: Crosstabulations: Community health issues	94
TABLE 22: Crosstabulations: AIDS-specific issues	97
TABLE 23: Factor analysis statistics	102
TABLE 24: Factor analysis variables and factor loadings	103

CHAPTER 1

INTRODUCTION

The HIV/AIDS pandemic has escalated dramatically over the past decade. While research in the first decade since the virus was discovered has increased understanding of many aspects of the human immunodeficiency virus (HIV), behaviour change still remains the only means of primary prevention. Further, given the absence of any cure for the condition, behavioural intervention remains important for those infected with HIV/AIDS. Therefore, the HIV epidemic provides a considerable challenge for the behavioural sciences in general and psychology in particular (Lindegger & Wood, 1994).

A knowledge of how the acquired immunodeficiency syndrome (AIDS) differs from other terminal illnesses is important in comprehending the behavioural issues presented in this thesis.

1.1 HIV latency and the progression to AIDS

The transmission of HIV occurs when viral cells present in body fluids such as semen, vaginal fluid or blood, are carried from an infected person to another person. At the time of infection, the infected person may experience a time-limited flu-like fever, after which he or she normally returns to his or her former level of health. In most cases the cells which have been infected with HIV continue their normal activities, even reproducing as before (Siano, 1993). Some researchers believe that in certain cases infection will not advance beyond this point. This state is called dormancy. Other researchers believe that everyone infected with HIV will eventually get sick. This is not a fact but a theoretical projection based on incomplete statistics (ibid). Examples of people who have tested positive for HIV in sub-Saharan Africa provide evidence that

the prognosis for infected people is, however, not good, particularly among disadvantaged communities.

The immune system is the bodily system most severely targeted by HIV, and in people with symptoms it is the gradual disabling of the immune system, not the virus itself, that can become life-threatening. Still, although the cells that are designed to fight off HIV are the very cells that HIV attacks and attempts to destroy, the immune system does not remain passive in the face of this infection. Instead it produces antibodies to the virus which are chemical substances custom-designed to disable HIV before it infects cells. It is these antibodies which are measured in the HIV antibody tests, used to determine whether a person is carrying the virus or not. The antibodies, however, fail to recognise the virus they were created to neutralize, and with each new generation of HIV, the antibodies that worked against the previous generation can prove ineffective against the new one. Thus the infected person's immune system deteriorates over time until it is unable to defend the body against opportunistic infections.

The dormancy period is a major contributing factor to people's disbelief about HIV and AIDS, and makes the prevention of HIV spread difficult. The concept of a latent period during which the virus is replicating, but the infected person still looks and feels healthy, is complex and difficult to explain to people who have a limited knowledge of how the immune system works. Many sexually transmitted diseases, unlike HIV, present as both painful and recognizable. People can thus be educated to identify symptoms and take prompt action. However, in the dormant stage, the only way to identify a person living with HIV is through an expensive and specialised testing procedure. The fact that HIV infection is a chronic condition, and one which is seen to lead to AIDS, which in turn is perceived to be dreaded and terminal, is another factor that sets HIV apart from other sexually transmitted diseases and infectious viruses. People are often fearful of HIV and thus wish to identify and keep away from people who are infected. The Acquired Immune Deficiency Syndrome (AIDS) is a

medical diagnosis indicating that the virus has significantly affected the infected person's immune system. The diagnosis is made on the basis of a collection of minor symptoms such as weight loss, chronic diarrhoea, fungal infections, etc., as well as one or more major illnesses such as tuberculosis or pneumonia (Evian, 1993). However, the term "AIDS" is often used as a generic term for both the infection and the end-stage medical diagnosis.

The time HIV takes to impair the immune system to the extent of causing illness in the infected person varies considerably. This depends, for example, on the health of individuals, their immune responses, and whether they assist the immune system through healthy diet, stress-free living, and retroviral medications. A rough average based on the case experiences in South Africa and other sub-Saharan countries indicates that it takes between three and seven years for the infected person to become symptomatic with HIV-related illness, and a further few years to deteriorate to the full-blown AIDS stage, at which they are likely to die from one or a combination of opportunistic infections within one to three years (ibid).

1.2 AIDS and the South African Experience

The AIDS epidemic, although indiscriminate in terms of how and whom it affects, tends to take the path of least resistance. In countries throughout the world the prevalence of HIV has increased in poorer and more under-resourced communities, which offer the least resistance to the spread of HIV. For this reason the virus has become a form of social barometer, highlighting not only the social and economic imbalances within societies, but also such imbalances between countries and national economies. It is not surprising that the heterosexual spread of the virus continues virtually unabated in the developing world, and particularly in Africa, which is estimated to house ten million of the projected seventeen million HIV positive people in the world (cited at the 10th Annual Conference on HIV and AIDS, Yokohama, 1994).

While other major health threats are relatively stable in terms of the proportion of the population afflicted, there has been a dramatic increase in the incidence of HIV infection over the past decade, especially in the adolescent to middle age group. It is estimated that more than 20% of rural populations and 30% of adult urban populations in parts of sub-Saharan Africa are HIV positive (Lindegger & Wood, 1994). A 1993 sero survey amongst ante-natal clinic attenders in Botswana confirmed this, with prevalence levels of 18.3% in the rural districts of Chobe/Kasane, and 34.2% in the urban area of Francistown (Whiteside, 1994).

Barnett and Blaikie (1992) refer to development issues which result from the AIDS epidemic in Africa. Issues of poverty, entitlement and access to food, medical care and income, the relationships between men and women, the relative abilities of states to provide security and services for their peoples, the relationships between rich and poor in society, the viability of different forms of rural production, and the survival and coping strategies of different types of households and communities all impinge upon a consideration of the ways in which the AIDS epidemic affects societies and economies.

In assessing the impact of AIDS on the South African population and the way in which people in this country respond to the epidemic, one cannot ignore the legacy of apartheid which has effectively determined the path of least resistance in racial terms. Nowhere else in Africa, or the developed world for that matter, has the predominantly *class-based* discriminant been entrenched in the constitution of a nation (Crewe, 1992). Here, apartheid has caused the unequal access to resources, education and medical care that exacerbate the spread of HIV. AIDS is laying bare and intensifying the social prejudices, economic inequalities, discriminatory practices and political injustices that have been the cornerstone of apartheid (ibid). HIV in South Africa flourishes most in areas that are burdened by unemployment, homelessness, welfare dependency, prostitution, crime, a high school drop-out rate, and social unrest. It is no surprise that the areas of KwaZulu-Natal that have been worst affected by political conflict, violence and poverty have the highest incidence of HIV in South Africa (Kustner, 1993). The

Fourth Annual National HIV Sentinel Survey indicated that in KwaZulu-Natal 9.6%, or one in ten, of ante-natal clinic attenders were infected with the virus that causes AIDS (Swanevelder, 1994). It is estimated that this will rise to one in eight sexually active adults by the year 2000 (Doyle, 1991).

AIDS cannot be addressed merely in medical or sexual terms, for people do not have equal resources and opportunities to make equal choices about health care and lifestyle. Many health-care problems stem from migrant labour, the rural-urban drift and informal settlements. Poverty remains the primary cause of the high prevalence of many diseases, and of widespread hunger and malnutrition. Many diseases that have all but been eradicated from the white population, such as TB, pneumonia, measles and polio, still occur among black children and adults - a consequence of dreadful living conditions and inferior health care (Crewe, 1992). Thus the initial medical response to the epidemic in South Africa proved hopelessly inadequate because people were unable to change behaviours due to socio-economic and socio-political factors. AIDS in South Africa is integrally connected to the lives which many people are forced to live, through legislation and economic conditions, and thus cannot be addressed merely on sexual or medical terms.

Heyns (1992) identifies specific hurdles and voids encountered in the battle against AIDS in South Africa. There has been very limited change in public attitudes, with condemnatory and discriminatory overtones, including racial, gender and sexual preference biases. Employment policies remain discriminatory, with few companies initiating progressive AIDS campaigns in the workplace. Concern is mainly directed at short-term solutions such as excluding HIV infected persons through pre-employment HIV testing. Welfare organisations do not have the means to care for large numbers of AIDS-affected people, including orphans and HIV infected babies who have been abandoned. Inadequate and contradictory information adds to scepticism and confusion, resulting in apathy. Furthermore, the fragmentation of health services, covert and overt racist stigma and misconceptions, single sex hostels, conservative and constricting laws, distrust in an apartheid-driven family planning system, an illiteracy

level of approximately 50%, poor educational resources for the majority, cultural isolation, and a history of oppression of women, have made the struggle against HIV/AIDS in this country parallel to the struggle for social, economic and political reconstruction (NAMDA News, 1988; Crewe, 1992).

1.3 State and NGO Responses to the Epidemic

In South Africa there is still a great deal of opposition from churches and education departments to open education and media which deal with sex and sexuality. Initial AIDS education programmes were, according to the Transvaal Education Department (TED), to be based on "cultivating a lifestyle based on high moral standards, chastity and being aware of the ideal sexual relationship: one man with one woman" (TED, 1988). The overall message was that condom promotion encourages promiscuity, a belief inherent in many South African schools today. The Correctional Services still do not allow condoms to be distributed in prisons and the legal system still outlaws homosexual practices and "prostitution", making interventions with people who follow sexual practices that are illegal, difficult. Catania, Kegeles and Coates (1990) emphasise the importance of the erotic component of safer sexual behaviour. They argue that the perception that safer sex activities are not enjoyable constitutes a major barrier to the adoption of safer sexual practices. Two adult videos aimed at heterosexual and homosexual safer sex were produced by Reel Communications in Cape Town, but were banned due to their "pornographic content" by the Censor Board. This was in defiance of expert testimony as to the appropriateness and absolute need for such materials. The decision is currently under appeal. The AIDS Programme's budgeted expenditure of R21 056 000 for 1993/1994 was not only one of the lowest in Africa¹, but was also disproportionate to the country's gross domestic product (Schneider, Steinberg & Ijsselmuiden, 1993). Clearly, high-level political commitment to AIDS prevention and support for those affected is needed in order to address these deficiencies.

¹ This refers to the compared *per capita* expenditure.

The Department of National Health and Population Development (DNHPD) created the AIDS Unit to deal with the rising AIDS threat (NACOSA, 1993). The AIDS Programme of the DNHPD evolved from the AIDS Unit, a largely vertical programme set up by the DNHPD to counter AIDS. The AIDS Programme attempted to reduce the vertical nature of AIDS interventions by placing more planning and decision-making powers with the regions and seventeen local AIDS Training, Information (and Counselling) Centres (ATICs or ATICCs), which are situated within local authorities (Zandberg, 1993). Due largely to international isolation of the government in power, because of its adherence to the apartheid system, the World Health Organisation Global Programme on AIDS (WHO/GPA) has not had a great deal of influence on AIDS interventions in South Africa.

At the Fourth International Conference on Health in Southern Africa held in Maputo (Stein & Zwi, 1990) a resolution was passed to approach HIV/AIDS as a community intervention, involving the communities it affects and addressing the broader sociopolitical and developmental issues at hand. Delegates agreed that a comprehensive campaign should be non-stigmatizing, founded upon community-based action, involve political and community leadership, and address the social and political factors relating to the spread of the disease. A major non-governmental AIDS prevention initiative was funded in South Africa in 1991 and placed within the National Progressive Primary Health Care Network (NPPHCN), a network of health, welfare and development projects working within disadvantaged communities in South Africa. Two years on, the implementation of community-based AIDS workers within the NPPHCN National AIDS Programme has helped foster a degree of community participation and acceptance, but is largely individualistic in its approach. A valid and well-researched evaluation of the effectiveness of this programme is, however, needed.

In recognition of the need to address AIDS in South Africa, the African National Congress (ANC), Department of National Health and Population Development and various non-government organisations decided to organise a consultative conference. The consequent meeting of the National AIDS Convention of South Africa (NACOSA)

in October 1992 was an indication of the need to address the inadequate approach to HIV/AIDS and to unite the many AIDS projects and organisations in the country (Schneider *et al*, 1993). The NACOSA process has produced, from a series of commissions, a national AIDS strategy which addresses, amongst other things, AIDS prevention and psychosocial support in South Africa. The election of a new democratic government in April of 1994 saw a new state commitment to addressing the HIV epidemic. The government and non-government participants in the newly formed National AIDS Coordinating Committee of South Africa (NACOSA)² completed the strategy document with the assistance of various international advisors, as well as a national implementation plan. The Ministry of Health doubled the 1994/95 allocation of funds for AIDS intervention, resulting in a further R21 million being made available in the second half of 1994. The KwaZulu-Natal region, as the worst-affected province in the country, completed a provincial implementation plan and launched it on the 11th October 1994. This plan outlines planning around the prevention of HIV spread, education of young and old, specific target groups and the general population; provides for a welfare plan for those affected by HIV; addresses the counselling and psychosocial needs of those affected; addresses issues of discrimination, gender inequality, condom social marketing, the care of people living with AIDS and those affected by AIDS; and the management of the provincial AIDS Programme.

Why, then, is so much energy and research placed in countering this virus in a society which has a myriad of other economic and political problems and health and social deficiencies? What makes AIDS unique is the people affected - mainly young productive adults; the fact that it is fatal and currently incurable; the potential for a sizeable percentage of the sexually active population to become infected; and the fact that the disease is preventable. Due to a fall in life expectancy in the population and a rise in infant mortality rates, AIDS threatens to overturn many of the developmental gains of the past decades, as well as the economic and social upliftment which the

²The convention elected a coordinating committee which took on the role of converting the aims of the convention into practice. This coordinating committee has the same acronym as the original convention, with the "C" for "convention" now representing "Coordinating Committee".

Reconstruction and Development Plan aims to achieve (Government of the Republic of South Africa, 1994).

Due to the rapid spread of HIV and the unique nature of the latent period (which is characterised by the person being asymptomatic, yet infected and infectious) interventions have been largely reactive and crisis-centred. However, over ten years have passed and there have been numerous opportunities for behavioural scientists to investigate the applicability of theories of behaviour change, potentially successful interventions, and the appropriateness of the individualistic cognitive approach which has been adopted by AIDS interventionists throughout the world.

1.4 Interventions in the first decade of AIDS

Attempts to reduce risk for HIV infection include broad HIV-related education, and especially education around the use of condoms; clinical interventions with individuals and/or groups, e.g. educational groups, assertiveness training, social skills training; voluntary testing coupled with counselling; encouraging partner notification of HIV status; one-to-one and group counselling and education by health care providers; and broad community-based interventions (Anderson, Hortensia, Bailey, Barret, Boccellari, Bonde, B6yd-Franklin, Coates, Franks, Gornemann, Landry, Lo, McKusick, Shore, Steiner, Tafoya, 1991).

As one broad preventive strategy for HIV prevention, a variety of individual-, group- and media-based educational campaigns have been mounted to educate the general public about HIV (Lindegger & Wood, 1994). These educational campaigns have been informed by a variety of educational models, ranging from traditional humanistic, to radical structuralist (Taylor, 1990; Brouard, 1993). Educational campaigns aimed at improving knowledge of HIV/AIDS and self-protective behaviour seem to have had varied impact. Some studies have found that broad educational campaigns had relatively little impact (Baum & Nesselhof, 1988). On the other hand, a number of large surveys have found changes in HIV risk factors following educational programs,

especially in homogenous communities, e.g. in the gay community of inner city San Francisco (St Lawrence, Hood, Brasfield & Kelly, 1989). However, it has been unclear whether these changes have been the result of effective campaigns, or an increased sense of personal vulnerability to HIV due to greater personal contact with HIV positive persons or experience of AIDS-related death among close friends or family.

Research into the efficacy of educational campaigns which usually rely on a media-based approach shows that the question of audience needs to be addressed because members of specific groups, such as homosexuals or intravenous drug users, may respond to broad media campaigns quite differently from members of other groups (McKusick, Conant and Coates, 1985; Burton, Burn, Harvey, Mason and McKerrow, 1986). There is evidence that to be effective, educational programmes must consider political, scientific, cultural and economic factors affecting the target audience (Cornish, 1989). For example, it is likely that in parts of South Africa, as in other Third World economies, the threat of AIDS may be perceived as relatively minor and non-immediate by comparison with many of the other life threats experienced on a daily basis, e.g. hunger or violence (Tengani, 1993; Caldwell, Orubuloye and Caldwell, 1994a).

Studies into the effectiveness of campaigns which aim at increasing knowledge in order to instigate behaviour change have shown that knowledge of HIV/AIDS in itself is not sufficient for decreasing risk behaviours, especially because of the frequent failure to translate knowledge into self-protective behaviour (Kelly, Murphy, Sikkema & Kalichman, 1993). Greater emphasis has been placed on teaching skills to make risk reduction behaviour changes (ibid). Research on this type of intervention has produced evidence of significant changes in sexual risk behaviours (Kelly & St. Lawrence, 1988), especially in specific groups such as gay inner city communities. However, these projects have largely involved small select samples of motivated volunteers and have relied largely on participant reports of behaviour change (Lindegger & Wood, 1994).

Health-related psychological research has shown that in considering the modification of personal risks for disease, perception of peer norms regarding risk behaviours plays an important role as a modifying variable (ibid). For example, where condom use or other safer sex practices are expected to be endorsed and supported by peer groups, there is a greater likelihood of these safe behaviours being practised by members of the peer group (ibid). It has also been found that HIV-related information obtained from the media is only used when it corresponds with and is reinforced by social beliefs and norms, indicating the need for these components to be incorporated into intervention strategies at a community level (Martin & Vance, 1984; Perkel, Strelbel & Joubert, 1991). However, as discussed in the chapter that follows, most of this research has focused on Western First World gay communities, which are far removed from the South African context, thus necessitating further research in this area. Given the multi-cultural context of South Africa, AIDS education programmes need to consider and be delivered in the context of different social beliefs about AIDS and peer sexual norms (Lindegger & Wood, 1994).

Multidimensional, grassroots, community-based campaigns are important vehicles of intervention in the HIV epidemic (ibid). Further, community-based intervention through educators who are credible within their communities, and the expansion of community-based programmes, are prerequisites for sustained and supported risk behaviour change (Johnson, Ostrow, & Joseph, 1990). Such community-based interventions (for example, the PPHCN AIDS Programme) have been attempted in South Africa, as discussed above, but need to be evaluated in order to investigate whether they are truly community-oriented. An example is provided in the research of Kelly and St. Lawrence (1988), who discovered that sustaining behaviour changes to reduce HIV risk also required an appraisal of values, goals, social networks, and personal relationships. However, the programme hinged upon community networking consultation and local community member-, leader- and organisation-involvement. Community-based approaches have the potential for developing community-specific interventions reaching far greater portions of the population (Lindegger & Wood, 1994). Schoub (1992) has identified three issues which require particular attention in

the South African context in order to adequately address the AIDS crisis: (1) poverty and overcrowding, (2) the economic dependency of women which makes prostitution an inevitable source of income, and (3) single sex hostels and migratory labour.

However important and effective other preventive strategies are, without addressing the broader issues there is unlikely to be a significant change in the AIDS crisis in South Africa. The present study aims to begin debating this issue.

1.5 The present study

Interventions in the KwaZulu-Natal area, which has the highest prevalence of HIV infection in South Africa, have been based largely upon broad media campaigns, with some group and individual counselling and education with people attending specific AIDS workshops, or those presenting at clinics and hospitals. A limited amount of intervention with school-going children had been done at the time of the present study, although this is rapidly changing. The author is not aware of any interventions based on cognitive-behavioural intervention models (similar to those proposed by Kelly *et al* (1993)) being implemented in the KwaZulu-Natal Midlands region. Broad community-based interventions, although planned for within the NACOSA plan (NACOSA, 1994), have essentially been education-based and targeted at the individual.

This study attempts to investigate the relationships that exist between variables identified within the Health Belief Model (Janz & Becker, 1984) and the Theory of Reasoned Action (Valois, Desharnais & Godin, 1988), including the demographic factors that impact on these variables, in an urban-based cohort of Zulu-speaking adults and a rural-based cohort of Zulu-speaking adults. The perceived and stated health needs of those participating are investigated in order to determine the effect that such priorities have on how people make decisions about HIV-risk behaviour, and the impact that this has on AIDS-preventive messages, and on beliefs, attitudes and knowledge about HIV/AIDS. The assumption, upon which many education-based programmes are based, that such health and development priorities should be regarded

as mere "barriers" to cognitions about specific AIDS risk, is questioned; and the importance of social, development and cultural variables on the cognitive process, especially with regard to the pathway of cognitive decision making, is discussed.

Chapter 2 provides a broad outline of knowledge, attitude and practice studies which have informed AIDS prevention efforts both in South Africa and elsewhere in the world. Theories of health-protective behaviour change are discussed, and critiques of various models are provided.

Chapter 3 discusses some of the community-based issues which impact on HIV-related behaviour, including development, gender and culture-specific issues. This is discussed with the aim of emphasising many of the problems which are specific to Third World countries, and which challenge some of the assumptions made in theories of behaviour change.

Chapter 4 sets out the academic and organisational aims of the study, provides a rationale, includes some comments on problems with surveys which focus on knowledge, attitudes and practices, and provides the questions that the study attempts to address.

In chapter 5 the method used in the study is discussed. This includes an explanation of the design, sample, procedure, instruments and data analysis. The findings of the study are provided in Chapter 6, and discussed in Chapter 7. Recommendations for future studies are provided in Chapter 8, along with the conclusions derived from this study.

CHAPTER 2

KAP³ STUDIES AND THEORIES OF BEHAVIOUR CHANGE

2.1 Research on elements of behaviour change

Psychologists and researchers have attempted to ascertain behavioural correlates of health for decades. The social cost of preventable disease which afflicts members of society is enormous, compelling theorists to consider perspectives of health protective behaviour which go beyond the concern for individuals. The nature of the AIDS epidemic makes it a notable concern, going beyond even cancer and heart disease in its ability to debilitate not only individual people, but their families and society as a whole.

Considerable research has been effected since the discovery of HIV in the early 1980's, much of which has attempted to explain the elements involved in placing people at risk, or increasing their risk to contracting the virus. This research has been mainly descriptive, that which has been more analytical, seeking to find the determinates and correlates for adopting protective behaviours, has largely had its theoretical origins within traditional health behaviour paradigms. This has mostly been due to the complexity of the behaviours involved, which cannot be equated with simpler health-promoting or disease-avoiding action. Whilst knowledge and attitudes, for example, have been shown to have a direct impact on behaviour, perceptions of risk and the numerous barriers to implementing behavioural intention are complex. Due to the contemporary nature of the epidemic, much of the research has concentrated on predominantly homosexual samples in Western First World societies, although with the

³ Research studies that investigate the knowledge, attitudes and practices of a population in order to inform intervention.

rapid spread of the epidemic in Africa, it has become vogue to replicate studies in Third World environs. A summary of some of these is provided below.

2.1.1 Men who have sex with men

Among those identified as homosexuals there is undisputable evidence of behaviour change, although some of the successes have seen a high relapse rate in recent years (Evans, Catchpole, Heptonstall, Mortimer, McCarrigle, Nicoll, Waight, Gill & Swan, 1993). Early reports from the United States described changes in the number of partners and increase in condom use. For example, McKusick, Horstman and Coates (1985), in a survey of 655 gay men in San Francisco, and McKusick, Wiley, Coates, Stall, Saika, Morin, Charles, Horstman, and Conant (1985) in a longitudinal study of 454 men from 1982-1984, found that declared monogamy rose in one year from 35 to 41% and there was a decline in the average number of sex partners per month from 1.9 to 0.7 during 1982-1984 for those not in a monogamous relationship. Winkelstein, Lyman, Padian, Grant, Samuel, Wiley, Anderson, Lang, Riggs and Levy (1987), studying 641 gay men and 171 bisexual men longitudinally from 1984-1986, reported that the prevalence of a rate of partners over six months declined by 60% in HIV negative men.

In other parts of the USA, there were many comparable reports in the early and mid 1980's. Indirect but nevertheless firmer evidence for behaviour change is provided by trends in the rate of HIV infection and the incidence of other STD's. It has been estimated in San Francisco that 21% of the HIV negative gay population became HIV positive in 1981-1982. In 1983 this fell dramatically to 2%, and in 1986 to 0.8%. The US Morbidity and Mortality Reports have documented falls in the incidence of syphilis and gonorrhoea among homosexuals, and a reduction in the proportion of hepatitis B accounted for by homosexual activity (21% of cases in 1982-1985, and only 9% of cases in 1986-1987) (Anderson *et al*, 1991).

The British and other evidence relates to a shorter time period. Nevertheless, there is a similar indication of adjustment in lifestyles. Evans, McLean, Dawson, Teece, Bond, McRae, and Thorpe (1989), reporting on four cohorts of homosexual men from a clinic in London 1984-1987, found that between the first and last cohorts there was a considerable fall in the proportion reporting casual relationships and high-risk activities such as receptive anal intercourse with casual partners. The findings from samples derived from clinics have been supported by studies obtaining their samples from gay clubs and social networks. Carne, Johnson, Pearce, Smith, Tedder, Weller, Loveday, Hawkins, Williams and Adler (1987) reported that 77% of 326 men recruited in central London said that AIDS had changed their lives, and 48% reported fewer partners than in the previous year. Anal intercourse was continued by 53%, but more reported using condoms, especially if there were multiple partners.

Evans *et al* (1993) conclude from an analytic study of surveillance data on sexually transmitted diseases in England and Wales that unsafe sexual behaviour and HIV transmissions have increased among homosexual men after a period of decline, and that recent HIV transmissions may disproportionately affect younger men. This is particularly worrying, as donors and health departments have recently introduced drastic cuts in funding of intervention programmes. Evans *et al* (1993, p.428) concede that the results may indicate that:

Transmission of infection is occurring both among the young, who may not have been fully exposed to the health education of the mid-1980's, and in older age groups, who may have changed to unsafe sex practices after previously heeding health advice.

The lack of support, among the larger heterosexual population, for addressing funding needs and supporting AIDS prevention and care initiatives, is causing an increase in defiance against messages perceived to come from a discriminating and homophobic American and British public (Wood, 1994). At the outset of the epidemic, AIDS was branded a "homosexual disease", and when this was found to be untrue, homosexuals

were attributed blame for its origins among the heterosexual public. Instead of being rewarded for adopting safer sexual practices, gay men were singled out to bear the brunt of social, religious and government prejudices. This is particularly true for South Africa, where discriminatory laws outlawed homosexual acts, fuelling homophobia (ibid).

The warnings of widespread loss of life originating from the AIDS lobby in western Europe and America have not eventuated, partly because of a misunderstanding of epidemiological theories, and partly because of the successes of intervention (as opposed to mere education) programmes (ibid). However, drastic cuts in public and non-government organisation (NGO) spending in the latter half of the 1980s, after an initial flood of funding, lead to the reduction of longitudinal studies and sustained behavioural and educational programmes. Wood (1994, p.7) states that

the so-called failures being described by Evans *et al* are more the consequences of subliminal genocide than failed theories of intervention.

Although there have been fewer studies of the behaviour of homosexual men in other parts of Europe, one study in France went further to consider social class differences. Surveys of some 1200 men in each of the years 1986-1988 showed that the proportions engaging in safer sex increased, but differentially by class. Unsafe behaviour declined from 50% to 25% of respondents among the working class, but from 37% to only 2% among higher classes (Pollack, 1988).

Schurink, Schurink and Botha (1993) describe the distinction between men who describe themselves as homosexual or "gay", or bisexual, as opposed to men who have sex with men, but do not admit their same-sex behaviour and who have little or no contact or involvement with the visible organized gay community or local gay structures. Migrant workers and men who are imprisoned often fall within this category; many of them not describing their same-sex sexual activities as homosexual,

and consider themselves to be heterosexual. Thus, although the so-called "pattern-1" epidemic among homosexual males which was predominant at the outset of the epidemic in South Africa has been replaced by a heterosexual or "pattern-2" epidemic, there is still a significant spread of the virus amongst men who have sex with men.

Taute (1991) investigated the differences between a sample of homosexual males and heterosexual males in Natal. Indications were that the homosexual sample had greater knowledge of AIDS risk factors, perceived themselves to be more vulnerable, felt that the AIDS epidemic had a greater influence on their sexual activity, and adopted more health protective behaviours. However, despite this, no significant difference was found in AIDS risk behaviour. These results support research findings (Joseph, Montgomery, Emmons, Kirscht, Kessler, Ostrow, Wortman, O'Brein, Eller & Eshelman, 1987; St Lawrence *et al*, 1989) which suggest that neither knowledge of risk factors nor perception of personal vulnerability on their own have any direct bearing on AIDS risk behaviour. The study also found that perceived efficacy of behaviour change was predictive of AIDS risk behaviour for both the homosexual and heterosexual samples. These elements will be discussed later in this chapter.

2.1.2 Intravenous Drug Users

For intravenous drug users (IVDU's), injecting behaviour, as well as sexual behaviour, is relevant. Some change in injecting behaviour, towards risk reduction by not sharing needles or by sterilizing them, is a general finding in the United States (e.g. Friedman, Des Jarlais & Sotheran, 1986; Curtis, Crummey, Baker, Foster, Khanyile, & Wilkins, 1989). In Europe, reduction in needle-sharing, whether brought about by information and outreach programmes or by changes in the availability of equipment in needle-exchange schemes, has been widely reported (Bunning, Verster & Gartgers, 1987; Power, 1989). Klee, Faugier, Hayes, Boulton and Morris (1990) found evidence of widespread needle-sharing in a sample of 303 drug injectors in Britain. This continued despite drug misusers' knowledge of the risks, although better knowledge was found to be associated with less sharing.

McKeganey and Barnard (1992) investigated the social dynamics of sharing, what it means to the individual involved, and how the practice relates to local drug cultures. Sharing signalled family and friendship ties, and key factors, besides the unavailability of equipment, included: social norms and accepted behaviours, individuals' assessment of risk, the relationships involved, and the difficulty of incorporating notions of infection within close personal ties. The risks of sharing were well understood, but individuals failed to see their own sharing as risky, for they trusted the people they shared with.

Both these studies found, on the other hand, that there was wide disregard of the possibility of sexual transmission of infection amongst drug users. This matches a wide range of other research, with similar findings in populations of commercial sex workers who would use condoms with their clients, but not with their boyfriends (Schurink, 1993).

Leigh and Stall (1993) provide a review of research on the relationship between substance use and high-risk sexual behaviour. They conclude that both sex and substance use are complicated behaviours, and therefore determining the nature of the relationship between them is not simple. They identify methodological problems (largely measurement limitations and inconsistencies across studies) and the reliance on conventional wisdom about substance-induced disinhibition, as a major hinderance to progress in the field. Thus, although there seems to be a clear relationship between alcohol or drug use and increased risk of contracting HIV, the relationship cannot be assumed to be causal. The findings of this review may be true of much of the research into behavioural and social correlates in HIV spread, and should be kept in mind when considering the findings of research referred to in this chapter.

In a study of intravenous drug users receiving treatment in South Africa, Rocha-Silva (1993) found that multiple drug use is common; younger (especially female) IVDU's tend to share needles; IV drug use often takes place in a social context (in the company of others); IVDU's tend towards indiscriminate risky sexual activity with regard to

possible HIV infection; female IVDU's are often commercial sex workers; while female IVDU's seem more committed to the use of condoms, this is not so for males; IVDU's sidestep the use of condoms, and when condoms are used this is not consistent, and those with multiple partners or who are commercial sex workers tend not to use condoms; and that IVDU's have a fatalistic view of life and expect to live for only a short time. Rocha-Silva (ibid, p.6) states that

. . . although there is some indication that those with comparatively severe alcohol/drug related problems in this country are generally positively oriented towards the need, value and accessibility of precautions against HIV infection, there is also some evidence that they tend to realize that this attitude needs to be supplemented by the decision to put into practice that which is believed/preached and to ensure that this decision is based on fact.

The sample seemed to have adequate knowledge of how HIV is transmitted (both drug-related and sexually transmitted) as well as how to prevent infection (use of condoms, partner reduction, not sharing needles), indicating that knowledge and intention was not causing a change in behaviour.

2.1.3 Commercial Sex Workers⁴ and their Clients

Studies in London (Day, Ward & Harris, 1988) noted that 62% of "prostitutes" reported that condoms were always used with clients, especially new clients. The advent of AIDS has seemed to give more power to the worker in directing the nature of the transaction. However, the condom has become a token of work and many sex workers will not use condoms with their regular partners solely to differentiate between professional and personal lives. Plant, Plant, Peck and Setters (1989) further note that marginalised workers - drug users, those without support of pimps or madams,

⁴ The term "prostitute" is considered to have negative and judgmental connotations, and the term "commercial sex workers" is used to identify sex work as a legitimate means of income generation.

streetwalkers with lower status, and those who are "amateurs" - are least likely to change and more likely to accept the clients terms.

From direct interviews with clients (126 respondents) and sex workers' records of clients (300 interactions) in Birmingham, Kinnell (1989) reported that two-thirds of clients reported at least one non-prostitute partner, 15% reported three or more non-prostitute partners, and only 21% of those with a regular non-prostitute partner reported the use of condoms at least some of the time. McKeganey, Barnard, Bloor, and Leyland (1990) found that clients offered more money for unprotected sex.

In a qualitative study of formal and informal commercial sex workers in Durban and Johannesburg, Schurink (1993) found that, with the exception of some young (usually black) girls, both female and male sex workers were generally aware of the existence of AIDS and that they were susceptible to it, although a minority knew how to protect themselves. Visits to clinics for condoms and syringes did not result in guidance being given as to protection against AIDS by clinic staff. While the majority of female sex workers reported using condoms for sex and oral sex, many reported being offered more money by clients for having unprotected sex, a similar trend to the findings of McKeganey *et al* (1990) discussed above. Although the majority insisted this would be refused, Schurink (1993) believes that those who are IV drug users or alcoholics would be less likely to refuse. Similar findings to Day *et al* (1988) regarding non-protective sex with their regular partners or boyfriends was found with approximately half of Schurink's (1993) sample. Male prostitutes reported a higher incidence of oral sex and masturbation than anal sex (normally the active inserter role was preferred), and, while they insisted on condoms being used for anal sex, this was not always possible.

2.1.4 General Heterosexual Public

There is very little firm information about whether the non-drug-using exclusively heterosexual population has altered sexual behaviour in any way as a response to AIDS. Most studies have examined attitude and knowledge changes. The prime difficulty lies

in the lack of base-line data by which behaviour change can be measured. The few studies that have taken place among the general population have found little evidence of behaviour change. A comparative evaluation of national campaigns in Australia, Sweden and the U.K. (Hornik, 1989) concluded that they do not produce short-term effects on practice for the general population. An evaluation of the Swiss Stop-AIDS campaign (Lehmann, Hausser, Daubois-Arber & Gutzwiller, 1988) concluded that any change was slow and discontinuous. A small longitudinal survey of heterosexual men in San Francisco found, however, that the number of partners was reduced between 1984 and 1986 (Kelly *et al*, 1993).

Robertson and McQueen (1991), in a continuous telephone survey which began in 1987, using samples from Edinburgh, Glasgow and London, found that condom use remains a minority behaviour, even amongst those with multiple partners; that there is, however, an overall increase in condom use; and little change overall in the number of reported partners. Among less educated people the changes were less and started from a lower base.

The use of condoms in a society which traditionally frowns upon contraceptive methods which inhibit the "sowing of the male seed" provides a good operational measure for assessing changing behaviours. In many African societies the heterosexual spread is fostered by a combination of the tradition of male "dumping"⁵ and powerlessness on the part of females in a patriarchal social system (Orubuloye, Caldwell & Caldwell, 1994). In Zimbabwe, Wilson, Mparadzi and Lavelle (1992) tested the effectiveness of skills-based, participative interventions which were found to be more effectual than information-based interventions in American studies (Huggins & Renaldo, 1990; Kelly & St Lawrence, 1989, in Wilson *et al*, 1992). The results suggested that skills-based training produced significantly greater changes in knowledge, attitudes and behaviour, and that these changes persisted over several months. However, they stated that there were too few psychologists in Africa to successfully lead such interventions.

⁵ "Dumping" is similar to "sowing of the seed" and is a term sometimes used to describe the depositing of semen into the vagina.

A recent study amongst the general population throughout South Africa was carried out by Du Plessis, Meyer-Weitz and Steyn (1993), with a sample of 5360 people. 83% of those questioned knew that HIV could be transmitted through sexual intercourse with an infected partner, but black respondents had significantly less correct answers in terms of transmission via other proven means. Frequency of access to a television increased levels of knowledge about HIV transmission. However, less educated respondents were confused about transmission via casual contact. Low to average levels of knowledge of STDs were found, with Nguni-speaking respondents being less well informed. Knowledge about prevention was linked to standard of education. Sexually active people (especially males) were found to have negative perceptions regarding condom use. 63% of respondents had not used condoms in the previous three months, with 9% using them with every sexual encounter, and 14% using them occasionally. Positive perceptions regarding one's own ability to be self-efficient in maintaining one's own health seemed to be more evident in economically and educationally advantaged social groupings. Perceptions of social distance towards people with HIV or AIDS were found to be great, and tended to spill over into fears about one's infected state. An interesting finding was that knowledge factors emerged as being less influential over safer sex behaviour than attitudinal factors, while social support was proven to be an important variable in reported behaviour change and in more positive perceptions of self-efficacy. This is congruent with the emphasis on perceived peer norms having an influence on intention to change behaviour, as stipulated in the Theory of Reasoned Action (Valois, Desharnais & Godin, 1988).

A sample of 324 (mainly black) parents from various sites in South Africa showed a significant difference between literate, more educated parents and semi-literate or illiterate parents (Conradie and Rabie, 1993). Both groups listed many illnesses other than AIDS, such as TB, cancer, venereal disease and measles as being the most serious health problems in their communities. The conclusion was that parents would thus be inclined not to prioritize the desire for behaviour change. On the whole, the more educated respondents showed that they had more access to factually correct information about AIDS, with 87% of this group knowing what "safer sexual practices" are, 72%

knowing what risk practices are, and 77.5% knowing what STDs are. Only 12.5% of the illiterate group had a basic idea of what HIV infection is and 62.5% had an idea what AIDS is. 72.5% knew that AIDS is incurable.

Of particular interest to the present study is a recent examination of knowledge, attitudes, beliefs and general sexual behaviour patterns in Alexandra Township's informal settlements (Ratsaka & Hirschowitz, 1993). The sample consisted of 300 male informal settlement dwellers. Although 54% of respondents said they had a permanent partner in Alexandra, 46% were not living with them at the time, and 58% of all respondents had a permanent partner outside Alexandra, with the frequency of visits to these partners ranging from once to ten times a year. The majority of the sample, therefore, had multiple partners. Almost 39% admitted to having had at least one STD in the past. 27% of the sample did not know anything or were ill-informed about AIDS. As many as 64% felt they were not at risk of contracting AIDS, while 13% thought that they were at slight risk, and 12% thought they had a significant chance of contracting HIV. However, 85% of the sample knew that one could "get AIDS" through sexual intercourse, although there were numerous misconceptions about transmission (eg. 68% said AIDS could be passed on through mosquito bites). There was a general lack of knowledge about prevention, with only 29% mentioning condom-use as a barrier, and 26% mentioning being faithful to one partner, or else changing sexual behaviour. 65% reported never having used condoms in the past. Reasons for not using condoms included:

. . . being faithful to and trusting one's partner, not being used to a condom, being sexually abstinent, fear of wasting sperm, fear of diminishing the degree of sexual pleasure or of performing poorly and dislike of condoms.

(Ratsaka & Hirschowitz, 1993, p.13)

In all, there was evidence of resistance against condom use, with fear of partner's reaction and desire to have children given as most frequent reasons for such resistance.

Visser, Korf, Claassen, Phehlukwayo, Pickworth, Posthuma, Pretorius and Roos (1993) investigated knowledge, attitudes and perceptions among 262 students attending 15 tertiary institutions throughout South Africa. Students were found to have a good basic knowledge of AIDS, although there were uncertainties, unanswered questions and misconceptions. The most common reactions to AIDS were feelings of fear, threat, powerlessness and not being in control. Some felt that their sexual freedom was impinged upon, and AIDS affected the level of trust in their relationships. Behavioural inhibitions were indicated:

Defence mechanisms and misconceptions lead to a perception of AIDS as not a reality, as remote and not a threat to them personally regardless of their behaviour. This perception of AIDS provides a possible explanation why many students with high-risk behaviour had not yet changed their behaviour, and why AIDS was not yet important in their lives.

(Visser *et al*, 1993, p.3)

An explanation for the high-risk behaviour of some of the sample was found in subjects' wanting to experiment with different patterns of behaviour, the process of identity formation, becoming independent and identifying with a social group. Individual factors such as level of knowledge of AIDS, the degree of moral censure attached to sex, sexual behaviour patterns and maturity, sense of responsibility and locus of control proved to be determinants of risk behaviour.

Tengani (1993), in a study of hostel dwellers throughout South Africa, found that the most urgent problems faced were poor living conditions, violence and crime, and lack of privacy and security. Responses to a question about what first comes to mind when thinking about AIDS included fear, danger, death/killer disease, terminal disease, and incurable disease. Although there was a high level of awareness of AIDS, little knowledge about the disease was evident, most being based on word-of-mouth accounts and incorrect information. Respondents claimed to protect themselves against AIDS by

sticking to one partner (although the study does not elaborate upon whether this partner is their partner from home or a partner near the hostel), using condoms (especially with sex workers), and using traditional herbal remedies. "Quite a number" admitted to not believing that AIDS exists or their partners not approving of them using condoms. Most respondents would cut ties with someone close to them who contracted AIDS (whether brother, friend or colleague), mainly because the disease was infectious. Respondents agreed that "homosexuality" was practised in the hostel, but that this had decreased since women were allowed into the hostels, and most people now relied on commercial sex workers to "alleviate this problem".

The studies cited above refer to contextual and social concomitants which affect access to knowledge, influence attitudes, beliefs and intentions, and predispose behaviour. Perkel *et al* (1991, p.151), in a study of 668 university students, also alluded to the importance of the social context, individual personality dynamics, and locus of control in determining susceptibility to risk behaviour:

. . . people's defensive styles serve the purpose of containing anxiety that may emerge at both conscious and unconscious levels. They also appear to provide compensatory mechanisms for underlying inadequacies and conflicts. In this regard, the association of self-concept to a number of variables appears relevant. For example, those with a low self-concept in the area of sexuality are more likely to have had sex, are more likely to have had sex with someone other than their regular partner, and more likely to have an unsafe sex score. They are also less likely to have good knowledge about AIDS and more likely to have a negative attitude to the use of condoms. Poor self-concept also links to a lower likelihood of behaviour change in the area of sexual practices.

Poor self-esteem was also associated with high repression and rationalization mechanisms, a higher level of denial and therefore lower perceived personal risk. An

external locus of control also seemed to be linked with a low self-concept (Perkel *et al*, 1991).

Although this review of studies in South Africa and other countries is a cursory one, the similarities in results are important. There seems to be evidence of behaviour change in places where people have access to information and perceive themselves to be at some risk, especially where the epidemic is more advanced. Knowledge is an important factor needed for behaviour change to take place, but knowledge alone is not adequate for behaviour change. Although efficacy and perceived vulnerability are important in determining behaviour change, there seem to be other factors which are equally as important. Social concomitants (such as level of education the person has been exposed to, cultural norms, and access to good health care and resources) act as barriers or reinforcements to behaviour change. Personality dynamics and locus of control also seem to play an important role in determining whether people will intend to change their behaviour, or be able to put intentions into behaviour. The remainder of this chapter will address the theoretical constructs of health protective behaviour and assess whether there is indeed a model which is directly applicable to the developmental and social context of a South African sample.

2.2 Models of Health Behaviours

By the late 1980's three models or frameworks had been predominantly used to understand and predict health-related behaviour: the Health Belief Model (HBM), the Theory of Reasoned Action (TRA), and PRECEDE, which is an acronym for predisposing, reinforcing and enabling constructs in educational diagnosis and evaluation (Mullen, Hersey & Iverson, 1987). All these models involve the questionable assumption that action is based on a reasoned process, and also fail to deal with the fact that behaviours may well be health-related, but not necessarily carried out because of their health implications (Hunt & Martin, 1988). More recently, models have been developed specifically to address behaviours relating to HIV transmission. These models are often complicated by the multifaceted nature of HIV/AIDS and

attempt to take into account the complexities of sexual behaviour. The AIDS Risk Reduction Model (ARRM) aims to understand why people fail to change, in order to gear intervention programmes to a specific stage of the change process (Ford, Wirawan & Fajans, 1993). It is based on the premise that, in order to avoid disease, people must perceive risk, reach a decision to make behavioural changes, and take action (Coates, 1990). Because the HBM and TRA provide the framework (or, at least, the starting point) upon which many subsequent models have been developed, the broad components of these models and some of their derivatives are discussed below.

Beck and Frankel (1981) attempt to identify key issues in explaining health threat communications. Contrary to the basic parallel model of Leventhal (1970; in Beck & Frankel, 1981), findings suggest that while health threat can arouse emotions, such reactions abate rapidly and bear little direct relation to subsequent coping-behaviour. The effects of fear seem to be mediated by other cognitions such as appraised severity of the threat, and the perception of threat appears to be a necessary but insufficient condition for coping behaviour. One also needs a plan of action that is perceived to be effective, and those at risk appraise a recommended action plan in terms of its perceived utility in responding to the threat (referred to as response efficacy by Beck & Frankel) and of their ability to perform the action (personal efficacy). These elements form the basis of the cognitive models of health behaviours which attempt to identify the factors that can be used to predict behaviour change and risk prevention behaviour.

2.2.1 The Health Belief Model

The Health Belief Model (HBM) was developed in the 1950's by Hochbaum and associates in the United States as an attempt to understand the American public's low compliance with preventive and screening requirements. It has been applied to a wide variety of health threats, for people who are at possible risk of becoming ill, or those who are ill already (Harris & Guten, 1979; Janz & Becker, 1984; Kotarba & Lang, 1986; Mullen *et al*, 1987; Kirsch & Joseph, 1989; Montgomery, Joseph, Marshall,

Becker, Ostrow, Kessler & Kirscht, 1989; Johnson, Ostrow & Joseph, 1990). The HBM is largely derived from decision-making theory in which human behaviour is viewed as being dependant upon two primary variables: the value that someone places on a particular outcome and his/her belief that a given action will result in that outcome (Kotarba & Lang, 1986). When these variables are placed within the context of health-related behaviour, the correspondences are: (1) the desire to avoid illness (or if already ill, to get well); and (2) the belief that a specific health action will prevent or alleviate illness (Janz & Becker, 1984).

According to Janz and Becker (ibid), the following dimensions are incorporated into the HBM. **Perceived susceptibility** - This refers to a person's subjective perception of the risk of contracting a condition, or of personal vulnerability. **Perceived severity** - This includes evaluations of both medical consequences and possible social consequences. **Perceived benefits** - This is hypothesised to depend upon beliefs regarding the effectiveness of action in reducing the health threat. **Perceived barriers** - The potentially negative aspects of a particular action may act as obstacles to undertaking the recommended health-protective behaviour (ibid). The individual is thought to weigh the action's effectiveness against perceptions that it may be costly in financial terms, it may be dangerous, inconvenient, time-consuming etc. Furthermore, some stimulus is necessary to trigger the decision-making process. This may be internal (e.g. symptoms) or external (e.g. mass media messages, interpersonal interactions etc.). The model also assumes that diverse demographic, sociopsychological and structural variables may affect the person's perception and thus indirectly influence the health-related behaviour.

Janz and Becker (ibid) present a summary of 46 studies of the HBM that provide substantial evidence supporting HBM dimensions as important contributors to the explanation and prediction of individuals' health-related behaviours. However, these findings are restricted to the psychosocial and demographic concomitants of health behaviour. Many of the studies described by Janz and Becker (ibid), and by Becker in an earlier study (1974) are concerned with health behaviours that are different from

those required in response to AIDS (e.g. participation in screening programmes, seeking immunization, taking medicines). What sets AIDS aside is the fact that there is no cure, that this constitutes a considerable threat to life, that there is a latent incubation period in which the carrier of HIV is not perceptively ill, and the need for behaviour changes which are both recurrently practised and socially complex (Montgomery *et al*, 1989). In their review, Janz and Becker (1984, p.44) allude to similar complexities, although not in the specific context of AIDS:

It is clear that other forces influence health actions . . . (1) some behaviours (e.g., cigarette smoking; tooth brushing) have a substantial habitual component obviating any ongoing psychosocial decision-making process; (2) many health-related behaviours are undertaken for what are ostensibly *nonhealth* reasons (e.g., dieting to appear more attractive; stopping smoking or jogging to attain social approval; and (3) where economic and/or environmental factors prevent the individual from undertaking a preferred course of action (e.g., a worker in a hazardous environment, a resident in a city with high levels of air pollution).

They also consider what amounts to the central challenge to cognitive-based theories by modern proponents of the developmental⁶ and environmental influences upon decision-making. The HBM presumes that "health" is a highly valued concern or goal for most individuals, that "cues to action" are prevalent, and where these conditions are not satisfied the model will no longer be relevant in explaining behaviour (Janz & Becker, 1984).

Green developed a derivative of the HBM in the early 1970's (Mullen, Hersey and Iverson, 1987). The so-called PRECEDE (predisposing, reinforcing and enabling constructs in educational diagnosis and evaluation) model also focuses on health

⁶ "Development" is referred to in this study as representing socio-economic contextual resources, such as sanitation, housing, adequate roads, water, etc.

behaviour but differs from the HBM in the consideration of pre-behavioural factors, which include (1) predisposing factors or prior motives such as knowledge, attitudes, beliefs, values and perceptions that support or inhibit behaviour; (2) enabling factors which are objective characteristics of an individual, community, and environment that facilitate action on behaviour; and (3) reinforcing factors which include social rewards or punishments consequent to a certain behaviour. Thus this theory attempts in a way to reconcile the standard HBM with Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA), which also takes into account perceived barriers. There have been very few studies which investigate the accuracy of Green's theory in determining human behaviour and the comparative study by Mullen *et al* (1987) will be discussed after considering the mechanics of the TRA in the next section.

2.2.2 The Theory of Reasoned Action and other models

The Theory of Reasoned Action (TRA) was developed by Fishbein and Ajzen (1975) and is based on the assumption that humans are reasonable beings who systematically process and use all the information available to them when determining the course of behaviour. The emphasis in this model is on the person's beliefs and intentions (Fishbein & Middlestadt, 1989; Valois *et al*, 1988; Weinstein, 1988; Mullen *et al*, 1987). The intention to perform or not perform a behaviour is determined by (1) his/her attitude toward the behaviour and (2) his/her perception that others who are significant to him/her think that s/he should or should not perform the behaviour (Valois *et al*, 1988). Mullen *et al* (1987) describe the model as seeing behavioural intention as a function of *attitude* toward performing a behaviour and *subjective norms*. Attitude is a function of beliefs about the consequences of the behaviour weighted by an evaluation of the importance of that attribute, and subjective norms are a function of expectation by significant others weighted by motivation to conform. As with the HBM, demography, personality, and other social variables are expected to influence intention only through the other components of the model. The model is thus based almost entirely on a rational cognitive process, and does not attend specifically to fear drives or other emotional elements as do other models.

Mullen *et al* (1987) refer to field studies which found that behavioural intention does predict behaviour, particularly within a short time-frame and with clearly specified intent. "From this it seems that intention is a better predictor of behaviour than attitude, but attitude's effect on behaviour is not completely mediated by intent" (*ibid*, p.974). Valois *et al* (1988) compared the efficiency of the Fishbein and Ajzen model with a TRA derivative, the Triandis model. The Triandis model specifies that the likelihood of performing a behaviour is a function of (1) the habit of performing the behaviour, (2) the intention, and (3) the facilitating or harmful conditions. This third factor is constituted by the social norm. The comparison helps to highlight the bipolar nature of the affective and cognitive aspects, and the attempt to quantify the social component in the TRA. These aspects, when applied to behaviours relevant to AIDS prevention, will be shown to be problematic later in this chapter.

The Triandis model introduces habit as a factor, but the Valois *et al* (1988) study shows that theorists need to distinguish between those habits that require a thoughtful process (such as exercise or habitual lovemaking) and actions which can be performed without attentive thinking (such as lighting a cigarette or wearing a seat belt). Thus, where a concerted "will" is required, they propose that habit does not exert a direct influence on behaviour but plays a mediating role between intention and behaviour. This is a distinction that is merely attributed to mediating or barrier factors in both the TRA and HBM.

Mullen *et al* (1987) provide a comparative study of the HBM, TRA and PRECEDE. The study, completed over eight months, compared the ability of the three models to predict changes in smoking, exercise and consumption of sweet and dried foods in a sample of 326 adults. *Initial behaviour* was a strong indicator of behavioural stability, particularly with regard to behaviours with addictive elements such as smoking. *Demographic characteristics* such as age, gender and ethnicity were found to be important predictors of health behaviour over and above the components of the models, contrary to the theoretical assertions of the HBM and TRA. When discussing the importance of these models to AIDS-related behaviours, the importance of this finding

becomes marked. With regard to *susceptibility*, they found that personalization of consequences may be an important influencing factor. They further found that the degree of health concern and awareness of the *benefits* of actions predicted a subsequent decrease in health-risk behaviours. *Barriers* to change include both enabling factors and perceptual barriers. While these did not directly predict behaviour change, the authors thought that concern with barriers, accessibility, and enabling factors is likely to play a role. *Self-efficacy* was found to be a key predictor of behaviour change, and, consistent with Bandura's principle of specificity (in Mullen *et al*, 1987), confidence in their own ability to make changes, rather than a more general sense of control over their own health, was a better predictor of positive behaviour change. *Behavioural intention* was a powerful predictor when the time-frame and dependant variable conformed to the TRA guidelines. Thus if motivated by awareness of health consequences and supported by confidence in ability to put intentions into action, an individual's intention predicts later action. Finally, *social networks* appeared to play a role in changing health practices, and subjective norms and beliefs about the social consequences of the behaviour were not direct predictors of changes in behaviour.

Mullen *et al* (*ibid*) thus showed that all three models have components that predict behaviour change, and are in fact complementary, while there are some problems with the acceptability of the weighting variables in the TRA. The HBM could also be improved by adding behavioural intention, self-efficacy, and social network.

Protection Motivation Theory (Rogers, 1975; in Beck & Frankel, 1981) also assumes that emotional arousal is less important than a person's cognitive appraisal of a threat. Protection Motivation Theory predicts that people will most likely take health protection advice when they can be convinced of the seriousness of a health threat and their susceptibility to it, as well as being persuaded that recommended actions will enable them to avoid the threat (*ibid*). Actions entailing risk are increased by virtue of associated rewards and decreased by perception of severity of threat. Actions to decrease risk are strengthened by response-efficacy and self-efficacy, and are diminished by response costs. According to Rogers (*ibid*), the level of protection

motivation is expected to predict intention to take action (Kirscht & Joseph, 1989). Thus if self-efficacy is high enough, higher levels of intention to act are generated, even if susceptibility and benefits are not high, reflecting a "precautionary" stage (ibid).

Weinstein (1988) discusses the limits of the HBM, TRA and Rogers' protection motivation theory. Limitations shared by all three include: (1) They assume that the relative probability of action is an algebraic function of the individual's beliefs, and this implies that nothing changes during the entire precaution adoption process except the *values* of the variables in the equation. The origin of the beliefs and the possibility that they have implications for other behaviours (e.g., information seeking) that can alter the response lies outside the scope of these theories. (2) They (with the possible exception of TRA) focus on a single threat and single preventive response. The context is disregarded.

2.2.3 Application to HIV/AIDS-related behaviours

Fishbein and Middlestadt (1989) believe that interventions based on the HBM will often be ineffective because one cannot assume that all health beliefs are relevant for all health behaviours. One should rather change or reinforce salient behavioural beliefs and/or their evaluative aspects, and since attitudes and subjective norms are based upon sets of beliefs, one needs to change the evaluative or normative implication of the underlying cognitive structure. Thus behaviour change is brought about by changing the corresponding intention, which is in turn created by changing the corresponding attitude and/or subjective norm, which is ultimately altered by changing a set of beliefs. This is the linear cognitive restructuring advocated by the TRA in its usefulness for HIV prevention and AIDS risk reduction. Susceptibility and severity, included in the HBM, are regarded as "external" variables within the framework of the TRA. Susceptibility and severity will influence behaviour only if (a) either attitudinal or normative considerations are influenced and (b) the component influenced is an important determinant of the intention in question.

Wilson, Zenda and Lavelle (1992) concede that models such as the HBM can help improve the effectiveness of AIDS education. They refer to criticisms of the HBM; that it is incomplete in its formulation as an expectancy-value model (Montano, 1986; cited in Wilson, Zenda & Lavelle, 1992) and that it explains AIDS-related behaviour change less adequately than other health threats (ibid; Montgomery *et al*, 1989), echoing the concerns of Janz and Becker (1984). A recent Zimbabwean study found that the HBM displayed a modest capacity to predict HIV-preventive behaviour and concluded that alternative models, such as that of Fishbein and Ajzen's (1975) Theory of Reasoned Action, should be examined (Wilson, Lavelle, Greenspan & Wilson, 1991; cited in Wilson, Zenda & Lavelle, 1992). The capacity of the HBM and TRA to predict women's capacity to tell their partners to use condoms was tested in late 1990 in Harare (Wilson, Zenda & Lavelle, 1992). Attitude toward behaviour was significantly associated with intention to tell one's partner to use condoms, but subjective norm was not, indicating that health educators should attempt to modify women's underlying beliefs and expectations about the benefits of telling their partners about condoms (ibid). These studies are important indicators of the usefulness of theoretical models that have been largely determined through research in First World countries. However, whether this usefulness can be extended to adopting such models to formulate the premise of interventions is another matter. Even campaigns in Europe and the USA have been criticised because of their theoretical basis in models such as the HBM, the TRA, Rogers' Protection Motivation Theory, and other models that rely on cognitive processes that are based in decision theory.

The AIDS Risk Reduction Model (ARRM) attempts to reconcile cognitive models such as the HBM and TRA with the complexities of sexual behaviour (Ford *et al*, 1993; Catania, Coates, Kegeles, Ekstrand, Guydish & Bye, 1989). The ARRM is based on the premise that to avoid disease, individuals must perceive that their sexual behaviour places them at risk, reach a firm decision to implement preventive behaviour, and take action (Coates, 1990). This is a linear process that, once again, relies on rational thinking on the part of the individual. Changing behaviour may require deciding if the behaviours can be altered and whether the benefits of doing so outweigh the costs.

Skills training is central to the model, and may include community interventions, as social and community norms influence each step in the behaviour change process (ibid). Although this model does seem to be comprehensive in incorporating the rational individual cognitive processes as well as the possible barriers to such rational decision-making, as a theoretical model it is susceptible to the same criticisms that are aimed at the HBM and TRA.

Cleary (1987; cited in Kirscht & Joseph, 1989) points out that the traditional models reflected in this chapter have trouble dealing with the complexity of AIDS, and that cognitive models of health behaviour may not encompass the key factors involved or the affective meanings of the relevant concepts and behaviours. Yet these models have been and still are at the roots of major HIV/AIDS intervention campaigns throughout the world, as can be seen by the literature reviewed in the first section of this chapter. Such campaigns and interventions, unlike those participative intervention-based studies discussed by Kelly, Murphy, Sikkema and Kalichman (1993), rest on the assumption that correcting false beliefs and misconceptions will enable any "rational" person to alter his/her behaviour.

Ingham, Woodcock and Stenner (1992) point out methodological errors in this argument, referring to the ambiguous use of questionnaires and variables, and the assumption that the concept of "rationality" is appropriate for the understanding of sexual behaviour, thereby questioning the implicit link between beliefs and related behaviours. Ingham (1991) uses the findings of studies conducted with British youths to question the assumption of people behaving rationally. He comments on other studies done with youths which have shown that general knowledge regarding transmission, the seriousness of the condition, and other aspects is high, and that estimates of the effects of HIV are pessimistic, with Abrams *et al* (in Ingham, 1991) finding that young people believed that 50% of their peers would die of AIDS-related conditions within ten years. Despite this high knowledge, perceived seriousness, as well as a high level of knowledge regarding the efficacy of prevention mechanisms,

very few perceived themselves to be vulnerable at all, and even fewer reported having adopted protective modes of behaviour.

Ingham (1991) extends this argument to the notion that knowledge is sufficient at present, but practical social skills training is needed (e.g., negotiation skills or assertiveness training). Whilst acknowledging the need for such training, he criticises the approach as still resting upon the notion of rationality, with people now arriving at a set goal through a reasoned process, but with practical help in achieving the goals.

2.3 Critiques of models of health behaviour

Ingham *et al* (1992) identify seven impediments to the acceptance of the notion of rationality:

(1) *Perceived invulnerability* refers to people denying the risk, optimistic bias, having a greater fear of other problems, a dismissal of advice due to it being perceived as impossible or impractical, and rejection of risk to HIV because life is seen as being full of risks. Perceptions of and attributions about partners also play a role here. Weinstein (1989) refers to the attribute of personal susceptibility which is included in almost all the major theories of health behaviour. Given the ambiguity of subjective and objective risk, people tend to show a consistently optimistic bias, believing that their own susceptibility to harm is less than that of their peers. He provides evidence of defensive denial in people who attempt to avoid anxiety, and preservation of self-esteem through claiming they are at less risk.

(2) *A range of understandings about terminology* exists, with ambiguous messages being interpreted in varying ways. An example is the official advice to "know your partner", used in Britain and also in the South African prevention campaign. Ingham *et al* (1992) found that the concept of "knowing" rarely coincided with the official meaning contained in prevention messages.

(3) *Positive reasons for non-rationality* are found where people know the "appropriate" course of action, but find reasons why the advice could, or should, not be followed. Ingham *et al* (ibid) report that reputational issues featured prominently, together with the possible effects on the relationship, fear that knowing too much would be a "turn-off", and the fear of distrust due to revealing of secrets and behaviours from previous partnerships being replicated with others in the future. These explanations are rational within the framework of the respondent's own positions and/or understandings.

(4) *External and internal pressures* have a powerful effect on the rational decision-making process. Locus-of-control theory was developed by Rotter (1966, cited in Kotarba & Lang, 1986), who argued that long periods of exposure to uncontrollable reinforcement may lead an individual to believe that s/he is helpless (Kotarba & Lang, 1986). Some people believe that what happens to them is largely attributable to external forces which are beyond their control, and others believe that internal forces, or their own decisions, determine their circumstance. Research into homosexual attributes with reference to locus of control show that many homosexuals feel their sexuality is beyond their control, a force of nature, and is therefore external (Altman, 1982; cited in Kotarba & Lang, 1986). Perkel *et al* (1991) refer to a variety of personality variables which influence behaviour in young university-attenders, including poor self-concept and an external locus of control. Perkel (1992) substantiates this with his model of psychosocial mediation which takes cognisance of a psychological profile which appears to exist, whereby lower sexual self-concept correlates with higher defences of denial, repression and rationalisation, a greater susceptibility to peer pressure, and an external locus of control and poor self-efficacy. This profile was found to influence the degree to which knowledge was acquired, as well as a tendency to rejecting condom-usage and a higher incidence of unsafe sexual behaviour. Ingham *et al* (1992) refer to external pressures, such as peer and media pressure, being internalised and adopted. Cultural and religious norms can play an important role.

(5) *Ideological and power issues* complicate the "rational" decision-making process, particularly gender-related stereotypes and power differences. These are discussed in

more detail in Chapter 3. Ingham *et al* state that "the limited extent to which such discourses are available for subjective analysis poses a serious challenge to the concepts of rationality and individual decision-making contained in the models of health behaviour mentioned earlier" (1992, p.14).

(6) *The mystique of sexual behaviour*. Ingham *et al* (1992) refer to different social constructs of sexual activity that emerge from their research. Some are based on moral conceptions, some on the notion of natural and spontaneous behaviour, and the majority contain a central essence involving "mystique". This would seem to include the taboos on openly discussing sexual matters which is evident within many African societies, avoidance of the topic by parents, the embarrassment of teachers, and the use of coy language and euphemisms in the media, by adults and in relationships. All this makes the negotiation process necessary for rational sexual decision-making very difficult. Furthermore, it gives people "permission" to behave irrationally, blaming irrational behaviour on mysterious uncontrollable urges. Ingham *et al*, 1992, p.16) dwell on this matter:

It is in the consideration of this topic that we can begin to map out a possible role for the concept of 'rationality'. Rather than regarding it as an inherent 'property' of individuals . . . we should regard it as an option. In other words, people can choose to be rational or not . . . It is . . . subject to the proviso that we may be (and often are) called to account for our behaviour. The social contexts in which such accounting, or warranting, takes place, as well as the nature of what is being accounted for, determine the context to which 'rationality' is an acceptable justification for actions both for others-as-audience and for selves-as-audience.

Therefore regarding rationality as an option rather than in terms of specific bio-medical and health preserving actions (as with the costs and benefits approach in many

cognitive models of health behaviour), greater priority should be afforded to the importance of reputations and identities within social worlds.

(7) The final impediment to the notion of "rationality" provided by Ingham *et al* (1992) is that of *negotiating and joint decision-making*. In their research, negotiation around safer sexual practices tended to be based on assertion, and was often concerned with the avoidance of conception rather than avoidance of infection. Often this responsibility lay with the woman and remained unspoken-of and hidden.

Ingham (1991) does, however, admit that some decisions follow some sort of rational process, and in offering an explanation of how this seemingly dichotomous position can be justified, refers to the writings of Harre, Clarke and De Carlo (1985) and Harre and Secord (1978, cited in Ingham, 1991), in which they encourage a shift away from a model in which external factors interact with internal cognitions (at different levels of consciousness) to produce a behavioural outcome, to one which places greater emphasis on the notion of "human agency". The model purports a change of human passive receptor to human as an active agent with the potential to choose from a range of options. Social interactions become a key issue, and social worlds are associated with a rule structure which govern not only what is required to have our behaviour understood in "rational" terms by others, but also what it requires to be "justifiable" to others, where our behaviour is accepted according to a code of conduct or set of religious, social, moral, or cultural rules. Although there is still the notion of choice, attention is drawn to those areas where there is little or no choice. Rationality can thus be distorted by internal and external factors, but also vary across different social worlds. Thus a homeless person with mouths to feed will have a separate set of rational "rules" to someone who is a well-resourced and employed behavioural scientist. Ingham (1992, p.14) concludes by referring to the need for considering sexual behaviour differently:

. . . I propose that we need to learn some lessons from the so-called new social psychology by considering in more detail the various ways

in which people relate to the very concept of 'rationality' itself, the nature of the internal and external constraints and powers which inhibit or encourage the adoption of certain behaviours, and the nature of those societal discourses which may prevent some people from even knowing what the issues are. Variations in these domains will not simply be accountable in terms of individual differences (or even group differences), but in terms of social worlds, domains of relevance (for example, the same individual may behave quite differently in some behavioural domains as in others), and so on.

Hunt and Martin (1988) criticise cognition-based models of health behaviour because of the questionable assumption that action is based upon a reasoned process. They the models' failure to deal with the fact that behaviours may be health-related, but are not necessarily carried out *because* of their health implications. They propose a model of behaviour that takes into account the relegation of habitual behaviour to lower levels of consciousness, and the process of "selective perception" whereby the individual's implicit "world of meaning" has an impact on what type of information gets through to higher consciousness. They postulate that whether or not behavioural change will ensue subsequent to alterations in awareness and perception, will depend upon (1) the climate of opinion - that change may be desirable; (2) the opportunities and support for carrying out alternative behaviour; (3) the length of time the behaviour remains in focus; (4) the role of the behaviour in the coping strategies of the adoption process - e.g., the consoling and stress-reducing effect of smoking; and (5) the adaptation pressures to which the person is already subjected and degree to which coping strategies are already taxed. This would explain why people in under-resourced and impoverished circumstances are the least susceptible to health education messages - they are already taxed to the limit of their coping capacity.

The elements contained within this model meet some of the criticisms highlighted by Ingham (1991), by attempting to combine internal cognitive processes with the social context in which the individual is caught up. The elements of (1) raising facets of

behaviour into cognitive focus, (2) allowing for environmental operations, and (3) taking an interactionist perspective, may be combined to account for the role of training in changing behaviour, thereby providing some rationale for the success of programmes described by Kelly *et al* (1993). Some important postulates are provided by Hunt and Martin (1988, p.277), which could be applied and tested in HIV prevention. Those that are pertinent include the following:

It will be easier to make a change involving the cessation of some activity when a substitute activity is taken up (e.g., stop smoking, start snacking) . . . it will be easier to relegate a new activity to routine level when it can be built into the flow of daily life . . . behaviours easiest to change and maintain will be those involving a qualitative move (e.g., a change from white to wholemeal bread) . . . individuals whose lives involve many problems, high uncertainty and relatively few available coping strategies will be the least likely to change . . . changes will tend to occur after events and processes which disturb in some way the fabric and consistency of everyday life.

Williams and Lund (1992) distinguish between *active* and *passive* measures to reduce risks. Passive measures are those that protect people automatically, without any deliberate action on their part, through the modification of products or their environments, e.g. breathalyser governors on motor vehicle ignitions that will only allow the car to start if the driver is below the legal limit. Active measures require deliberate individual choice and action, e.g. the decision to obey a traffic light late at night. Historically, the most important health gains have been through the implementation of passive measures at the community level (*ibid*), rather than through active measures. The advantage of passive measures is that they apply to virtually everyone once they are in place. A passive measure would not require even the cognitive decisions attributed to "routine" behaviours discussed in Hunt and Martin (1988), for the passive measure removes the need for the subject to actively bring the desired or required activity into awareness. Thus there is no need for a rational

decision-making process. However, it is very difficult to think of any passive measure which could be applied in the case of HIV prevention.

Drunk-driver campaigns and other public risk-reduction campaigns have provided evidence of the effectiveness of behaviour change campaigns that do not rely on *persuasive* means. For example, implementation of stringent legal procedures to reduce drinking and driving have been more effective than those relying on personal persuasion through the media (Williams & Lund, 1992). Again, it is very difficult to imagine any kind of effective legislative control over aspects of behaviour as intimate and secretive as sex. Some ineffective attempts have been made to legislate against the practice of prostitution or homosexuality, which seem only to have exacerbated the AIDS crisis. For these reasons, many of the risk control procedures which have been effectively implemented in other areas seeking to reduce health risks in the population, are not readily applicable to the reduction of the HIV risk. The passive and *non-persuasive* means of reducing health risks support structural rather than individual-oriented interventions. Kelly *et al* (1993) emphasise the necessity of going beyond interventions at an individual level, to encompass interventions at the population level. This is congruent with findings (Mullen *et al*, 1987; Kelly & St. Lawrence, 1988) that peer norms influence the intention to change behaviour. Hunt and Martin (1988) argue that a change in peer norms results in the behaviour being brought to the forefront of consciousness, e.g. a smoker moving to an area where smoking is seen as unacceptable will be increasingly aware of this when he/she lights up in the presence of others. The emphasis on social conditions and peer norms raises the question of whether campaigns addressing individual paths to cognitive decisions are as effective as those that address decisions through community interventions.

Frank, Bouman, Cain and Watts (1992, p.1049) argue that

recognition of multiple determinants and the gradual nature of behavioral change including assessment of the individual's current behaviour, beliefs, social support, and alternative responses, as well as

the maintenance of the behavior, are essential steps. . . . psychologists must look beyond individual interventions and recognize the importance of community and public policy.

Aggleton (1989) also criticises the assumption that people are rational decision makers and the information-giving and health education models that arise from cognitive theories of health behaviour. He refers to alternative strategies involved in health education and considers their suitability for AIDS prevention. Prevention strategies are the practical interface between theories and their implementation. **Self-empowerment** models of health education provide opportunities for people to clarify what they *know* about an issue, to distinguish this from what they *feel* about the issue, and then to consider the intrapersonal, interpersonal and social barriers to behaviour change. The aim is to develop skills, understanding and awareness so that people can act rationally. However, Aggleton (1989), like Ingham (1992) and Hunt and Martin (1988) above, questions the individualism and rationality inherent in such an approach. **Community-oriented** models have arisen as a consequence of the criticisms of rational cognitive models. Community-oriented styles of education do not regard the individual as being responsible for his/her own health and suggest that people should act collectively to satisfy their health needs. Obstacles to the satisfaction of health needs may lead to an identification of resource issues that need to be addressed, political interventions that need to be made, and issues that need to be challenged. Thus it may lead to people needing to challenge the pervasive inequalities of power in society. This leads to the start of a **socially transformatory** model which seeks to enhance health and well-being by bringing about far-reaching social change. ACTUP (AIDS Coalition to Unleash Power) is a good example of an organisation that adopts such a strategy, and is now active in many countries throughout the world.

It is clear that information-giving approaches are inadequate when used alone. However, the individual's cognitions and the mechanisms which constitute information processing are important factors in successfully changing health risk behaviours. At the same time we cannot assume that people adopt cognitive processes which are rational,

especially when dealing with "routine" behaviours which, according to psychophysiological theory, are consigned to lower levels of cognitive functioning (Hunt & Martin, 1988). Models of behaviour that are based on rational cognitive pathways include elements which have been shown to be relevant to HIV risk behaviour. Kelly and St. Lawrence (1988) list aspects of effective education messages regarding health as conveying that (a) the health threat from engaging in risk behaviour is great; (b) the person engaging in these activities is personally vulnerable; (c) behaviour change can successfully reduce risk; and (d) the benefits of making the change outweigh the costs of failing to change. However, they also emphasise that cognitive knowledge, while necessary, is insufficient for effective behaviour change, as behaviour and risk assessment are influenced by other factors, including the person's ability to accurately estimate the risk involved; expectations that the change desired can be successfully undertaken; coping with antecedents that might otherwise trigger the health risk behaviour; the presence of cues and prompts to make and maintain the desired change; and ongoing environmental and social supports or barriers to adopting the desired behaviour.

When considering the emphasis on human rationality which is inherent in most models of health behaviour, it is possible to criticise them for assuming linear and rational pathways to cognitive decision-making. The models which have been constructed in an attempt to explain and inform behavioural processes prove to be too individual, and fail to take adequate account of the importance of social and interactional factors which influence behaviour. Models such as the HBM and TRA, and those that try and apply the variables within the HBM and TRA to AIDS-specific risk behaviour, do include contextual and interactional influences that act upon human cognitions, but tend to reduce the magnitude of such influence to parts of a linear cognitive pathway, when, in certain environments and social contexts, such influences are paramount in determining the outcome of individual behaviour.

CHAPTER 3

INVESTIGATING THE CONTEXT

The discussion thus far has provided an overview of studies regarding at-risk and general populations in South Africa, and elsewhere in the world. An investigation of some major theories of determinants of health protective behaviour has included some of the criticisms of those theories. Such theoretical models have trouble dealing with the complexity of AIDS, and furthermore, cognitive models of health behaviour may not encompass all the key factors involved such as: perceived invulnerability, non-rationality, external and internal pressures, ideological and power issues and the influence of routine behaviours and the affective meanings of the relevant concepts and behaviours. Yet these models have guided, and still do guide, major HIV/AIDS intervention campaigns throughout the world (as can be seen by the emphasis placed on increasing knowledge, whilst neglecting the social, developmental and contextual factors that cause and maintain HIV spread). Although there is widespread acknowledgment of the threat of HIV/AIDS, a perceived seriousness of the threat, as well as a high level of knowledge regarding the efficacy of prevention mechanisms, many local and world-wide studies have indicated that few perceive themselves to be vulnerable, even fewer report having consistently adopted protective modes of behaviour, and many are unable to adopt health-protective behaviours even if they want to, due to disempowerment (Kelly *et al*, 1993). In this chapter some issues which are dismissed as "barriers" and "cues" to behaviour (Coates, 1990; Hunt & Martin, 1988; Mullen *et al*, 1987) in linear cognitive models of health behaviour, are discussed.

3.1 Social and cultural contexts

The behavioural norms and "culture" of groups of people can be seen to have cardinal influence in determining human behaviour and decision-making, and are included in

the TRA as significant factors influencing the beliefs and attitudes that impact on the decision-making process (Mullen *et al*, 1987). Caldwell, Caldwell and Quiggin (1994b) question the assumptions made by many researchers who adopt a Western world view, and who judge any digression from the norms inherent in such a world view as "deviant". They argue that the distinct and coherent African system is no more right, wrong, progressive or unprogressive than the Western system. They identify typical characteristics of the African system as being: one that places great emphasis on the importance of ancestry and descent; a social system that places greater importance on intergenerational links than on conjugal ones; one that gives great respect and power to the old; one that places emphasis on fertility where virtue is related more to success in reproduction than to limiting partners; a system with a typically weak marriage bond, with spouses maintaining strong lineage links and with marked spousal separation of economic activities and responsibilities; a system where a family is usually measured as the mother and her children forming the unit; and a system which requires that sexual behaviours are influenced by abstinence after childbirth, an abstinence which might extend to years. Caldwell *et al* (1994b, p.159-160) conclude from a wealth of anthropological research throughout Africa:

the sub-Saharan African population is not a morally backsliding Eurasian population that can be returned by exhortation and educational campaigns to a pattern of sex occurring predominantly within marriage. Indeed, aggressive and badly targeted campaigns could severely undermine social institutions, hurting in particular the position of women and some of the most socially marginal groups. And they will not always be successful, partly because many African societies admire risk-taking . . . and partly because many of the less literate have alternative explanations for venereal disease, which are easily transferable to AIDS, in terms of extrahuman forces and witchcraft.

Croteau, Nero and Prosser (1993) describe the ways that social and cultural contexts can affect HIV and AIDS prevention behaviour. Firstly, misinformation (with negative

connotation) about the sexuality of cultural others is a barrier to effective prevention efforts. Historically, myths about sexuality play a central role in the process of stigmatizing specific cultural groups. Referred to in the previous chapter, this is depicted by Janz and Becker (1984) as a barrier to perceived susceptibility, and by Mullen *et al* (1987) as a perceptual barrier, for the myths serve to remove vulnerability to a cultural group, class or sexual identity as *other*.

This is further exacerbated by the second issue identified by Croteau *et al* (1993), in which individuals in culture-specific groups may hold a variety of group-specific misconceptions about HIV and AIDS that act as barriers to effective prevention and change. Fishbein and Middlestadt (1989) attempt to address this by expressing the need to change the intention corresponding to the desired change, which is created by changing the correspondent attitude and/or subjective norm, which is ultimately altered by changing a set of beliefs. Misconceptions about condoms and condom-usage discussed in the review of KAP studies in the previous chapter are pertinent examples here (Du Plessis *et al*, 1993; Ratsaka & Hirschowitz, 1993; Tengani, 1993).

The third issue identified by Croteau *et al* (1993) refers to individuals included within multiple culture-specific groups (e.g. a Zulu-speaker who is also a woman, or a black gay person) often facing the added difficulty of multiple discrimination or stigmatization. There are numerous examples of women's inability to influence sexual decision-making, as depicted in many of the studies reviewed in the previous chapter (e.g. Orubuloye *et al*, 1994; Ratsaka & Hirschowitz, 1993).

Ingstad (1990) provides a good example of the impact that culture-specific perception and interpretation can have on protective behaviours. She discusses the way that traditional healers identify and categorize AIDS as either a common Tswana disease of "dirty blood" (which is therefore curable) or a modern disease that cannot be explained through traditional Tswana healer terminology (and therefore cannot be cured by means of traditional medicine or faith healing). This is echoed by Karim, Preston-Whyte, Zuma, Stein, Susser and Morar (1993) who refer to the belief among some

Zulu-speakers in KwaZulu-Natal that AIDS is a new name for an old illness, "*ilumbo*" which a male contracts if he has sex with another man's wife or partner. Since "*ilumbo*" can be treated and cured by traditional healers, so it is perceived that AIDS can also be cured in the same way. The "prevention because there is no cure" message upon which many anti-AIDS campaigns are based is thus rendered ineffective.

In a series of in-depth interviews and group discussions in townships near Paarl and Stellenbosch, Skinner (1994) investigated the different natures of "knowledge". Skinner challenges the assumption that knowledge is contiguous with scientific knowledge, for beliefs take up in the mind of the individual a rank similar to that of scientific knowledge regardless of their factual verity. A range of different conceptualizations was discovered, including differences in beliefs about the origin of AIDS, AIDS being treated as a joke or scare word, a perceived need for men to have more than one sexual partner, considerable peer group pressure to be sexually active, sex considered to be an integral part of any loving relationship, a large perceived power difference between men and women, unacceptability of condoms on cultural and personal levels, the general rejection of people with AIDS in the community, and a fear of being associated with AIDS. Skinner (1994, p.15) states that:

For many people they sketch it as a choice between worrying about AIDS or continuing their previous lifestyle of having many partners and enjoying unprotected sex. In most cases AIDS does not remain a comparable concern.

There is also the problem that many people deny the existence of AIDS: for example, they believe that if it is a reality then it does not exist within their communities; there is a sense of fatalism in which there is a perception that nothing can be done to avoid AIDS, and a personal denial where people avoid medical treatment when ill because they fear being diagnosed with AIDS. Skinner (1994) concludes that in addition to the alternative systems of knowledge that will count against changes in behaviour eventuating, the scientific knowledge itself is redefined and changed as it is accepted

and incorporated. Many of the issues are tied up with peoples' sexuality, so changes in sexual behaviour require changes in the way that people perceive themselves as individuals as well as within their self-perceived cultural framework.

Many black social scientists have attempted to determine the cultural barriers to education about AIDS in the black community in South Africa. Reasons given for failure to succeed in achieving behaviour change include: perceptions of AIDS as an apartheid-derived idea to discourage sex amongst blacks, the linking of AIDS to homosexuality along with denial of homosexual practices in the black community, the belief that traditional healers can cure AIDS, a tendency to blame AIDS on others, a lack of appropriate imagery and language (eg: no Zulu words for "virus" or "immunity"), overly dramatised and distorted reports in the media, a lack of understanding of the disease concept in terms of western medicine and an understanding of illness in relation to ancestral spirits and witchcraft, a discomfort with openly discussing sex, and some people believing that the condom could remain in the woman's body and suffocate her (Khosa, 1991; Nene, 1991; Setiloane, 1990; Zazayokwe, 1990). Misconceptions can often be more specific to certain languages and ethnic groups. For example, Karim *et al* (1993) describe how some people in KwaZulu-Natal believe that AIDS can be transmitted through casual contact, such as through sharing the same grass sleeping mat. This notion was likely communicated via educational efforts which used indirect references to sexual transmission to respect Zulu culture which does not allow the use of explicit sexual terminology.

3.2 Gender-specific issues

Women are identified as being at particular risk to HIV (Caldwell *et al*, 1994b; Karim *et al*, 1993; Barnett & Blaikie, 1992; de Bruin, 1992; Panos, 1990; Worth, 1989). Reasons given range from a biological predisposition that places women at greater risk of contracting the virus, to social disempowerment and the inability to make decisions about methods of contraception or when, where and with whom they will have sex. Examples of gender status impacting on increased vulnerability to HIV infection are

included in the research completed in KwaZulu-Natal by Karim *et al* (1993), where women mentioned that they would find it difficult to ask men to use condoms because men were sometimes drunk and sexual matters were seldom discussed within relationships; women found difficulty convincing men to reduce the number of partners they had and repeatedly expressed the need for clandestine methods that would serve the dual purpose of preventing pregnancy and protecting them from acquiring sexually transmitted diseases; the majority of women were financially dependent on their partners; many women believed (correctly) that men perceived vaginal wetness as relating to infidelity, and thus administered drying agents such as douching with antiseptics or inserting tissue paper prior to sex, all of which increases the chances of bleeding and HIV transmission.

De Bruin (1992) identifies other social and contextual issues making women more vulnerable to HIV. Because literacy rates and education levels of many women in developing countries are low, they are reached less effectively by anti-AIDS campaigns relying on printed materials. In addition, women often have less access to television or radio. In many countries, a woman's social position depends on her status as a mother. Childless women may seek out various sexual partners in an effort to become pregnant - a diagnosis of sterility being psychologically and socially unbearable. Moreover, infertility may cause a husband to divorce his wife; if she is unable to marry, she may eventually have to resort to sexual liaisons to obtain an income (*ibid*). A health care worker in Mozambique reported that some seropositive men seek out young virgins for sex because they believe that intercourse with an uninfected woman will rid them of AIDS because the girl takes it over. Reports of rape in sub-Saharan Africa are increasing and have been associated with such beliefs. Non AIDS-related sexual abuse, such as rape, incest and child molestation, in which the majority of sufferers are female, may constitute an increasingly important transmission route as general seroprevalence rates rise. A woman is often unable to leave an abusive relationship because she will lose her respect in the community and social status both in the family and the community (*ibid*). According to Worth (1989), sexual conquest is defined in terms of depositing seminal fluid, and thus manhood is also defined in

terms of the number of children produced. Sexual intercourse is often not much concerned with love or even sexual pleasure, it is often more concerned with physical subjugation, and if the woman resists it is likely to become rape or physical beatings (ibid). Social, economic, cultural and sexual subordination of women is a fact of life in African societies, which affects the basis of the decision-making process. The reality is that the men make the decisions about the sexual behaviour of women at family level, and retain their status as decision-makers all the way up to high levels of government.

3.3 Impact on theories of behaviour

Cultural beliefs and misconceptions can thus have an impact on personal behaviours. This is congruent with the emphasis placed on peer norms that enable or inhibit behaviour change within the Health Belief Model, and the importance of social mores and significant others in influencing perceived subjective norms within the Theory of Reasoned Action. Social norms and belief systems are in fact inherent in all the models of health behaviours reviewed in the previous chapter. It is the *significance* of social and contextual influences that is emphasised by those who challenge linear cognitive models of health behaviour, and its relationship with internal personality variables. Barnett and Blaikie (1992) discuss the prerequisites of coping with a threat. First, the event must be socially perceived and recognized as following a familiar pattern or as a novel event that can be related to pre-existing experience. Second, people make the assumption that the basis for decisions in the social, economic and natural environments will not have changed and that other people and the natural environment will behave in familiar ways. Thus one of the ways to cope with a threat is to try to explain it. It seems rational to cope with the AIDS epidemic by adopting health-protective behaviours, thus decreasing vulnerability. In order to do this, as pointed out in all rational cognitive models, information has to be translated into knowledge and then into action.

However, Barnett and Blaikie (ibid) argue that this is not an adequate account of how people deal with such risks, for most cope through a combination of rational and non-rational responses. People may not be acting irrationally (i.e. not breaking the chain of causality at some point) but may be acting in accordance with an explanation which differs from the "scientific" one espoused by anti-AIDS programmes. Such differing assumptions may be based on chance, witchcraft, morality and punishment. It is at this point that the cultural and religious belief systems are utilised by individuals to explain the threat in congruence with their own personality variables (perceived personal susceptibility, self-esteem, locus of control, etc.). Ingham *et al* (1992) refer to rationality as an option which may or may not be possible (as in the case of women not being able to make sexual decisions) or desirable (as in the case of a person deciding that the discomfort of using condoms outweighs the threat of acquiring HIV). Gender, age and locality will all influence the particular combination of explanations that individuals and groups draw upon in order to explain and cope (Barnett & Blaikie, 1992). The magnitude of the impact of under-resourced and impoverished circumstances on peoples' ability to act on health preserving messages becomes clear, for in such circumstances people are already taxed to the limit of their coping capacity (Hunt & Martin, 1988).

Preston-Whyte (1992) offers an explanation of culture that is wholly congruent with the social transformatory model advocated by Aggleton (1989) in the previous chapter. In order for social change to occur, culture cannot be seen as a static and unchanging entity. In discussing the plight of women in Africa and their importance in combatting the AIDS epidemic, Barnett and Blaikie (1992, p.163-164) state that

women's position is no longer 'traditional'. Indeed the characterization 'African civilisation' assumes a social and cultural stasis in Africa which does not reflect the immense changes that have been occurring . . . 'culture' is also an ideology - a set of ideas that defends the social and economic position of one group at the expense of another. . . . discussion of the nature of 'African civilisation' without reference to

the realities of contemporary social and economic relations does little to enable people to cope with a very serious set of circumstances such as those now existing on the African continent.

Preston-Whyte (1992, p.21) refers to the fact that culture can be interpreted as custom, a set of rules, or an ideational system. Culture is taught, but needs to grow and adapt to technological change. She states that

it is a failure to take seriously that ideas, values, rules and action form an interacting and dynamic system which leads to the failure of plans for introducing change.

In the case of AIDS, people are often driven to action not by choice but by circumstance. Factors influencing behaviour derive from the macro-social structure - such as poverty, a lack of health facilities, etc. - and micro-interpersonal interactions - such as the constraints imposed by cultural rules (Preston-Whyte, 1992). Both cultural mores and contextual deficits can be challenged through community empowerment models of change. A prosocial model ties combatting AIDS with the fight for an improvement in the economic and developmental status of deprived communities (de la Concela, 1989).

Poverty both creates conditions which facilitate the spread of AIDS and prevents an effective response to the epidemic as it restricts the range of choices available to people, including choices relating to their sexual behaviour (Smart, Webb & Fincham, 1993). People living in poverty have less access to adequate health care, STDs are widespread, they receive less and poorer standards of education, are less literate, cannot afford condoms or have less access to them, are forced to migrate to seek work, and tend to prioritize issues immediate to their survival such as food and shelter. Avoiding a disease which could manifest some years down the line is likely to be low on their list of priorities.

Structural empowerment is the reduction of economic dependence (eg. on men). This empowerment is essentially a development issue, and would include income-generating schemes, expansion of crèche systems, water provision, etc.

A diagrammatic example of how such community empowerment can impact on AIDS prevention, taken from Webb (1993), is depicted in figures 1 and 2 below.

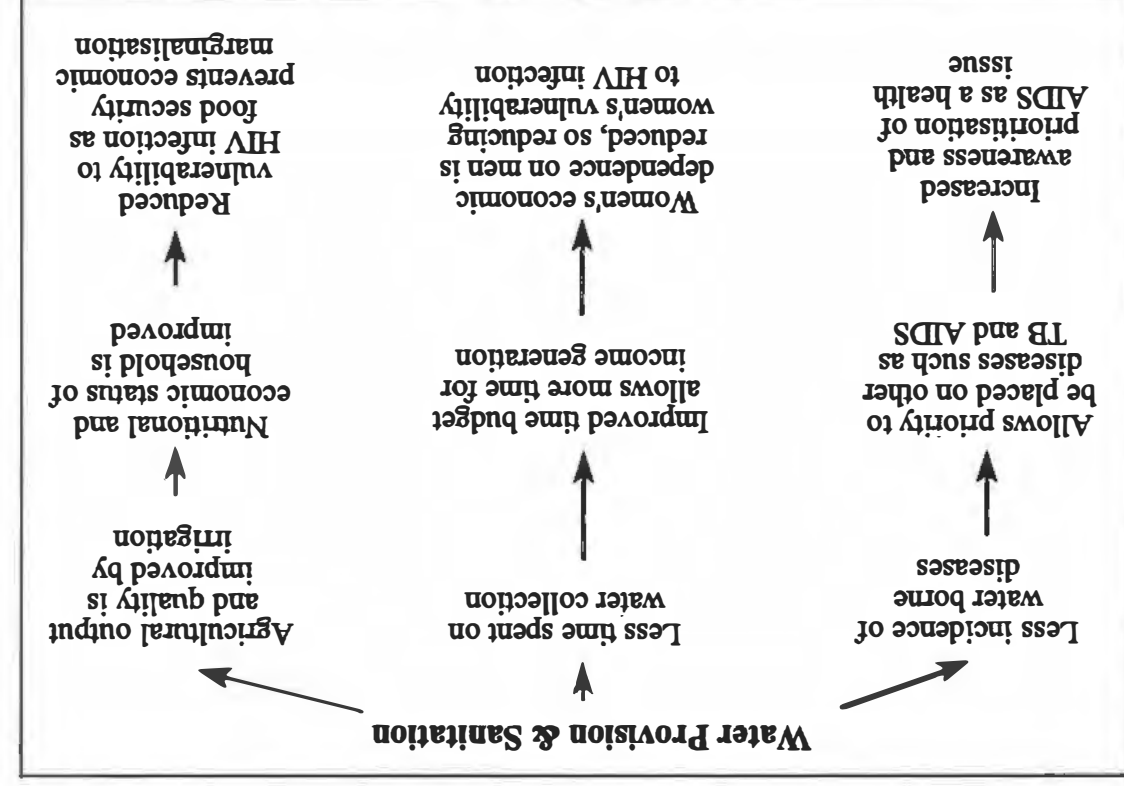
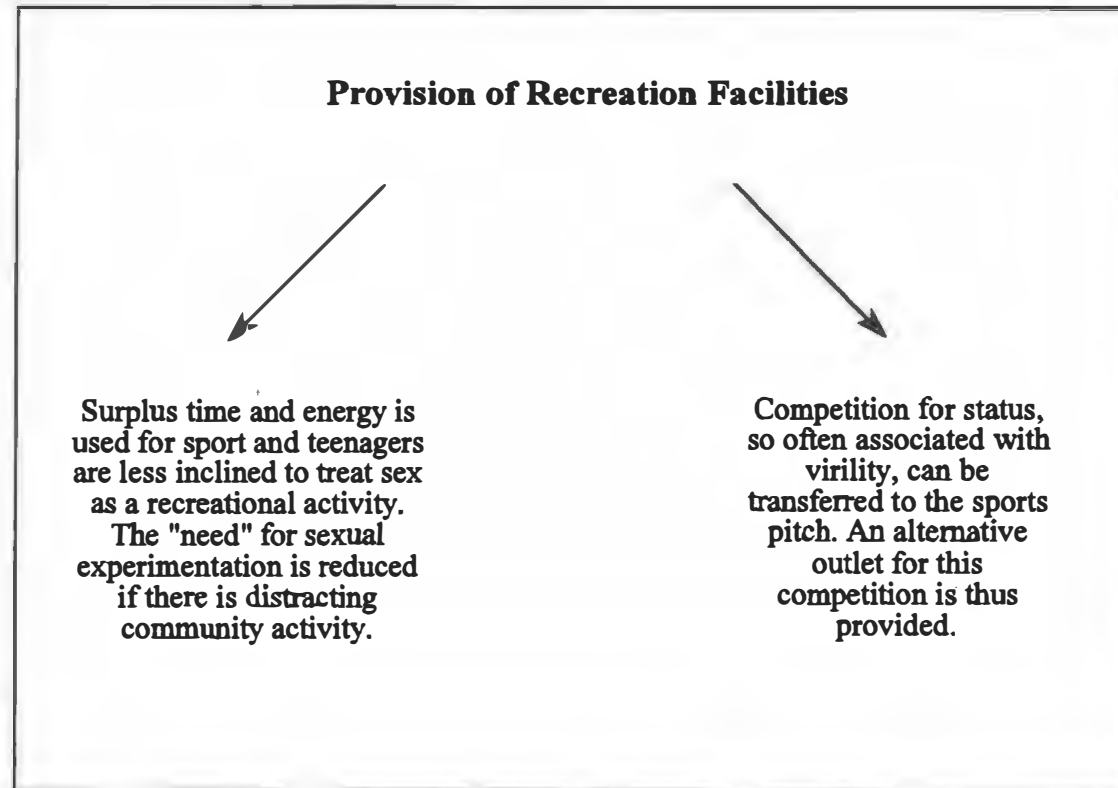


Figure 1

Figure 2



Thus people's awareness of health-protective behaviours connected to their sexual behaviours can be enhanced by control of water-related diseases, such as gastro-enteritis, due to the reduced importance or severity of other health and development issues. Water is a central need in most rural communities, and by upgrading water provision people would be able to have more time for income-generating activities, and improved agricultural output would have a number of economic and health benefits (ibid). In urban centres "boredom" has been directly linked by members of the community to an increase in teenage pregnancies. Providing recreation facilities can thus have a direct impact on recreational sex amongst the youth (ibid). The focus in such approaches is on the *context* of high-risk sexual behaviour rather than on unsafe *sex per se*.

Dr M. Merson, executive director of the Global Programme on AIDS, stated at the third Pan American Conference on AIDS in Columbia (1993, p.3) that

Religious or cultural taboos or traditions may impede frank mass media campaigns or school education on how to prevent the transmission of HIV. But let's face reality. Lives are at stake; the lives of our children, among others. We simply must overcome our denial and inhibitions. We must admit the existence of risky sexual activity, and we must apply the information, skills and means to reduce those risks.

By adopting a social-transformatory approach that incorporates a multifaceted community-based approach, contextual and cultural barriers to individual health-protective decisions and the maintenance of risk-reducing behaviours over time, can be addressed. This would confront the social issues in which HIV-risk is inherently imbedded and lay the foundation for cognitive-behavioural skills training as well as social norm change models which are by no means mutually exclusive.

CHAPTER 4

AIM

The study aimed: (1) to determine the relationship between variables described within the Health Belief Model (HBM) and Theory of Reasoned Action (TRA), including demographic variables and the contextual variables which influence behaviour in the sample, as well as (2) to determine the perceived and stated health needs of the sample.

The population sampled consisted of Zulu-speaking adults living in a broadly-designated rural area, and an urban area within greater Pietermaritzburg and surrounding districts. The urban/rural difference was perceived to be an important one due to the fact that inaccessibility to resources such as adequate education, health care, clean water, transport and recreational facilities has necessitated a different strategy in combatting AIDS in these areas (NACOSA, 1994; NACOSA, 1993). The study also aimed to investigate the importance of contextual variables in determining and influencing the behaviour and behavioural intention of those in the sample, by determining what subjects prioritised with regard to health problems and needs, and whether they had any perceived control over such problems, or could implement the needs. The desired outcome was to inform intervention as to the most appropriate level of application with regard to intended HIV-preventive behaviour.

4.1 Research questions

The study thus sought to address questions raised about models of health protective behaviour (described below) and increase the understanding of what variables make an impact on knowledge, attitudes, beliefs and behaviours, using a sample which is culturally and socio-economically diverse from the First World samples that have been used to inform theory and intervention in much of the literature. The apartheid era in

South Africa has resulted in not only disadvantaging "non-white" people, but also doubly-disadvantaging rural people, who have historically had less access to resources. Thus, because HIV/AIDS prevention campaigns tend to be based on assumptions that do not take such biases and issues into account, or place enough emphasis on acknowledging such bias, the urban/rural distinction was considered paramount to the present study.

In order to inform programmes on the ground, comprehensive responses were sought from subjects in the communities studied, which necessitated a combination of qualitative and quantitative methodology. The sample size and sampling procedure, as well as budget restrictions, admittedly restrict the universality of the interpretation of data. However, the magnitude and complexity of the data obtained makes the present study a useful tool in informing further research and interventions. For this reason single items of interest, relationships between items, and underlying constructs of correlational variables have been identified and discussed.

The following questions will be addressed in the study:

- Q1: What relationship exists between variables identified from theories of health behaviour (knowledge of HIV/AIDS, perceived vulnerability to HIV/AIDS, perceived efficacy of health-protective behaviour, stereotypical attitude, and risk behaviour), and what is their relationship with certain demographic variables (sex, geographic definition as rural or urban, age, and level of education)? Are these elements sufficient in explaining the behaviours of respondents in this study?
- Q2: What problems that impact on health are reported, and what are the perceived and stated health needs of subjects participating in the study? Do the expected differences in the needs of rural and urban samples indicate the importance of contextual factors on decisions taken about health? Is AIDS perceived as a

health threat and what is its comparative importance when considered with other identified issues regarding health?

4.2 Organisations involved

The study was completed with the support and participation of three health-related organisations, namely the Pietermaritzburg AIDS Training, Information and Counselling Centre (ATICC), the Organisation for Appropriate Social Services in South Africa (OASSSA) which has since joined other health organisations to form the South African Health and Social Service Organisation (SAHSSO), and the Midlands Progressive Primary Health Care Network AIDS Programme (PPHCN AP). The information derived from the survey in this study will be fed back to these organisations through making an executive summary of the completed dissertation available, as well as by means of a workshop in which an overview of the literature reviewed can be presented and the findings and recommendations of the study discussed. The aim will be to inform the content and theoretical approach of these organisations' HIV/AIDS prevention and care programmes implemented by these programmes through making data and interpretations available.

The investigation of elements of the predominant models of health-protective behaviour included levels of risk behaviour, knowledge of HIV/AIDS, perceived vulnerability, perceived self-efficacy, stereotypical attitude, as well as the relationship between these variables and their relationship with demographic variables. The perceived and stated health needs of the individuals and their community also involved a broad survey of the status of health-related issues in these two broadly defined communities. This information will be fed back to community-based organisations working in the primary health and anti-AIDS areas.

4.3 Methodological issues

The structured interview design was refined from the findings of the pilot study, which encompassed unstructured interviews with a non-random sample of clinic-attenders in both urban and rural areas. Content analysis of discussion with subjects in the pilot study revealed common responses and important areas relating to HIV/AIDS knowledge and beliefs, as well as perceived health priorities. These were formulated into a structured interviewing schedule and applied to two sampled areas; one which can broadly be defined as rural, and the other urban.

The structured interview and questionnaire were designed to engage subjects on a level which would be less threatening to them. Talking of sex, threatening diseases and their own behaviours can be culturally, socially and personally compromising, so the design of the survey had to take into account such possibly confounding issues. The desired outcome of the study was to inform the theoretical understanding of behavioural processes and pathways of cognitive decision-making amongst Zulu-speaking adults in KwaZulu-Natal, whilst encouraging the findings to be used on an applied level in intervention. Thus the communities studied were hopefully to derive benefit from the survey. This actually succeeded in assisting the research assistants in engaging the subjects on issues important to them and their community. Thus the design incorporated a more general section in which general development and health issues were discussed, before addressing more personal issues on health beliefs, AIDS and sexual behaviour.

Knowledge, attitudes and behavioural practices have been studied in various populations both in South Africa and abroad for many years. Examples of such KAP surveys are provided in chapter two of this study. The sample survey is used extensively in such studies, which, in order to increase sample size while reducing costs to a minimum, often utilise closed or self-administered questionnaires. Hauser (1983) criticises such KAP studies on two grounds: firstly, they have failed to include adequate efforts to study the reliability and validity of their data, and secondly, they

have failed to make adequate efforts to obtain measurements of the "intensity" of the opinions or attitudes reported. In the area of behaviour, in particular, verbal and non-verbal behaviour are often not closely related. However, Mauldin (in Hauser, *ibid*) states that this should not discourage the use of the method or the interpretation of the data obtained, but that the researcher needs to find much more useful ways of obtaining data regarding behaviour. Sexual behaviour is difficult to observe, and due to the restricted sample size of the present study and its limited budget, obtaining STD, pregnancy and contraceptive-use statistics would not inform the accuracy of the expressed behaviours.

Warwick (1983) identifies the power that KAP surveys hold through the way that questions are presented and interpreted, and furthermore, what is in fact left out. He identifies the importance of free subject response in being able to identify the actual concerns of the subject, rather than the imposed concerns of the researcher. Many of the problems with KAP surveys thus begin with the way that the research problem was conceived (eg: that health-protective behaviours are an individual response and controlled primarily by individual cognitions). Warwick (*ibid*) warns of inferences in analysing data obtained, and the over-interpretation of data. He states that the first question in assessing the usefulness of a KAP survey should investigate policy implications: what is at stake, and what are the researchers attempting to prove? It is therefore important to identify political, personal and professional agendas when regarding KAP studies.

Hugo (1990) identifies the need to be sensitive when doing social research in South Africa; due to apartheid, violence, social class extremes and the polarities that exist between the poorly educated and well-educated; and between disadvantaged black people and advantaged whites. In the present study great care was taken to explain to subjects that the survey was being carried out both to inform both on an academic level and on a social level. One or more of the organisations involved were known in the areas studied, and the aims of social upliftment and informing developmental and health infrastructure change was emphasised. This helped to reduce suspicion and

increase compliance. Furthermore, the research assistants were Zulu-speaking black students who had both a knowledge of the local areas, cultural sensitivities and the research design. Bulmer (1983) identifies remedies for errors: the interviewer should be able to speak the subject's language and understand his/her culture, and membership of the same ethnic group is desirable; the sex of the interviewer should be borne in mind; the interviewer should be well-trained and competent; the interviewer needs to be able to relate to those being interviewed; age of the interviewer should be kept in mind, with possible responses being biased if sensitive information is at issue; and the interviewer should ideally have the same class or financial status as those being interviewed.

Hugo (1990) discusses the importance of addressing ego threat. The research assistants in the present study were encouraged to address fears prior to embarking on the interview and administering the questionnaire. They did, however, report some uneasiness in the rural subjects caused by the use of tape recorders, which led to some suspicion about how the recordings were to be used. In the structured interview sample, this was addressed by taking an example of computer-coded print-outs which were accompanied by an explanation of the content-analysis method. The survey was designed to begin with least ego-threatening questions and to end with those that may be more threatening.

Although the efforts above aimed to reduce bias as much as possible, one needs to acknowledge that such social research in South Africa is difficult and inherently biased. Zulu (1990) identifies the fact that interviewing a person in a highly politicised and stressed society (due to apartheid, social and economic disparities and political violence, which is accentuated in the greater Pietermaritzburg area due to the ongoing conflict between supporters of the African National Congress and the Inkatha Freedom Party) can never result in non-biased responses due to the subject attempting to interpret the aims (or more so, the hidden aims) of the survey. He does identify that allowing more time per subject, and allowing the subject to talk freely, enables obvious expected-response bias to be analyzed and rejected by the researcher.

If the questions raised in this study can encourage an appraisal of the assumptions upon which programmes worth millions of rands are based, and if further and more comprehensive designs are encouraged, then the present study will have achieved its aims.

CHAPTER 5

METHOD

A survey method was utilised: (1) to obtain measures of knowledge of HIV/AIDS, risk behaviour, social stereotype, personal vulnerability, and perceived efficacy of behaviour change (or protected behaviour) for a sample of urban and rural Zulu-speaking adults; (2) to assess the relationship that exists between these variables as well as with demographic variables; and (3) to explore to what extent other health and development priorities impact on these measures. The survey sought to determine what subjects' prioritised with regard to health problems and needs, and whether they had any perceived control over such problems, or could meet the needs. The perceived importance of HIV/AIDS was established in light of these perceived and stated development and health needs and priorities.

5.1 Design

5.1.1 Pilot Study

In order to investigate (a) whether the wording of the questionnaire would be suitable for subjects with limited literacy skills; (b) whether subjects would be willing to discuss their beliefs about their health needs and the needs of their community; and (c) whether any cultural beliefs and/or practical difficulties would confound responses, a pilot study was completed. A simple questionnaire was designed to elicit demographic information, behavioural determinants, levels of knowledge, self-efficacy, vulnerability, and the degree to which responses were stereotypical. The questionnaire and unstructured interview were administered by a Zulu-speaking research assistant to randomly selected clinic attenders in clinics in the greater Pietermaritzburg area. The clinics were visited on varying days so as to reduce the likelihood of selecting subjects

attending the clinic for a specific reason, and only general clinic days (rather than special ante-natal or sexually transmitted disease clinic days) were attended. The urban clinics visited (with number of subjects in parenthesis) were in the following areas: Edendale (12), Imbali (3), Dambuza (1), Esinathingi (1), Hopewell (6) and Azalea (5). The rural areas were Mpolweni Mission (10), Impendle (13) and Ntokozwe (1).

Subjects were approached by a Zulu-speaking research assistant who had been trained in interviewing techniques and who had an understanding of the broad aims and objectives of the proposed study. The questionnaire was tested, and subjects were interviewed according to an unstructured interview design. The results were used to design a structured interview schedule, as well as to identify possible problems with the method. The unstructured interviews resulted in greater difficulty with finding common categories in content-analyzing the data from the pilot study. Although an interval sampling procedure was adopted, practical problems biased the sampling procedure. These included subjects agreeing to participate but then having to leave in order to catch their taxi and a few selected subjects refusing to be interviewed. Subjects were generally happy to be interviewed with the use of a tape recorder. The time that it took subjects to do the questionnaire was recorded, and subjects were asked whether they objected to answering any of the questions.

It was thus decided that (a) the responses considered to be most useful to the study would be formulated into a structured interview schedule; (b) clinic-attenders were too specific a sample, and it would be more appropriate to choose subjects randomly sampled from a rural and urban area; and (c) the interview would be structured so as to begin with questions about perceptions of health and development needs and move on to AIDS-specific questions, ending with the questionnaire. The results of this pilot study will be reported to the organisations doing interventions in the Midlands area together with the findings and interpretation of the final study. •

5.1.2 Study Design

The Ntunjumbili and Sobantu areas were identified from a regional geographical survey due to the difference in resources across these two areas. Data collection and analysis was extended to include personal responses and broad behavioural issues that could inform specific programmes in the area.

The questionnaire was designed to provide measures of variables identified from theories of health behaviour, namely: knowledge of HIV/AIDS, perceived vulnerability to HIV/AIDS, perceived efficacy of health-protective behaviour, stereotypical attitude, and risk behaviour, as well as to ascertain demographic variables (sex, geographic definition as rural or urban, age, and level of education). These measures would enable analysis of the relationships across variables.

The interview schedule was designed to investigate what problems that impact on health are reported, and what the perceived and stated health needs of subjects participating in the study were. Both the questionnaire and interview schedule could then be analysed in order to ascertain whether AIDS is perceived as a health threat and also its comparative importance when considered with other identified issues regarding health. The investigation of the relationships between variables derived from both the questionnaire and interview schedule could help ascertain the influences of environmental and social factors on cognitive processes. All of this would be examined in the light of the literature reviewed and the critiques derived from, and within, the review. The measures of variables reflecting elements of health behaviour models (e.g. perceived vulnerability, knowledge of HIV/AIDS) mentioned above were *dependent variables* and geographical designation (urban/rural), sex, age group, and level of education were *independent variables*. Whether HIV/AIDS was seen as a high community, family or personal health priority was considered to be dependent on the importance attributed to other health threats and developmental needs. In the HBM, elements such as perceived efficacy, vulnerability and knowledge are considered independent variables which determine behavioural outcome, but in the present study

these elements are dependent on the demographic variables which influence them. The focus is on the relationship between these measures and the context in which the behaviour is taking place. The demographics influence the measures described in the models, which in turn explain or influence behaviour.

The design required the selection of subjects from different categories of independent variables, notably geographical designation as *urban* or *rural*, and other demographic variables to investigate their impact on health and development. A sample survey design was used, which is considered by Kerlinger (1986, p.378) to

attempt to determine the incidence, distribution, and interrelations among sociological and psychological variables, and, in so doing, usually focus on people, the vital facts of people, and their beliefs, opinions, attitudes, motivations, and behaviour.

A sample survey design used in sociological and psychological research necessitates as large a sample as possible. Time and money constraints restricted the sample size and although a large sample was not used, the survey design enabled a wealth of data to be collected. However it is acknowledged that a sample in the region of 600 or 700 subjects would have given a far more accurate and acceptable picture.

5.2 Sample

The total sample of those participating in the study amounted to fifty. Possible sample bias may have occurred due to the fact that subjects were approached during working hours (and may therefore have been unemployed), although there did not seem to be any obvious bias with regard to age, standard of education, or gender.

Of the total sample of 50, 27 were female and 23 male. There were an equal number in the urban and rural samples, each amounting to 25 subjects. Age ranged from 18 to

52 years. The mean age was 29.54 years (standard deviation = 9.307). The ages were categorised as follows:

TABLE 1

17 - 20	11
21 - 25	10
26 - 30	8
31 - 35	10
35 +	11

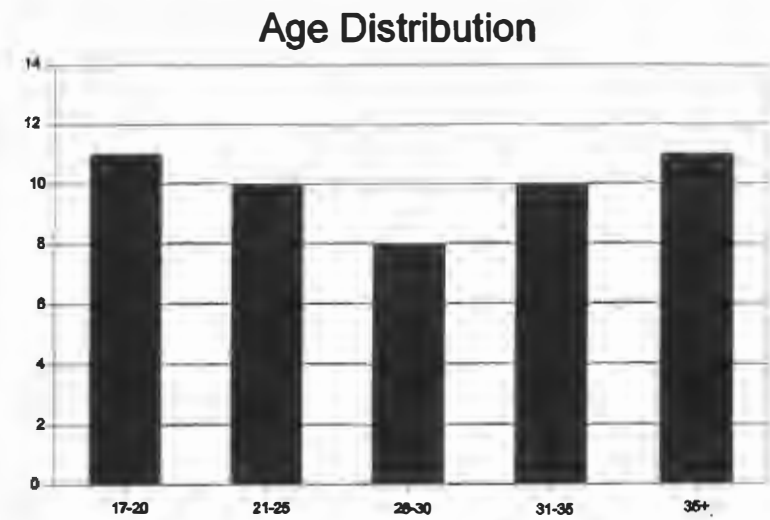


Figure 3

The questionnaire and a structured interview were administered to subjects selected through an interval sampling technique. Sobantu Village was selected as the broadly designated "urban" area (n = 25), and Ntunjumbili as the broadly designated "rural" area (n = 25).

Sobantu Village is a black township entirely within the municipal boundaries of Pietermaritzburg, and is under the management of the Pietermaritzburg City Council. The majority of houses are privately owned, and recently there has been an increase of informal housing development due to pressure on existing housing units and the fact that formal housing extensions are prohibited due to the land not having been transferred to private ownership together with the buildings.

Each house has its own waterborne toilet, a piped supply of clean water, a refuse bin and refuse service. There are municipal facilities such as a library; primary, secondary and senior schools; crèches; a clinic serviced by the Municipal Health Department; recreation facilities and various businesses such as general dealers. Although the roads are tarred, they are generally poor.

The Ntunjumbili settlement is a village-type settlement in the Kranskop census district. Although the settlement consists of rural subsistence farming plots, the houses of the village are relatively clustered. There are primary, secondary and senior schools in the Kranskop district, although some distance from the Ntunjumbili area. There are no provisions for water, garbage disposal, recreation (other than at the schools) or other community-service provisions. Due to the proximity to industries and farms in the Kranskop district, the number of informal settlement dwellings has increased markedly. The Kranskop district has clinic and mobile clinic facilities, provided by the Natal Provincial Administration. Although there are further health and recreation facilities available at the industries, these are not available to the Ntunjumbili settlement. The dirt roads are extremely poor and the area has experienced severe drought over the past few years.

5.3 Instruments

The instructions for the interviewers and the questions directing the structured interview are included in Appendix A. The English questionnaire is included in Appendix B, and the Zulu translation used is included in Appendix C.

5.3.1 The questionnaire

The questionnaire aimed to provide measures of knowledge of HIV/AIDS, perceived personal vulnerability, self-efficacy, risk behaviour, and stereotypical attitude, as well as demographic variables considered to be important to the study. The questionnaire was derived from the 101-item questionnaire used by Bell, Feraios and Bryan (1990) to assess knowledge, attitudes and behaviour regarding HIV/AIDS, in adolescents. This questionnaire had been simplified by the Pietermaritzburg ATICC in conjunction with a consultant from the University of Natal (Pietermaritzburg) Psychology Department in order to measure the impact of AIDS education on factory workers in a workplace anti-AIDS programme. The current study utilised the measures derived from the Bell *et al* (1990) questionnaire, as well as measures included in the questionnaire used for

the anti-AIDS programme. Questions included to specifically measure scales pertaining to elements of health belief models were derived from the Taute (1991) study of AIDS prevention. The *perception of personal vulnerability scale* and *perceived efficacy scale* were derived from a scale developed by Joseph *et al* (1987), and which proved to be a reliable measure in Taute's (1991) study. The questionnaire was translated into Zulu and back-translated into English in order to ascertain the accuracy of the translation.

During the pilot-testing phase, the questionnaire was found to be appropriate for someone with an approximate senior high school level of literacy. No-one with this standard of education had indicated any difficulty in understanding the questions, and when asked to elaborate on responses these subjects were able to show a clear understanding of the task at hand. Subjects participating in the pilot study also indicated that they found the questionnaire more appropriate for answering sensitive questions about their sexual behaviour and certain beliefs.

The questionnaire was designed to be as short and simple as possible. Although the measures included in the Bell *et al* (ibid) questionnaire were derived from more individual items on the questionnaire, it was decided that including all items would be too complex for people with limited literacy skills. The experience gained from testing the questionnaire in factories indicated a need for reducing items to the minimum and keeping questions as simple as possible. Cultural and language-specific changes were also made to the items according to the problems indicated whilst developing the questionnaire for use in the factory worker survey.

Demographic details included age, sex, marital status, level of education passed, geographic definition as rural or urban, and living conditions. Questions assessing personal risk behaviours were included. The 33-item second section included questions which made up the scales which are included, along with the scale name, number of items, direction scored, source and cronbach alpha reliability test result, in Table 2 below. Elements that are prominent in the HBM, TRA and some of their derivatives that were measured, included general knowledge of HIV/AIDS, perceived personal

vulnerability, perceived efficacy of behaviour change, stereotypical beliefs with regard to HIV/AIDS, and AIDS risk behaviour. Each respondent was asked to respond to a question or statement by agreeing (yes), disagreeing (no), or stating that they did not know. Questions were not placed in order of scale categories, but were combined to follow no discernable pattern. The sum of items in each scale provided a scale score or measure. The direction was determined by the score e.g. a high score on the knowledge scale represented a high knowledge of HIV/AIDS, whereas a low score on the behaviour scale was an indication of high-risk behaviour.

The Cronbach Alpha Reliability Test showed that 3 of the scales used in the pilot study had a poor reliability. Inter-item correlations were done and two items that were negatively affecting the reliability were excluded from each of the vulnerability and behaviour scales. The scale measuring efficacy was found to have poor reliability, but there were too few items in the original scale to warrant deleting any more. This should be considered when interpreting the results that refer to this scale. Efficacy proved difficult to measure in the Taute (1991) study, and the scale items derived from Joseph *et al* (1987) were considered to be far more sophisticated than any of the other items in the questionnaire used in the present study. The items included in Joseph *et al* (*ibid*) were appropriate for a First-world sample with high levels of literacy and sophisticated socio-economic functioning, but were considered to be inappropriate for the areas sampled in the present study.

TABLE 2

SCALE	NO. ITEMS	DIRECTION	SOURCE	CRONBACH ALPHA
Knowledge	13	high score=better knowledge	Bell <i>et al</i> (1990) Taute (1991)	.5397
Behaviour	3	low score=high-risk behaviour	Bell <i>et al</i> (1990)	.4987
Stereotype	8	low score=more stereotyped	Bell <i>et al</i> (1990) Analysis of content of pilot study	.6480
Vulnerability	3	high score=high awareness of personal vulnerability	Joseph <i>et al</i> (1987)	.4987
Efficacy	3	low score=less perceived efficacy	Joseph <i>et al</i> (1987) Taute (1991)	.2634

Another measure of validity described by Kerlinger (1986) is *convergence*. This refers to responses to items on the questionnaire were generally congruent with responses to questions in the interview. The validity of the knowledge scale was further enhanced by the expected finding showing that increased access to formal education resulted in a higher knowledge score. Examples of the Zulu questionnaire and the English translation of it are included in Appendix A.

5.3.2 The structured interview

The general aim of the structured interview was to determine the perceived and stated needs of the subject and his/her community with regard to health and development. The perceived importance of HIV/AIDS as a health issue was assessed from the emphasis placed by the subject on identifying and/or addressing AIDS. Specific questions regarding AIDS and AIDS risk-reduction behaviour were included to elaborate on the responses derived in the questionnaire.

The verbal interview was recorded on audio tape (with the permission of the subject) and then transcribed and translated from Zulu into English. Results of the pilot study

indicated (through analysis of responses to subjects' perceptions of the procedure) that the interview was adequate for eliciting more detailed opinion and attitudes about health in the community. It was found that best results were obtained from beginning discussion on a broader health level, and when the research assistant had gained trust, then moving onto more sensitive and personal subject matters.

The structured interview was administered prior to the questionnaire and began with general questions about health problems and needs in the community. The research assistant then asked whether any of these problems affected the subject or his/her own family, and whether his/her needs were the same as the needs in the community. The causes to which illnesses and problems were attributed were then investigated, as well as to whom or what the subject attributed responsibility. The last question in the general section of the structured interview aimed to assess what prevention efforts could alleviate the problem in the community, and whether the subject was doing, or could do, anything to alleviate his/her own situation. The research assistant then turned to the specifics of communicable diseases and AIDS. Questions as to the existence of AIDS in the community, where it originated, whether it affects the community or the subject directly, the role of condoms, the role of health services, and who is most endangered by AIDS, were asked to enable the subject to give a more detailed explanation of his/her beliefs, vulnerability, attitudes, and perception of personal control in preventing risk.

Effects of interviewer style were assessed using a Chi-square analysis, showing no significant bias across interviewer (research assistant), thus indicating that the interviewer's style could not account for any significant differences in the responses from subjects. The instructions for interviewers and structured interview questions are included in Appendix B.

5.4 Procedure

Misconceptions or obvious difficulties in understanding were tested during a pilot study among 54 clinic-attenders, which helped to instruct the design of the instruments used (discussed in 5.3). The responses of participants who took part in the pilot study helped to determine the structured interview schedule, and to test the suitability of the questionnaire. Two areas were selected, one urban and one rural, in order to investigate the impact that having different access to resources would have on the perceived needs and priorities with regard to health and development. By exploring the significance and nature of the relationship between demographic variables and measures of elements incorporated in models of health behaviour, the impact of demographic variables could be investigated. The design thus used both quantitative and qualitative methods to elicit information from subjects.

The structured interview schedule is included in Appendix B. Two Zulu-speaking research assistants (both of whom were undergraduate university students) were trained in interviewing skills and administration of the questionnaire and interview schedule. They were also informed about the research design, aims of the study, and sampling procedure, and were taught basic communication skills. Role-plays were completed to pre-empt possible difficulties and fears, and to practice ways to gain the cooperation and confidence of subjects.

The questionnaire and structured interview were administered by the research assistants in Sobantu Village (25 subjects), constituting what is referred to as the urban sample in this study, and in Ntunjumbili (25 subjects), termed the rural sample in this study. These areas were each visited on two separate days of the week. An interval sampling procedure was used whereby every third road was selected, with every fourth house in the road selected (for the urban sample), and every fourth household selected within the Ntunjumbili village (with the village separated into three sectors) for the rural sample. The interviews were conducted in private in the subject's house, and each subject was assured that the tape recording of the interview would be wiped clean after

the data had been analyzed. Subjects would remain anonymous, with subject numbers being used instead of names. The physical address of the subject was not recorded, and care was taken to make such assurances to the subject and explain how data would be analyzed and entered into a computer database. Overall subject participation was extremely good, with only two of 52 people approached refusing to participate in the study.

The research assistants began by introducing themselves and the study (as a study of health and community services in their communities). They then began with the more general questions of the structured interview schedule, moving on to the specific questions about AIDS, and then the questionnaire. This enabled a measure of whether people prioritized AIDS as a health or development issue for their community, their family and neighbourhood, and themselves. Identifying the AIDS epidemic, or even sexually transmitted diseases as an issue, without prompting or being aware that this was the ultimate focus of the study was an indication of their having prioritized this as a health issue. The interviews were translated from Zulu into English and transcribed by the research assistants who had completed the interviews, and then content analyzed. The questionnaires were scored by allocating 1 to the response which was factually correct or desired in order to obtain a high score on the relevant scale, or a 0 for any other response and data was then entered into a database.

5.5 Data Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS/PC version 3.1). Frequencies and means for all items and scales were obtained. In order to establish whether there were any significant relationships between the measures of elements of health behaviour models and demographic variables, one-way Analyses of Variance (ANOVA) were done for each scale measure (knowledge, behaviour, stereotype, vulnerability and efficacy) by sex, urban/rural difference, age and level of education. For all analyses, any subjects with missing items within the scale were discarded. The descriptive statistics of all the demographic and questionnaire items

were completed for all subjects, as were the ANOVAs. The analysis described above was primarily used to investigate the relationships between scale scores and demographic variables, as outlined in the first group of questions included under Q1 in the Chapter 4.

Content analysis was used to analyse the quantitative data collected through the structured interview. Kerlinger (1986, p.477) describes content analysis as

a method of studying and analysing communications in a systematic, objective, and quantitative manner to measure variables.

The content of expressed verbal communication was of interest here, and given the variation in people's communicative style, it was necessary to categorise subjects' responses to each of the structured questions into categories that could be quantitatively analysed and compared. Holsti (1969) identifies the importance of mutually exclusive categories and consistently applied rules of control in content analysis. All responses from the structured interviews were recorded, and categorised according to the lowest common denominator in the form of broad categories. Categories were identified according to the aims of the study. The content analysis of interviews was predominantly done to investigate the second set of questions included under Q2 in Chapter 4, as well as to provide more depth to the findings of the analysis of questionnaire data. For example, responses to the question "*What are the health needs in your community and are your needs the same or different?*" were recorded and categorised into development needs (including responses referring to housing, roads, electricity, and transport), water needs (including shortage of water, no clean water, and a need for taps or adequate water distribution), a need for health facilities (including need for permanent or mobile clinics, doctors, nurses and primary health facilities), need for employment (including references to jobs, work, and employment), recreation needs (including responses pertaining to more sport, playgrounds, sport facilities, entertainment facilities and clubs), sanitation needs (including references to dirty streets and homes, litter, toilets and sanitation), education needs (including

schools, primary health education, talks), and AIDS education needs (including any reference specific to HIV/AIDS interventions, media or education). These categories were then quantified and entered into a database as separate variables. Relevant results from the analysis of the structured interviews are included in the results section, and content analysis categories and variable names are included in Appendix C.

In order to investigate the impact that the stated and perceived health needs have on awareness of, or prioritisation of, AIDS preventive behaviour, as well as to explore the nature of the relations between variables, analysis of frequencies was done. Cross-tabulations (referred to by Kerlinger, 1986, as *crossbreaks*) were completed for every item by every other item, with chi-square statistics.

A factor analysis of variable items selected from the structured interviews was run in order to identify possible groupings or constructs underlying the variables, and which would then assist in describing which variables are positively related. Factor analysis may be used to identify underlying constructs or "factors" that explain the correlation among a set of variables, to test hypotheses about the structure of variables, to summarize large numbers of variables with a smaller number of derived variables, and/or to determine the number of dimensions required to represent a set of variables (Norusis, 1985). However, factor analysis is considered by Kerlinger (1986) to be more useful for samples that are larger than the one used in the present study. Thus the results of the factor analysis should be interpreted with some caution. The analysis produced 11 factors with an eigenvalue greater than 1.0, which was then restricted to 5 factors after a scree plot showed a distinct drop in eigenvalue after the 5th factor. Thus the 5 factors with an eigenvalue greater than 2.5 were used. Details about the factors, the scree plot and a table of eigenvalues, are presented in the results section included in the next chapter, and a full list of the variables selected and the rotated factor matrix for all 5 factors, is included in Appendix D.

CHAPTER 6

RESULTS

6.1 Demographics

The sample had an equal number of rural and urban subjects. There were 27 (54%) females (55.5% rural and 44.5% urban) and 23 (46%) males (43.5% rural and 56.5% urban). 80% categorised themselves as not being married. Of the 14% who had passed between std 2 and 5, 71.4% lived in the rural area and 28.6% in an the urban area. Of the 44% who had passed between std 6 and 8, 36.4% were found in the rural area, and 63.6% in the urban area. Of the 42% who had passed std 9 or matric, 57.1% lived in the rural area and 42.9% in the urban area. The mean age for this sub-sample was 29.5 years (males = 28.7 years, SD = 8.67; and females = 30.25 years, SD = 9.3).

6.2 Questionnaire

6.2.1 Single items of interest

Responses to particular questions included in the questionnaire help to indicate the general knowledge, attitudes and practices of the respondents. Scale scores and relationships will be reported later.

Responses to questions are included in tabular form, divided into rural and urban subjects, and recorded as **valid percentages**.

TABLE 3

Question 1 - *Do you think YOU could ever get AIDS?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	28	24	32
no	38	48	28
d/know	34	28	40

TABLE 4

Question 3 - *Can YOU do anything to prevent yourself getting AIDS?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	71.4	66.7	76
no	14.3	12.5	16
d/know	14.3	20.8	8

TABLE 5

Question 5 - *Are you worried that you might get AIDS?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	72	68	76
no	22	28	16
d/know	6	4	8

TABLE 6

Question 6 - *Do you use condoms when having sex with your regular partner/s (husband, wife, girlfriend, boyfriend)?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	14.9	13	16.7
no	72.3	73.9	70.8
sm/times	12.8	13	12.5

TABLE 7

Question 7 - *Do you ever have partner/s other than your regular partner/s?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	43.6	37.5	47.8
no	56.4	62.5	52.2

TABLE 8

Question 8 - *Do you use condoms when having sex with partners other than your regular partner/s (answer if response to Q7 is "yes")?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	34.6	22.2	41.2
no	53.8	55.6	52.9
sm/times	11.5	22.2	5.9

TABLE 9Question 9 - *Have you ever been treated for a sexually transmitted disease?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	30	24	36
no	70	76	64

TABLE 10Question 10 - *Do you do anything to prevent yourself from getting AIDS?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	50	36	64
no	50	64	36

TABLE 11Question 12 - *Do you think any of your friends could get AIDS?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	55.1	48	62.5
no	16.3	24	8.3
d/know	28.6	28	29.2

TABLE 12Question 13 - *"Real" men don't use condoms.*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	29.4	25	33.3
no	5.9	-	11.1
d/know	64.7	75	55.6

TABLE 13

Question 14 - *Can you see if someone has the AIDS germ?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	14	8	20
no	70	72	68
d/know	16	20	12

TABLE 14

Question 18 - *People like me never get AIDS.*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
yes	20	32	8
no	56	44	68
d/know	24	24	24

TABLE 15

Question 19 - *Only people who have many sexual partners get AIDS.*

ANSWER	RANDOM SAMPLE		
	TOTAL	RURAL	URBAN
yes	56	60	52
no	32	28	36
d/know	12	12	12

TABLE 16

Demographic question 6 - *How many sexual partners have you had in the last 2 months?*

ANSWER	SAMPLE		
	TOTAL	RURAL	URBAN
none	22	28	16
one	52	56	48
2 to 4	22	12	32
g/t 5	-	-	-
d/know	4	4	4

6.2.2 Scale scores

Scores for knowledge, behaviour, vulnerability, stereotype, and efficacy are provided for the sample.

TABLE 17

Scale	Missing Cases (%)	Range	Mean	SD
Knowledge	4	1 - 12	6.46	2.211
Behaviour	22	0 - 3	1.92	0.984
Vulnerability	2	0 - 3	1.55	1.001
Stereotype	36	0 - 6	2.63	1.947
Efficacy	2	0 - 3	1.94	1.008

6.3 Content Analysis of structured interviews

Results are included as valid percentages with significant missing cases in parentheses.

How healthy is your community? . . . Please mention what is good and bad.

40% of respondents said that health was good, whilst 30% regarded health standards in their community to be fair, and 20% said it was bad. 10% formed no opinion, and there were no missing cases. Of those who responded to what is good and bad (25 missing cases) 32% mentioned water problems, 12% mentioned diseases, 12% mentioned insufficient health services, and 8% mentioned both problems with water and disease. Other problems mentioned included drug problems, lack of housing, drugs and housing, drugs and promiscuity, litter problems, and unemployment (all 4%). Only two people identified good aspects regarding health, one responding that there was no AIDS, and another that there was no disease. *None of the subjects volunteered AIDS as a community health issue.*

What aspects of health have affected you directly? . . . And your family and friends?

65.3% of the sample (1 missing case) said they were personally unaffected by health problems, while 4.1% had been personally affected by STDs and 20.4% by lack of water. Other problems identified included "menstruation", drunkenness, kidney problems and sanitation (all 2%). 46.9% said their families were unaffected by health problems (18 missing cases), 6.3% identified tuberculosis, 9.4% other diseases, 6.3% menstruation, and 21.9% lack of water.

What are the health needs in your community and are your needs the same or different?

Of the 50 subjects, 12% identified development needs (housing, roads, electricity, transport), 38% identified water needs, 16% identified health facility needs (clinic or other health facility), 4% identified recreation needs, 16% identified sanitation needs, and 4% identified a need for AIDS education (Even though no-one identified AIDS as a community health issue - this could indicate that although not seen as a real threat, AIDS is perceived as a possible health threat). 70.7% of the subjects said their health

needs were the same, 9.8% said they were different, and 19.5% were not sure (9 missing cases).

Are there any illnesses that affect your community? . . . Do these illnesses affect you and your family?

Turning to the specific illnesses that sometimes affect people in the community, of the 50 subjects 10% identified tuberculosis, 4% smallpox, 10% measles, only 2% for each of alcoholism, "menstruation", AIDS, STDs, stomach problems, rashes and sores, and 'flu, whilst 22% identified pinkeye and 12% cholera.

As to the *cause* of illnesses, 26% attributed illness to sanitation problems, 4% to lack of housing, 10% to disease, and 12% to some sort of personal contact between people. 30% said there was no cause, or that they were not sure as to the cause of illness in their community.

A further category was identified regarding whether subjects attributed health problems in the community as within their personal control, or as an environmental issue which is outside the gambit of their own control, and rather a broader issue. Only 9.3% regarded the problems within their control, 46.5% attributed problems as being outside of their personal control, 7% attributed the control of health problems to both themselves and their environ, and 37.2% were not sure (7 cases missing).

Who is responsible for you being exposed to these diseases?

23.3% blamed the authorities (overcrowding, refuse not being removed, or poor government services) for the problems that lead to disease in the community, 14% said it was due to personal exposure (person-to-person, carelessness, families or personal lifestyle), 11.6% due to other causes, and 51.2% said that nobody was responsible, or they were unsure (7 missing cases).

What, have you heard, can be done to prevent illness? . . . What do you do to prevent illness?

40.6% said that one should go to a clinic, 25% identified eating proper food and attending to hygiene as being important, 6.3% identified condoms as a means of preventing illness, 3.1% said that proper housing would help, 21.9% were not sure, and 3.1% had some other solution (18 missing cases). When asked about *personal* response, 48.6% identified going to a clinic, 21.6% identified good hygiene or healthy diet, 18.9% were not sure, 5.4% chose some other way, and only 2.7% identified condoms (13 missing cases).

The interview then turned to more specific questions about AIDS.

Has AIDS affected you directly? . . . Is there anyone who you know who has AIDS?

93.9% of subjects said that AIDS does not affect them directly, while 6.1% were not sure, and no-one responded that it does affect them (1 missing case). 95.9% of subjects said they did not know anyone with AIDS, 2% said they did, and 2% were not sure (1 missing case).

Do you know about AIDS happening anywhere else in the country?

57.4% of subjects said they were aware of AIDS occurring elsewhere in South Africa, whilst 34% said they were not aware of this, and 8.5% were not sure (3 missing cases).

How does one get AIDS?

Responses were categorised in order to include subjects who gave combinations of ways that they believed people could become HIV infected. 62% of subjects included sex as a means of transmission, 28% included "promiscuity", 2% thought one could

get AIDS through kissing, 6% included contaminated blood as a transmission route, 24% said one could get AIDS from people with AIDS, and 12% said they were not sure (no missing cases).

What causes AIDS? What can be done to prevent AIDS?

The majority of respondents (58.1%) were not sure of the cause of AIDS, while 11.6% thought it was due to promiscuity, 9.3% thought it was due to prostitution, 14% due to the spread of a virus or bacteria, and 2.3% thought AIDS was spread by homosexuals (7 missing cases). 4.7% named a combination of these categories as the cause of AIDS.

14% of the subjects in the sample (7 missing cases) said that AIDS could be prevented by using a condom when having sex, 37.2% said that sticking to one partner would prevent AIDS, and 7% were of the opinion that a combination of sticking to one sexual partner and using condoms was the best way to prevent AIDS. 14% thought that AIDS could be prevented through education, and 27.9% were either unsure or named other means of prevention. Subjects were then asked about the effectiveness of condoms as a means of prevention, and 83.7% of subjects said that condoms were effective in preventing AIDS, whilst 12.2% disagreed and 4.1% were unsure (1 missing case). However, of 29 respondents who elaborated, 55.2% thought that condoms were not the whole solution or were unsatisfactory, while 6.9% thought they were in fact not safe. 10.3% of respondents said they had no personal knowledge of condoms, while 27.6% had religious, cultural or personal objections to the use of condoms.

Who is most endangered by AIDS?

All subjects volunteered information as to who was most vulnerable to AIDS, with the majority (46%) saying that both men and women were endangered, while 24% said that it was women who were most at risk, 4% responded that people who were not practising safer sex were vulnerable, 16% said it was men who were at risk, 2%

thought promiscuous people were at risk, 2% thought it was specifically the youth, and 6% were not sure who was most endangered by AIDS.

6.4 Investigation of relationships between variables

6.4.1 One-way analysis of variance (ANOVA) of scale scores

ANOVAs provide an analysis of the influence of demographic factors on the subjects' scale scores. This was completed to explore the first set of questions provided in Chapter 4.

Urban/Rural geographical definition

There was a significant effect of geographical definition on knowledge scale score ($F = 5.460$; $p = .029$), with urban respondents (mean = 6.69) having a more accurate knowledge of HIV and AIDS than rural respondents (mean = 4.60).

There was also a significant effect of geographical definition on the efficacy scale score ($F = 3.919$; $p = .061$), with urban subjects scoring higher (mean = 2.31) than rural subjects (mean = 1.6), indicating that urban subjects were more likely to believe they were capable of preventive behaviour.

Sex

There was a highly significant effect on the behaviour scale scores for sex of the respondent ($F = 8.977$, $p = .0049$). Females scored higher (mean = 2.44), with less at-risk behaviour than males (mean = 1.57).

6.4.2 Cross-tabulations

Relationships between questionnaire items as well as content analysis categories were investigated through means of cross-tabulations, using the chi-square statistic, in order to investigate what elements may be important in explaining subject's behaviour, as well as to elaborate on the nature of the relationships that exist between the scores measured for elements of health behaviour models, and demographic variables. Furthermore, relationships between these items and responses to the structured interview were investigated in order to explore the impact that perceived and stated needs may have on decisions about HIV-risk behaviour, as well as on the model variable scores which were measured. Only those items that were significantly related are included here. All items not included were not significantly related.

6.4.2.1 Demographic relationships

One main area of interest lies in the difference between the urban and rural sample. Single items on the questionnaire and categories from the content analysis were cross tabulated with geographic definition (*Urburur*). Significant relationships were found with:

TABLE 18

Question/Item	χ^2	p
Urgent needs of the community = development (housing, roads, electricity, transport)	4.734	.0296
Urgent needs of the community = water resources	16.638	.0000
Which illnesses affect your community = cholera	4.734	.0296
The cause of such illnesses = sanitation problems	6.652	.0099

No rural subjects identified development needs as a priority, whereas such needs were identified by the 12% of respondents who all were from the urban area. Of the 38% of respondents who identified water needs in the community, 89.47% were from the rural sample and only 10.5% were from the urban sample. 32% of the rural sample did

not identify water resources as an urgent need of the community. Of the 12% of respondents who identified cholera as an illness which affects their community, all were from the rural area. With regard to the causes of illness that had been identified, 26% of the sample said that illness was caused by poor sanitation. Of these, 84.62% were from the urban area, and 15.38% from the rural area. Almost half of the urban sample had identified sanitation as a cause of illness (44%), indicating that sanitation problems are perceived to be of importance to those from the urban sample.

Three of the demographic variables were significant determinants. With regard to Question 7. (*Do you have partners other than your regular partner/s?*), more males (88.24% of 43.6%) than females (11.76%) said that they did have partners other than their regular partners. Of the 56.4% who said they did not, 36.36% were male and 63.64% female ($\chi^2 = 5.185$; $p = .0228$).

The number of partners reported in the 2 months before the interview was significantly different for males and females ($\chi^2 = 5.185$; $p = .0228$). Of the 74% of subjects who said they had had one or no partner in the 2 months previous to the interview, 64.86% were female and 35.14% were male. Of the 26% who said they had 2 or more partners, 76.92% were male and 23.08% were female. Males were thus more likely to have multiple partners than females.

The behaviour scale score was related to the sex of the subject, with females having less at-risk behaviour than males ($\chi^2 = 10.283$; $p = .0163$). The table below provides details of the distribution according to score (with a low score indicating higher risk behaviour).

TABLE 19

Behaviour Score	No. Female	No. Male	Total (%)
0	1	3	4 (10)
1	0	8	8 (20)
2	6	8	14 (36)
3	9	4	13 (33)
Total (%)	16 (41)	23 (59)	39 (100)

Highest standard passed at school was related to Question 16 (*AIDS is a white person's disease*). Of the 14.3% who had passed standard 2 to 5, 57.14% said that AIDS was a white persons' disease and 42.86% said that it was not. Of the 42.9% who had passed between standard 6 and 8, 47.62% said yes and 52.38% said no. The difference was more significant for those who passed standard 9 or 10, with 14.29% saying that AIDS is a white persons' disease and 85.71% saying that it is not ($\chi^2 = 6.965$; $p = .0307$). Thus higher education achieved tended to influence subjects' stereotyped view.

Age was significantly related to question 7: *Do you ever have partners other than your regular partner/s?* ($\chi^2 = 10.648$; $p = .0308$). Subjects in the 17 to 20 year age group and the 35+ years age group tended to not have partners other than their regular partner. However, this trend reversed in the 20 to 35 year age group. 90% of the 35+ age group did not, whereas 85.7% of the 20 to 35 year age group did report having partners other than their regular partner. There was a highly significant relationship between age and the behaviour scale scores ($\chi^2 = 29.11896$; $p = .0038$), indicated in the table below.

TABLE 20

Behaviour Score	17-20	21-25	26-30	31-35	35+	TOTAL
0	1	2		1		4
1		2		5	1	8
2	6	2	3	1	2	14
3	2	1	3		7	13
TOTAL	9	7	6	7	10	39

6.4.2.2 Community health issues

TABLE 21

Relationship: Item	χ^2	p
1. Comhealth ⁷ x Q16 ⁸	12.219	.0067
2. Commill ⁹ x Q7 ¹⁰	6.912	.0315
3. Commill x Q21 ¹¹	9.226	.0099
4. Commill x Selfhealth ¹²	24.494	.0399
5. Selfhealth x Development ¹³	19.328	.0072
6. Selfhealth x water ¹⁴	16.249	.0229
7. Water x cause water ¹⁵	5.455	.0195

⁷ How healthy is your community? (Interview).

⁸ AIDS is a white people's disease. (Questionnaire).

⁹ Are there illnesses affecting your community? (Interview).

¹⁰ Do you ever have partners other than your regular partner/s? (Questionnaire).

¹¹ Condoms are a government plot to control the population (Questionnaire).

¹² What aspects of health directly affect you? (Interview).

¹³ What are the urgent needs of the community with regards to health? - development (Interview).

¹⁴ What are the urgent needs of the community wrt health? - water supply (Interview).

¹⁵ The cause of illness affecting the community - lack of water facilities (Interview).

8. Cause sanitation ¹⁶ x sanitation ¹⁷	9.046	.0026
9. Cause sanitation x person ¹⁸	15.976	.0011
10. Cause sanitation x blame ¹⁹	10.99	.0118
11. Cause water x you ²⁰	14.31	.0138
12. Cause water x person	13.089	.0044
13. Cause water x illcholera ²¹	7.514	.0061
14. Cause none ²² x person	31.113	.0000
15. Cause personal ²³ x person	31.113	.0000

With regard to perceptions of health and illness in the community, item 4 in Table 21 shows that most people who said that illnesses affect their community said they were personally unaffected by problems relating to health (78.12%). Those who were personally affected listed STDs, kidney problems, sanitation problems, lack of housing (all 3.13%) and lack of water (9.38%) as health issues which affected them. In item 2, of those saying they had partners other than their regular partner, 76.47% were of the opinion that there were illnesses affecting their community, 5.88% were not, and 17.65% were not sure. Of those who said they had no partners other than their regular partner, 54.55% said they were aware of illness, 40.9% were not, and 4.55% were not sure. Item 3 shows that people with illness affecting their community tended to say that condoms were a government plot, whilst item 1 shows that people who judged health in the community as fair or good tended to say that AIDS is not only a white person's disease, and conversely those who said health was bad tended to say AIDS was a white person's disease.

¹⁶ What is the cause of illness in the community? - lack of sanitation (Interview).

¹⁷ What are the urgent needs of the community with regards to health? - sanitation (Interview).

¹⁸ Illness due to personal (i.e. controllable) or environment (i.e. outside of personal control)? (Interview).

¹⁹ Who is responsible for the illnesses that occur in your community? (Interview).

²⁰ What do you do to prevent illnesses? (Interview).

²¹ Which illnesses affect your community? - cholera (Interview).

²² The cause of illness in the community - none or not sure (Interview).

²³ The cause of illness in your community - personal contact (Interview).

Regarding aspects of health personally affecting the subject, item 6 shows that those who identified water needs in the community were either unaffected personally (52.63%) or were affected by a lack of water (47.37%). Those who did not identify water needs had varied personal health problems, with the majority being unaffected (73.33%) and other problems listed as menstruation, drunkenness, lack of water, kidney problems, sanitation, housing (all 3.33%) and STDs (6.66%). In item 5, most who did identify development needs in the community were either personally unaffected (60%) or were affected by drunkenness (20%) or lack of housing (20%). Of those who did not identify development needs, most were unaffected personally (65.9%) or were affected by lack of water (22.72%).

The rest of the items in the table deal with the perceived cause of illness in the community and how this relates to various other responses. Item 7 shows the link between perceived cause and identified need, with 77.77% of people who identified lack of water as a cause of illness saying that the community needs water supplies above all else, whilst 70.73% of those not identifying water as a cause of illness also did not prioritise water as a need. A similar finding occurs in item 8, with 46.15% of those identifying sanitation problems as a cause of illness identifying sanitation as a community need. 94.6% of those not identifying it as a cause also did not list sanitation as a need. Item 9 shows that most of those who chose poor sanitation as a cause of illness thought it was an environmental or external problem (69.23%) and therefore outside of personal control, or both an environmental and personal problem (23.08%). Item 10 shows that many of those identifying poor sanitation as a cause of illness thought the authorities were responsible (46.15%), whilst those not identifying poor sanitation tended to not blame anyone or be unsure (66.66%).

Item 13 shows a relationship between lack of water (or poor water supply) and cholera as an illness identified as affecting the community, with most subjects identifying cholera also identifying water as a cause (66.66%). Most of those not identifying cholera also did not identify poor water as a cause of illness (88.64%). Item 12 shows that all of those who saw poor water as a cause of ill health attributed this to

environmental or external rather than personal (or internal) cause. Item 11 shows that most people identifying poor water as a cause of ill health identified good hygiene as a way they could prevent illness (62.5%), whereas the majority of those not identifying lack of water as a problem thought that illness could be prevented by attending a clinic.

In item 15 most subjects who did not mention personal contact as a cause of illness thought that poor health was attributable to an external or environmental determinant (48.65%), or were not sure (43.24%). Of those who did, 50% thought it was an internal or personal issue, 33.33% thought it an external or environmental issue, and 16.67% thought it was attributable to both. Item 14 shows that those that were not sure about the cause of illness were also not sure as to whether it was attributable to external or internal determinants (93.33%).

6.4.2.3 AIDS-specific issues

There were certain significant AIDS-specific relationships between items on the questionnaire and variables identified during the content analysis of interviews:

TABLE 22

Relationship: Item	χ^2	p
1. Q1 ²⁴ x Q5 ²⁵	5.756	.0164
2. Q1 x Risk Behaviour Score	9.123	.0277
3. Q11 ²⁶ x Knowledge Score	27.636	.0037
4. Q11 x Stereotype Score	18.268	.0056
5. Q12 ²⁷ x endanger ²⁸	15.450	.0306

²⁴ Do you think that YOU could ever get AIDS? (Questionnaire).

²⁵ Are you worried that you might get AIDS? (Questionnaire).

²⁶ If you were worried that you were infected with the AIDS germ, would you go for a blood test? (Questionnaire).

²⁷ Do you think any of your friends could get AIDS? (Questionnaire).

²⁸ Who is most endangered by AIDS? (Interview).

6. Q16 x getsex ²⁹	5.7951	.0161
7. Q18 ³⁰ x Q24 ³¹	6.2937	.0430
8. Q22a ³² x Q22b ³³	8.0515	.0045
9. Q24 x Risk Behaviour Score	20.138	.0098
10. Water x Risk Behaviour Score	10.098	.0388
11. Speak ³⁴ x Knowledge Score	61.281	.0000
12. Speak x Efficacy Score	17.343	.0267
13. Getsex x person	9.307	.0255
14. Getns ³⁵ x prevent ³⁶	19.076	.0019
15. Vulnerability Score x endanger	53.816	.0219
16. Vulnerability Score x Q15 ³⁷	9.3183	.0253
17. Vulnerability Score x Q17 ³⁸	21.8181	.0001
18. Vulnerability Score x Q28 ³⁹	8.0954	.0441

In item 1, of those who said they were not worried about getting AIDS, none thought they could ever get AIDS, and of those who said that they could get AIDS, all were worried that they might. 61.1% of those saying that they could not ever get AIDS were worried that they might.

²⁹ How does someone get AIDS? - sexual intercourse (Interview).

³⁰ People like me never get AIDS (Questionnaire).

³¹ It is good that people with AIDS die (Questionnaire).

³² AIDS can be cured by a doctor (Questionnaire).

³³ AIDS can be cured by a traditional healer (Questionnaire).

³⁴ Subject had someone speak to them about AIDS (Interview).

³⁵ How does someone get AIDS - not sure (Interview).

³⁶ How can AIDS be prevented? (Interview).

³⁷ AIDS and HIV are the same thing (Questionnaire).

³⁸ People with AIDS always die (Questionnaire).

³⁹ Would you work with someone who had AIDS? (Questionnaire).

Item 2 shows a significant relationship between the risk behaviour score and personal awareness of vulnerability to AIDS. Those who said that they did not think they could ever get AIDS tended to be less at risk of contracting HIV, with 70% of those who responded having a score of 2 or 3. Of the 23% of respondents who said they could get AIDS, 33% scored 1 (high risk) on the scale, and 67% scored 2 (average risk).

Items 3 and 4 show highly significant relationships between intent to undergo a blood test and the knowledge and stereotype scores. Those who said they would not go for a blood test scored high on the knowledge scale, and were less stereotyped than people saying they would. Those who said they would go for a test tended to get average scores on the knowledge scale, and range from very stereotyped (37.93%), to average (13/29%), through to not stereotyped (17.24%).

In item 5, most of those who thought that their friends were vulnerable to AIDS thought that both sexes were most endangered by AIDS (59.26%), with 14.81% considering women to be endangered, and 18.52% considering men to be endangered.

Of the 61.2% of people interviewed who chose sexual intercourse as a mode of transmission, the majority did not say that AIDS is a white people's disease (80%), whereas of the 38.8% expressing some other mode of transmission, 57.89% said that it was a white person's disease (item 6).

Item 7 shows that more of those thinking that it was not good that people with AIDS die also thought that they could get AIDS (66.67%), whereas most of those saying that people like them never get AIDS thought it was good that PWAs die (69.23%). Item 9 shows that those answering in the affirmative to Q24 tended to score on the higher risk end of the behaviour scale, whereas those saying it was not good that PWAs die tended to have less risky behaviour.

An interesting and highly significant relationship was found between responses referring to doctors and traditional healers and a cure for AIDS (item 8). More

respondents thought a traditional healer could cure AIDS than those who thought a medical doctor could cure AIDS, with exactly half of those who responded saying that a traditional healer had a cure for AIDS. Of these, 68% also said that a doctor could cure AIDS. Of those who said a traditional healer could not cure AIDS, only 24% said AIDS could be cured by a doctor, and 86% said it could not. 46% of those who responded said a doctor could cure AIDS, and 54% said a doctor could not cure AIDS.

Of the 50% of the sample who thought AIDS could be cured by a traditional healer (or were not sure), 78% thought it could be cured by a doctor as well, whilst 32% thought it could only be cured by a traditional healer. Of the 46% who thought it could be cured by a doctor (or were not sure), 74% thought it could be cured by both whilst 26% thought it could be cured only by a conventional medical doctor.

Item 10 shows that those not identifying a need for water in their community tended toward more risky behaviour, and those who did identify water as a need tended toward less risky behaviour.

A highly significant relationship exists between the knowledge score and the variable relating to whether the subject has heard people speak of AIDS (item 11). Those having heard someone speak of AIDS tended to have an average to above-average knowledge score (with an overall average score of 6.77), but this was similar for those who had not heard someone speak of AIDS (average score of 6.41). A significant relationship also exists between the subject having heard someone speak about AIDS and the efficacy score (item 12), with those who had heard someone speak of AIDS scoring slightly higher on average (average score of 2.39) than those who had not (average score of 1.93).

Item 13 shows that of those who identified sex as a transmission route, 42.31% said that it was attributable to environmental or external determinants, 50% said they were not sure whether it was attributable to environmental (external) or personal (internal), and 7.69% said it was due to both.

In item 14, the highly significant relationship shows that those who were not sure as to how one gets AIDS were mostly also not sure about how to prevent AIDS (60%).

Item 15 shows an interesting significant relationship between the vulnerability score and subject's opinion as to who is most endangered by AIDS. Of those who said women were most endangered, 36.36% were less aware of their own vulnerability, and 63.63% were more aware. Of those saying men were the most endangered, 37.5% were less aware of their vulnerability and 62.5% more aware. Of those choosing both sexes as most endangered, 22.73% were less aware and 77.27% were more aware of their own vulnerability. All of those saying they were not sure who was most endangered were less aware of their vulnerability.

In item 16, 71% of those who said that HIV and AIDS are not the same thing tended to be more aware of their own vulnerability to contracting HIV, scoring 2 or over, with the other 29% scoring 1 on the vulnerability scale. 52% of those who said HIV and AIDS were the same thing also scored 2 or over, but 26% scored 1, and 22% having a score of 0, indicating a low level of awareness of personal vulnerability.

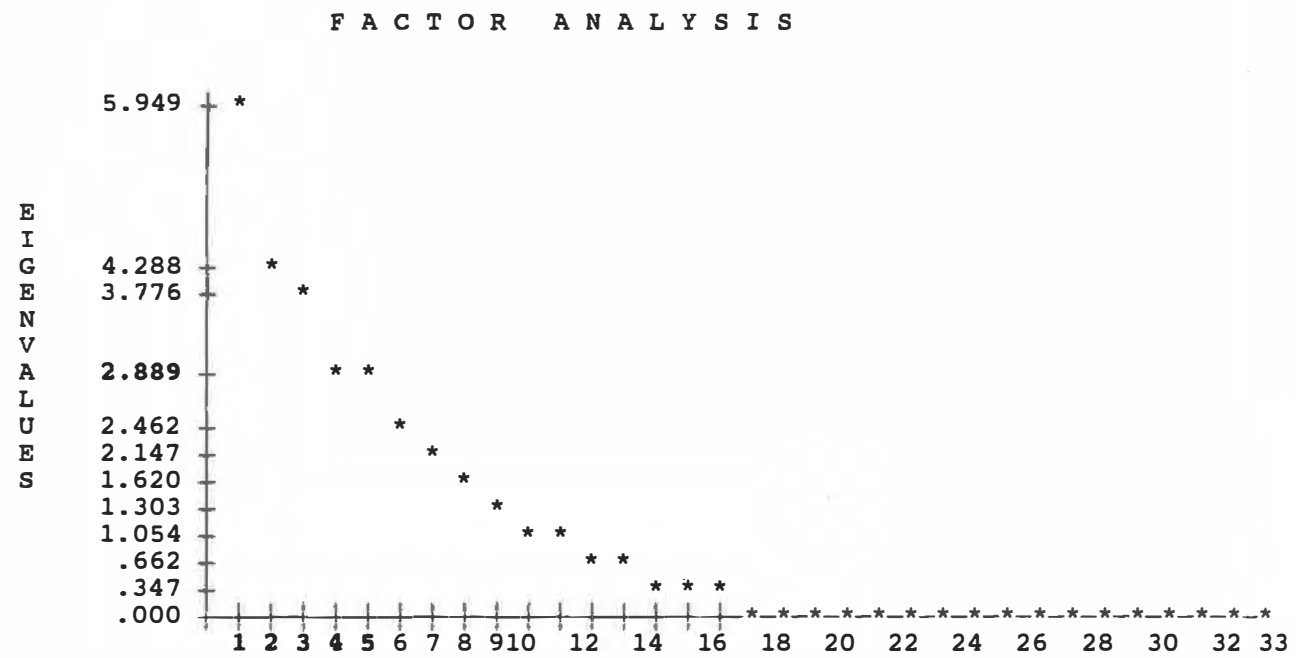
Also interesting is the highly significant relationship between the vulnerability score and Q17 which states that people with AIDS will always die. Those who answered in the negative (only 8.3% of the 48 who responded) all had a low personal awareness of vulnerability to contracting HIV, with a score of 0 on the scale. In item 18, 44.9% of the 49 subjects who responded said they would work with someone who has AIDS, and 55.1% said they would not. Of those who would not, 67% had an average to high vulnerability score, whilst 55% of those who would had scores of 0 or 1, indicating a low level of awareness of personal vulnerability.

6.5 Factor Analysis

Principal component analysis yielded 11 factors with eigenvalues greater than 1.0, which accounted cumulatively for 89.9% of the variance. The factor analysis was then

restricted to 5 factors. The rotated factor matrix and the factor transformation matrix are included in Appendix D. The 5 factors were those with an eigenvalue greater than 2.5, as indicated in the scree plot below.

Figure 4



The respective factor eigenvalue and percentage of variance are provided in the following table.

TABLE 23

<u>Factor</u>	<u>Eigenvalue</u>	<u>% Variance</u>	<u>Cumulative %</u>
1	5.94869	18.0	18.0
2	4.28796	13.0	31.0
3	3.77569	11.4	42.5
4	2.95479	9.0	51.4
5	2.88866	8.8	60.2

Variables with a factor loading of >0.5 were chosen from the factor matrix. The variables for each factor, together with their factor loading value in parentheses, are included in the table below.

TABLE 24

FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
Your health needs (0.74)	Sex (0.57)	Urgent community need = water (0.68)	How healthy is your community? (0.62)	Urgent community need = health facilities (-.70)
Get AIDS from promiscuity ((0.60)	Has this illness affected you? (0.82)	Cause of illness = poor water (0.68)	Get AIDS through sex (0.69)	Pinkeye = illness affecting them (-.051)
Knowledge scale score ((0.63)	Can control AIDS with a condoms (0.80)	Get AIDS from blood (0.51)	Get AIDS through blood (0.66)	Cause of illness = diseases (-.055)
Stereotype scale score (0.77)	Cholera = illness affecting them (-0.68)	Age (0.51)	Risk Behaviour scale score (0.62)	
No. partners - last 2 mths (0.58)	Rashes & skin conditions affect them (-0.84)	Urgent community need = sanitation (-0.60)	Not sure how get AIDS (-0.66)	
Sex (0.51)	Efficacy scale score (-.63)	Cause of illness = poor sanitation (-.62)	Vulnerability scale score (-.061)	
Urgent community need = sanitation (0.51)		Geographic definition (-0.85)		
Cause of illness = personal contact (0.51)				
Cause of illness = none (- 0.52)				

Each factor yielded a positively grouped and negatively grouped construct, and each are described below.

6.5.1 Factor 1

A group of males who have the same health needs as the community, feel that AIDS is caused by promiscuity, have a poor knowledge of AIDS, are more stereotypical in

their beliefs and attitudes, believe that ill health is caused through personal contact with others who are infected, have had one or no sexual partners in the last two months, and who believe that the community is in need of sanitation resources in order to improve health in the community.

A group of women who have different health needs to those of the community, do not mention promiscuity as a cause of AIDS, have a higher knowledge of HIV/AIDS, are less stereotyped in their beliefs about AIDS, have had more than one sexual partner or no partner in the last two months, do not identify sanitation as a community health need, do not identify personal contact as a cause of ill health, and who are not sure as to the cause of ill health in the community.

6.5.2 Factor 2

A group of urban males who feel that AIDS is a direct threat to them, believe that the threat of AIDS can be controlled with a condom, did not identify cholera or rashes as illnesses which affect their community, and who feel that they can be effective in preventing infection with HIV (more efficacious).

A group of rural females who are not affected directly by AIDS (or are not sure), do not believe that AIDS can be controlled with a condom (or are not sure), who did identify cholera or rashes as illnesses which affect their community, and who feel less able to prevent HIV infection (less efficacious).

6.5.3 Factor 3

A younger rural group who do not identify sanitation as a health priority in their community, do not identify lack of adequate sanitation as a cause of illness in their community, feel that illness is caused due lack of adequate and clean water, identify a need for water provision in order to improve community health and believe that AIDS is spread through blood.

An older urban group who identify sanitation (and refuse removal) as a health priority in their community and identify lack of sanitation (and refuse removal) as a cause of illness, do not identify water provision as a health need and do not identify poor water provision as a cause of illness, and who do not mention blood to blood contact as a means of spreading AIDS.

6.5.4 Factor 4

An urban group who feel that the overall health in the community is fair or good, who believe that one can get AIDS from sexual intercourse and infected blood, who score higher on the risk behaviour scale, did not say they are unsure how a person can get AIDS, and who feel more vulnerable to HIV/AIDS.

A rural group who feel that the overall health in the community is bad (or have no opinion), do not mention sex or blood as a way of contracting AIDS, who feel less vulnerable, are not sure how one contracts AIDS, and who have less high-risk behaviour with regards to AIDS.

6.5.5 Factor 5

A group who do not see a need for health facilities in the community, and who do not mention pinkeye or disease as a community health problem.

A group who feel that health facilities such as clinics are needed to improve health in the community, and who mention pinkeye and disease as a cause of health-related problems in the community.

CHAPTER 7

DISCUSSION

This study aims to answer a number of questions raised from a review of the literature with particular emphasis on informing intervention programmes in KwaZulu-Natal. Two broad groups of questions are posed, on the one hand, to explore the nature of relationships between variables common to many health behaviour models, including demographic variables, and on the other hand, to investigate the stated and perceived health priorities and needs of those sampled. This is done with the further aim of investigating the impact that contextual issues and personal motivation have on behavioural intention with regards to AIDS risk behaviour. The questions raised from a review of literature regarding explanatory models of health protective behaviours, as well as cultural and gender issues which impact upon the processes and elements within these models, (outlined in Chapter 4), are addressed. The discussion also considers those results which may be of particular interest to anti-AIDS programmes in the KwaZulu-Natal region.

Q1: *What relationship exists between variables identified from theories of health behaviour (knowledge of HIV/AIDS, perceived vulnerability to HIV/AIDS, perceived efficacy of health-protective behaviour, stereotypical attitude, and risk behaviour), and what is their relationship with certain demographic variables (sex, geographic definition as rural or urban, age, and level of education)? Are these elements sufficient in explaining the behaviours of respondents in this study?*

7.1 Elements of Health Behaviour Models

Perkel (1992) presents six core conceptual elements common to the many models that predict health behaviour, namely knowledge, perception of personal vulnerability,

beliefs about efficacy and accessibility of health care, social network, and demographic characteristics. He argues that models that address cognitions in health decision-making need to include personality variables that impact on such decision-making. The present study does not attempt to elaborate on the psychodynamics of such decision-making, but rather explores the nature of, and importance of, contextual variables in the health decision-making equation. The scale scores reflect some of the elements common to models presented in the literature.

Levels of **knowledge** were average, indicating that subjects lacked the high levels of accurate knowledge that are necessary for behaviour change, as claimed by the HBM (Janz & Becker, 1984), TRA, PRECEDE (Mullen *et al*, 1987), and Protection Motivation Theory (Kirscht & Joseph, 1989). The fact that there was a significant difference between rural and urban subjects for **knowledge** score in the sample is an indication that the socio-economic environment could have an impact on the ability of people to make decisions regarding their health. Both rural and urban scores proved to be lower than one would expect, given the high profile of HIV/AIDS in the KwaZulu-Natal area. Knowledge is regarded as being an essential yet inadequate element for predicting health behaviours in models reviewed in the literature, and as such there is a clear indication that, in the areas studied, people still do not have the high level of knowledge necessary to protect themselves adequately. Levels of education could explain this discrepancy, with the majority of the rural sample having a lower standard of education than the urban one. An analysis of covariance would be useful in establishing the influence of level of education on peoples' knowledge about HIV/AIDS. Unfortunately, the measure of education achieved which was used in the present study was not suitable in adequately discriminating between different levels of education.

The average knowledge score in the present study supports the recent study by Du Plessis *et al* (1993), in which levels of knowledge were average, yet subjects continued to be confused by more complex elements required for an informed knowledge of the virus and how it is spread. Similar findings were also reported by Ratsaka and

Hirschowitz (1993) and Tengani (1993). The majority of subjects responding to the structured interview in the random sample knew HIV is spread through sexual intercourse, yet 12% were unsure about how it is spread. This is a disturbing statistic, given that knowledge is regarded as being an essential element for predicting health behaviours in most models of health behaviour. Furthermore, most respondents were unable to account for the cause of HIV, indicating that messages regarding transmission were not being linked to causes of illness (particularly the duplicity of transmission routes), thus reducing the likelihood of perceptions of personal threat. Although fear-drive and dual-process models of health behaviour have been criticised for ignoring the fact that fear may produce feelings of helplessness which in turn reduce self-efficacy and encourage hopelessness on the part of those affected (Mullen *et al*, 1987; Ingham *et al*, 1992; Perkel, 1992), the importance of perceived threat is emphasised in most models of health behaviour (Janz & Becker, 1984; Mullen *et al*, 1987; Valois *et al*, 1988). One can expect that confusion about transmission routes will have a great impact on the ability to accurately perceive personal threat.

An element regarded as essential in the HBM and the TRA (and most of their derivatives), self-efficacy, is dependant on accurately estimating the ability to prevent or control the perceived threat. Thus knowledge of how to prevent HIV is crucial to the cognitive rational decision-making process described in the equations of the HBM and TRA. Although knowledge of prevention varied, close to 28% of the sample were either unsure or were ill-informed about prevention. This is supported by the highly significant relationship in item 14 of Table 22, where those who were not sure as to how one gets AIDS were mostly also not sure how to prevent AIDS. The structured interviews helped to elaborate upon the questionnaire scores, confirming that although people had heard *some correct information*, when asked more in-depth questions they did not have a sufficiently sophisticated knowledge of what HIV/AIDS is, how it is transmitted, and how to prevent it. Item 14 in Table 22 is pertinent, showing a highly significant relationship between general knowledge and knowledge of prevention, with a majority of those who were not sure about how AIDS is transmitted also being unsure about how AIDS can be prevented. Ingham *et al* (1992) refer to the fact that people

have a range of understandings about terminology, and that messages are often ambiguous. The findings of the present study support this, and go further to suggest that basic knowledge does not naturally mean that people have sufficient depth and sophistication of knowledge to accurately inform health-protective behaviours.

Perceived personal **vulnerability** scores were not significantly different for urban and rural subjects, both showing scores indicating average to low perception of personal vulnerability. However, this perception of not being at great risk of HIV/AIDS was not complemented by a less at-risk **behaviour** score. This indicates that there was no perceived link between a low perception of vulnerability and a low personal risk. The HBM and TRA predict that high perceived vulnerability (based on accurate knowledge) coupled with high level of self-efficacy should lead to less at-risk behaviour (Mullen *et al*, 1987). The lack of a significant relationship between these variables, together with the average (to low) risk behaviour score, may indicate that there are factors other than the elements measured in the scales, which have an influence on behaviour. The urban sample tended to have a higher incidence of multiple-partner relationships, indicated in Tables 16 and 7, with a propensity toward males reporting more sexual partners (over the two-month period preceding the study) than females. Amongst the urban subjects almost 48% of respondents admitted to having partners other than their regular partners (as compared to 37.5% amongst the rural subjects). Another indicator of real risk is the prevalence of STDs (Table 9). An extremely high 36% of urban respondents, as opposed to 24% of rural subjects, reported having been treated for an STD. The reluctance to link real threat with regard to behaviours practised and personal vulnerability to contracting HIV is congruent to findings in diverse populations throughout the world, in African heterosexual populations (Barnett & Blaikie, 1992; Visser *et al*, 1993), amongst the youth (Ingstad *et al*, 1992), amongst commercial sex workers (Day *et al*, 1988) and amongst homosexual populations (Taute, 1991; Rocha-Silva, 1993).

More urban respondents thought they could contract HIV than rural respondents, indicated in Table 3, and, of the whole sample, the majority of subjects said they did

not think they could ever contract AIDS, or were unsure about this. In terms of Rogers' Protection Motivation Theory (1975, in Beck & Frankel, 1981) this does not indicate a propensity toward protective behaviour, for the essential elements of perceived seriousness of the health threat *together* with personal susceptibility are missing.

In contrast to this finding, the majority of subjects responded that they were worried they might contract AIDS (Table 5), indicating that there is a difference between the perception of possible risk, consequent worry, and the accurate appraisal of *personal* risk. Visser *et al* (1993) refer to the tendency to recognise broad risk, but to reject personal vulnerability due to defence mechanisms and misconceptions. The influence of internal personal dynamics is also identified by Perkel (1992) and Perkel *et al* (1991), who refer to the importance of considering personality variables upon personal interpretation of peer expectations and risk-taking behaviour. Investigating the relationship between Questions 1 and 5, it is significant that of those who indicated that they never worried about AIDS, none thought they could get AIDS, and that all of those saying they could get AIDS also indicated that they were worried about it. Perceived personal vulnerability seems to be dependent on accurate appraisal of risk, which is supported by having less misconceptions about, and a better understanding of, AIDS. As indicated in Table 22, realising that both sexes are at risk of contracting AIDS was linked to a higher awareness of personal vulnerability (Item 15). Differentiating between HIV and AIDS was related to a higher awareness of personal vulnerability (Item 16). Knowing that people with AIDS die also links with a higher awareness of vulnerability (Item 17). These indicate that a more accurate appraisal of threat and consequence leads to a higher awareness of personal vulnerability, which supports the predictions of both the HBM and TRA. Thus there is evidence in the present study of the usefulness of ascertaining the links between such elements in predicting intention and awareness.

One indicator that awareness of personal vulnerability to AIDS can influence behaviour is found in Item 18 (Table 22), which showed a relationship between awareness of

personal vulnerability and willingness to work with someone who has AIDS. This result showed that those with a high personal vulnerability score indicated they would not work with someone with AIDS, and those with a low personal vulnerability score said they would work with a person living with AIDS. There is ample proof that working with an HIV positive individual bears no risk to the person involved (Evian, 1993), so a person with an accurate knowledge of AIDS would not be expected to fear infection from those he/she works with. This could indicate a flaw in emphasising the pathway of individual rational response when considering people's cognitions regarding health protective behaviour. Misconceptions and stereotypical beliefs and attitudes may create the impression that the subject or community is aware of the threat, even with resultant perceived efficacy in avoiding that threat. However this may be a misguided assumption due to lack of accurate knowledge. Certainly this is the case amongst many of those subjects in the present study.

Results of the present study thus indicate a clear discrepancy between risk behaviour and perceived vulnerability. Although the instruments did not ascertain what the barriers were to perception of personal vulnerability, it is clear that people have difficulty in acknowledging or recognising their own actions as being risky, or being a threat to their health.

Stereotypical attitudes measured in the sample could be an indication of attitudes which tend to remove threat to identifiable "others". Such stereotypical responses were particularly prevalent with regard to condom use, as can be seen in Table 12, where 29.4% of those responding thought that "real men" don't use condoms, and 64.7% did not know whether they agreed with this or not. Ingham *et al* (1992) refer to *perceived invulnerability* as an impediment to the acceptance of the notion of rational thinking: denying the risk, having optimistic bias, prioritising other risks or health threats, and dismissing advice because it is perceived as being irrational or impractical. Croteau *et al* (1993) place such denial into a cultural context by indicating that myths regarding the sexuality and sexual practices of others help to stigmatize social or cultural groups, thereby perceptively distancing their behaviour from the cultural norm.

The relationship between intention, knowledge and stereotype is indicated by the significant relationship between Question 11 and the knowledge and stereotype scores (Table 22, Items 3 and 4). A majority of people with a higher knowledge of HIV and AIDS as well as those with a lower stereotype score indicated that they would *not* go for a blood test if they were worried that they were infected with HIV, whilst those with a lower knowledge and the majority of those who were more stereotypical in their attitudes and beliefs said they would go for a blood test. Given that testing for HIV is an anxiety-provoking affair (Evian, 1993; Siano, 1993), this could be an indication of salient appraisal of real risk (and resulting reticence) as opposed to no perceived risk due to poor judgment of personal vulnerability and a stereotypical response to such perceived vulnerability.

Furthermore, many subjects who did not perceive themselves to be vulnerable to HIV infection indicated that their friends were at risk (Table 11), particularly among the urban respondents. This gives greater credence to the notion that personal defences are at work in denying individual vulnerability. This finding could also indicate that it is socially accepted that risk behaviours, particularly the incidence of multiple partners and the rejection of condom-use, are considered to be an inevitable norm (tables 6, 8 and table 12 indicate that condom-use is infrequent with multiple partners, very infrequent with regular partners, and perceived to be "unmanly"). If the application of the Health Belief Model to HIV protective behaviours, as explained by Fishbein and Middlestadt (1989), is accepted, then the results discussed above indicate that although respondents do recognise the broad threat of AIDS as severe (Table 5), they do not appraise the threat as being a threat to themselves. Although there is an indication of awareness of vulnerability, this is not perceived as personal. This is confirmed by responses during the structured interviews where almost 94% of subjects thought they were not personally affected by AIDS. In considering these factors, there is an indication, as concluded in the HBM, that such factors alone are insufficient in dealing with the complexity of AIDS (Cleary, 1987).

The TRA and other models refer to **self-efficacy** as being integral to adopting health protective behaviours (Mullen *et al*, 1987; Weinstein, 1988; Fishbein & Middlestadt, 1989). Although the efficacy scale used in this study proved to be a weak indicator of overall perception of self-efficacy⁴⁰, results indicated an average to high perceived self-efficacy score in the total sample. Urban respondents proved to believe themselves to be efficacious⁴¹, more so than did rural subjects. Access to resources and a higher acceptance of condoms as a safer sex method could have been responsible for this. Another possibility may be found in the discovery that a higher standard of education proved to be associated with a higher self-efficacy, given that subjects in the urban sample proved on the average to have achieved higher levels with regard to education.

Factor 2 of the factor analysis provides an interesting correlation of constructs which explore the grouping of demographic and model scale score variables. An urban group of males with a perception of being personally threatened by AIDS believe that this threat can be diminished through the effective use of a condom. Positively correlated with this is a high efficacy score. The opposite is true for a rural group of women. These findings are congruent with explanations of the relationship between perceived threat and perceived self-efficacy being translated into the intention to protect ones self, as outlined in the HBM and TRA (Harris & Guten, 1979; Janz & Becker, 1984; Kotarba & Lang, 1986; Mullen *et al*, 1987; Weinstein, 1988; Valois *et al*, 1988; Kirsch & Joseph, 1989; Montgomery, Joseph, Marshall, Becker, Ostrow, Kessler & Kirscht, 1989; Johnson, Ostrow & Joseph, 1990). However, these findings also indicate that factors other than the elements directly relating to rational cognitive processes have influence over perceptions of health needs and health threats. Although the HBM, TRA and other models that emphasise rational processes all acknowledge the importance of demographic variables, they still identify the foundation of the decision-making process as the rational individual decision, which is cued or curbed

⁴⁰ The complexity of the issue and the need for simple questions reduced the scale to the sum of three items which were not found to correlate to form a reliable score - see Table 2.

⁴¹ Being efficacious refers to the person's perception that s/he is able to be successful in carrying out protective behaviour.

by such contextual and demographic factors. There is clear evidence of the positive role of identified elements such as risk behaviour, perceived vulnerability, perceived efficacy, knowledge, and attitudes and misconceptions in explaining and predicting health protective behaviour. Whether these elements are sufficient is questioned by Hunt and Martin (1988), Ingham *et al* (1992), Perkel (1992), and others.

Cross-tabulations of variables identified from the structured interviews with the measures of efficacy and knowledge, sought to elaborate upon the ability of the identified behaviour model elements in explaining and predicting AIDS-risk or AIDS-protective behaviours. Findings included in Table 22 , Item 12, indicate that having heard someone speak about AIDS was significantly related to both level of knowledge and efficacy. This finding provides support for the emphasis placed by Harre *et al* (1985) on "human agency" which focuses on people as active agents rather than passive receptors. This complements the emphasis on social processes within models such as the TRA and Rogers' Protection Motivation Theory, which emphasise the importance of response-efficacy and self-efficacy (Kirscht & Joseph, 1989). Having personal interaction, rather than the use of media material alone, as the means of information acquisition seems to enhance the ability to personalise behaviours and behavioural intention. The link between interaction at a personal level and higher levels of knowledge and efficacy thus could be an indicator of the importance of social processes and sustained social interaction in changing risk behaviour. It is through placing human behaviour firmly within its social context that one can see the extent that social processes influence behavioural decisions. This is true whether seen from an individual perspective (as discussed by Perkel *et al*, 1991, who refer to the importance of self concept in relation to knowledge, vulnerability, efficacy and risk behaviour) or from the perspective of social and environmental context.

7.2 The importance of knowledge in determining rational thinking

To further explore the role of elements identified as common to most models of health behaviour, and to establish whether such elements are sufficient in explaining AIDS-

related behaviours, cross-tabulations between demographic variables, questionnaire items and interview items were done. The most significant indicator of a relationship between level of knowledge about AIDS and behavioural intention is the finding that those who said they would not go for a blood test scored high on the knowledge scale and were less stereotyped than people who said they would go for a test. The implications of this for accurate perception of vulnerability and perceived efficacy, are discussed above. However, no similar finding occurs when considering *preventive* behaviour. Although the majority in both rural and urban samples said that they could do something about preventing AIDS, this does not seem, from the majority of the data, to be expressed from a position of accurate judgment about *what* constitutes successful preventive behaviour. Furthermore, there seems to be a considerable gap between behavioural intention and practice. 43.6% of respondents said they had partners other than their regular partners (Table 7), only 14.9% said that they use condoms with their regular partners (Table 6), and 34.6% of those who had sex with partners other than their regular partners said they used condoms with these other partners (Table 8). It is quite likely that this response includes infrequent condom use, for the way that the question was phrased unfortunately does not distinguish between regular condom use and infrequent condom use. The high incidence of STDs among the sample supports this supposition (given that condom use would reduce STDs), with 30% of the sample admitting to having been treated for an STD. This links to the documented relationship between STDs and HIV transmission, where one of the ways to decrease the incidence of HIV spread is through early and prompt treatment of STDs (Barnett & Blaikie, 1992; Schneider *et al*, 1993). These figures are more striking when considering the urban sub-sample, which shows more subjects stating they use condoms, but a higher percentage of people having sexual partners outside of their regular partnership, and a higher reported incidence of STDs.

Table 10 provides another indication of a discrepancy between behavioural intention and practice; while 50% of the sample said that they do something to prevent AIDS, whilst the evidence of multiple partners, comparatively high incidence of STDs, and relatively poor condom use (relative to what one may expect from a risk-conscious

population) indicate that actual protective behaviours are not commonplace. Unfortunately, the instrument was not adequate in determining whether this discrepancy was due to their believing that there were other ways other than condom-use, sticking to one partner, or practising non-penetrative sex, to prevent transmission of HIV. However, in the structured interviews the majority of respondents were unsure about the cause of AIDS, and very few were able to give the three known transmission routes in response to a question about how one can get AIDS. Only 14% of subjects offered condom-use as a solution, 37.2% identified sticking to one partner, and 7% gave a combination of the two. The high negative response to condom-use on religious and cultural grounds, as well as stated dissatisfaction and suspicion of ineffectiveness of condoms, questions whether these people will put stated knowledge about condom-use into action, as corroborated by the infrequency of condom-use indicated in responses represented in Tables 6, 8 and 12. This suggests that although knowledge is present, it is insufficient to translate into accurate appraisal of risk, and insufficient to render protective behavioural practices. Item 14 in Table 22, referred to earlier in this discussion, shows a highly significant relationship between knowledge about transmission and knowledge about prevention. Thus it seems that a person needs, as a basic foundation to behaviour change, knowledge about how HIV is transmitted in order to interpret ways to prevent themselves contracting HIV.

Ratsaka and Hirschowitz (1993), Visser *et al* (1993), and Tengani (1993) produced similar findings regarding evidence of some health-protective behaviour, such as condom use and partner reduction, as well as evidence regarding the importance of knowledge as a necessary yet insufficient factor. However, as found in this study, they also reflect that knowledge alone is insufficient in translating into adequate behaviour change. Evidence of efficacy and perceived vulnerability is also identified by them as important to the equation, but these, too, are insufficient in determining behaviour change or explaining the lack of it. Social concomitants are important factors in determining and influencing the ability or desire to change behaviour. Attitudes and belief systems which are predominantly socially or culturally determined are also important factors. In terms of the HBM, subjects in the present study seem to lack

perceived *personal* susceptibility, although the universal threat of AIDS is expressed and evident. Severity, then, is *not* translated into personal susceptibility, and the perceived barriers, such as cultural (e.g. the traditional need for seminal depositing and the acceptance of men having multiple partners), religious (e.g. certain faiths prohibiting condom use), political (e.g. AIDS seen as an apartheid plan to reduce the black population) and economic (e.g. inaccessibility of condoms due to poor resources and women having no decision-making power due to economic dependence on males) to condom use or one-partner relationships seem to outweigh any benefits to the subjects (Worth, 1989; Barnett & Blaikie, 1992; de Bruin, 1992; Caldwell *et al*, 1994b). This is central to the importance placed on peer norms (which are often culturally, religiously, politically or economically determined) in models such as the HBM, TRA and their derivatives. Their treatment of such obstacles to condom use or one-partner relationships is still within the paradigm of individual rational cognitive processes. Although the decision-making process must by the nature of cognition be processed within the individual, it is argued (Hunt & Martin, 1988; Ingham *et al*, 1992; Perkel, 1992) that such cognitions arrive by way of pathways that have a far greater influence over the process than is allowed for in the HBM and TRA models.

The TRA elaborates on the importance of beliefs and attitudes regarding behaviour, which help toward explaining some of the social and cognitive processes involved in decisions about health, and ultimately, behavioural practices. Emphasis is placed on the importance of subjective norms (similar to peer norms discussed above). Mullen *et al* (1987) emphasise the difference between attitude and intent. In the present study, there is sufficient evidence to show the importance of beliefs and attitudes in determining and influencing behavioural practices. Condom-use, although evident, is not an accepted norm. Only 5.9% of subjects in the sample were opposed to the notion that "real men don't use condoms". Only 32% were opposed to the statement that "only people who have many sexual partners get AIDS". The low **stereotype** score indicated a high level of stereotypical attitudes and beliefs among respondents. With regard to the cause of AIDS, apart from the majority being unsure, other respondents thought it was due to promiscuity, prostitution, and homosexuals. As reported by Skinner

(1994), there seem to be elements of the subjects' knowledge base that are not based on scientific knowledge, but rather on beliefs. His findings indicate that unacceptability of condoms and culture-specific explanations of behaviour form social norms. Furthermore, stereotyped views and misconceptions have been found to be linked to culture (Setiloane, 1990; Zazayokwe, 1990; Khosa, 1991 and Nene, 1991), with many of the misconceptions also deriving from social, ethnic and political issues, such as seeing AIDS as a white person's disease, a disease of homosexuals and as an apartheid-derived tool to suppress black people.

The highly significant relationship between question 22A and question 22B provides an example of how traditional belief systems influence decision-making. Ingstad (1990) describes the way that some Botswanan people believe that AIDS is merely a traditional disease caused by "bad blood", and that it is therefore curable, depending on the influence of the local traditional healer, and whether he/she sees AIDS as a traditional disease or a modern one. Karim *et al* (1993) describe similar traditional explanations amongst rural Zulus who see AIDS as a new name for a traditional illness, "*ilumbo*". Considering the relationship between the two questions which look at beliefs regarding a cure for AIDS, the number of subjects who thought that AIDS could be cured by a doctor were similar to the number who thought it could be cured by a traditional healer. The high number of people (approximately 50%) who thought that AIDS could be cured, or were not sure, is further indication of a lack of accurate information or the influence of applying information selectively, and within belief systems. 34% of the sample thought it could be cured by both a doctor and traditional healer.

Given that most prevention messages utilise the *threat* of incurable terminal illness in attempting to motivate behaviour change, this proves to be a disturbing statistic. If external variables (such as expense of condoms and difficulty in gaining access to them, cultural beliefs about the acceptability of multi-partner relationships, and the cultural unacceptability of women making decisions about sex), and internal variables (such as embarrassment, self-esteem and fear of retribution or loss) are to be confronted and acted upon within the framework of a rational decision-making process,

the perception of ultimate gain (i.e. long life) when rationalised with the ultimate consequence for the short-term pleasure (i.e. incurable terminal illness) would need to be extremely powerful and demand a sophisticated cognitive rationalising process on the part of the individual. Considering this result within the framework of the HBM, the perceived severity (incurable illness that leads to death) would need to outweigh the perceived barriers (cultural beliefs, socio-economic circumstance, personality constraints) in order for the rational cognitive process to lead to preventive behaviour. The influence of traditional beliefs is further seen in the finding that, apart from the finding that more people thought traditional healers had a cure, more of the sample thought AIDS could be cured by a traditional healer and not by a conventional doctor than *visa versa*. Thus the belief in the abilities of traditional medicine tended to be more powerful than that in conventional medicine. There were no significant differences between rural and urban samples with regard to both of these questions, suggesting that such cultural influences are inherent in both samples. It is possible that such cultural influences would be even more evident in extremely traditional and remote rural areas, as found by Karim *et al* (1993). This supports Mullen *et al* (1987) in their critique of the HBM, TRA and PRECEDE models, in which ethnicity (together with other demographic characteristics such as age and gender) is considered to be an important predictor of health behaviour over and above the components of the models. Although such cultural beliefs are incorporated in these models through the notion of contextual and personal barriers and cues to behaviour, both of which affect (as discussed above) perceived vulnerability, the emphasis remains on the way that they influence the rational decision-making process. The findings discussed above provide more evidence for considering such contextual variables as determinates of the path that cognitions follow, thus placing much greater emphasis on their importance. It is proposed that this should be the primary consideration at an intervention level through incorporating contextual and personal variables, which affect the variables contained in models such as the HBM and TRA, as determining elements in models of health protective behaviour.

7.3 The influence of demographic variables

If the proposal to place contextual variables at the foundation of models which predict health is to be substantiated, demographic variables should significantly relate to the established elements described in most cognitive models of health behaviour. Mullen *et al* (1987), Hunt and Martin (1988), Ingham (1991) and Ingham *et al* (1992) all see such contextual and personal barriers and prompts as playing an inherent role in determining behavioural decisions. In order to investigate whether each of the behavioural variables identified within the present study is influenced by, or influences, demographic variables, the relationship between primary demographic determinants and scale scores was investigated.

There are clear indications that the socio-economic circumstance and cultural norms influence decisions regarding health. Sex also proved to be significant in predicting health protective behaviour, as can be seen in the highly significant difference indicated by the analysis of variance on behaviour scale score for sex. Females scored higher, with less at-risk behaviour than men. This relationship is elaborated upon in Table 19, which clearly indicates that women have less at-risk reported behaviour than males. More males than females said they had partners other than their regular partners, and this was confirmed by the finding that males reported having had multiple partners in the two months preceding the study. Males also proved to be more aware of their vulnerability than females and seemed to believe that they are more capable of successful preventive behaviour than females. One should bear in mind, though, that reported behaviour and actual vulnerability are different (given that women may have fewer reported partners), but because women may have a sexual relationship with a male who has many partners, they are also placed at risk. The finding that men believe that they are more capable of successful preventive behaviour links with the argument that women have less control over their sexual decision-making. This substantiates the opinions provided by Barnett and Blaikie (1992) and de Bruin (1992), and emphasises the importance of addressing womens' inability to protect themselves due to cultural and socio-economic circumstance.

Gender roles and sex roles are inherent in determining control over sexual decision-making (Worth, 1989; Panos, 1990; Barnett & Blaikie, 1992; de Bruin, 1992; Heyns, 1992; Schoub, 1992; Croteau *et al*, 1993; Karim *et al*, 1993; Ratsaka & Hirschowitz, 1993; Skinner, 1993; Caldwell *et al* 1994b; Orubuloye *et al*, 1994), and the results from the present study clearly indicate that gender differences influence behaviour. Factors 2 and 3 (Table 24) distinguish sex as being a determinant, with Factor 1 distinguishing a correlation between sex, health needs, knowledge, stereotype, number of partners, and perceptions of the cause of illness. A clustering of attributes includes males tending to be stereotypical, having a poorer knowledge of HIV/AIDS, and feeling that AIDS is caused through promiscuity. From the finding in the study that more males report having been treated for an STD than females (although not significantly related) one could hypothesise that they have been exposed to the consequences of sexual behaviour, and therefore one may expect that males would have a high perceived vulnerability (as found in the present study). Furthermore, the finding that males have a higher perceived control over condom use and sexual decisions, could lead to the hypothesis that males would have a higher self-efficacy score than females (also substantiated in the present study). But, given the fact that the present study substantiated both these hypotheses, but still found that males had a higher risk behaviour score, and reported multiple partner relationships, the exposure to consequence, higher perceived vulnerability and higher self-efficacy is not translating into a change in behaviour in the sample studied. Thus there would seem to be determinants other than those used to explain behaviour in rational decision-making models.

On the other hand, given the irrefutable evidence in the literature of the powerlessness of women, the seemingly fatalistic recognition by females that they have little control over preventing exposure to the virus (indicated in Factor 2, and discussed in more detail in section 7.1 above), is realistic given the cultural and social context. Women tend to be less educated and have a higher degree of semi-literacy (Barnett & Blaikie, 1992; de Bruin, 1992), which also makes them vulnerable to less well-informed decision-making. Black women also fit with the multiple culture-specific group

identified by Croteau *et al* (1993), where they are prone to multiple discrimination, being historically powerless because they are black in a racially-influenced society, as well as being women in a society in which men are historically, socially, economically and culturally advantaged. Preston-Whyte's (1992) conclusion that with regard to AIDS, people are driven to action by circumstance and not choice, holds true. The findings discussed above which document the gender differences in the sampler support Ingham *et al* (1992) in their identification of ideological and power issues (in this case gender and race-based) as complicating the "rational" decision-making process.

Another demographic variable included was geographical definition (urban/rural). Some of the differences have been discussed above in relation to the elements of health behaviour models. Further examples of significant differences based on geographical definition are provided here. Urban people believed they were capable of successful preventive behaviour more so than rural people. Urban people also proved to have a more accurate knowledge of HIV/AIDS than rural respondents. Various authors have indicated the importance of having access to resources such as education, clinics and condoms (Barnett & Blaikie, 1992; Webb, 1993) and that rural areas are less resourced than urban areas. This leads to different health priorities, and consequently less perceived threat of AIDS (Webb, 1993). The results of the present survey indicate that urban people are more aware of HIV/AIDS and feel more able to deal with the threat posed by AIDS. This should be seen, however, in the light of other findings described in answer to the previous questions in this chapter, for even though this trend is evident, it is not pervasive.

Level of education was significantly related to one item on the stereotype scale. People who finished school at a lower standard of education tended to believe that AIDS is a white person's disease. Thus level of education was found to be significantly related to stereotypical response. This indicates that higher education may help to reduce stereotyped attitudes, and supports the notion that attitudes and knowledge are important factors in determining behavioural response and decision-making.

The demographic variable, age, was found to be related to whether a person had partners other than their regular partner. The findings showed that, in the population sampled, people between 17 and 20 years and older than 35 tended not to have partners other than their regular partner. The link between age and risk behaviour (Evian, 1993; Visser *et al*, 1993; Barnett and Blaikie, 1992) and age and prevalence of HIV (Swanevelder, 1994; Doyle, 1991) has been reported in the literature. The trend is to find higher risk and higher prevalence of HIV in the 17 to 29 age group amongst females, and the 22 to 39 age group amongst males (Swanevelder, 1994). The significant relationship between sex and risk behaviour scale score discussed above, and between age and the risk behaviour scale score reported in the results, confirms this. However, reported prevalence differs from the reported risk behaviour in the population sampled in this study, with those in the 21 to 25 and 31 to 35 year age groups reflecting a higher risk behaviour score.

It thus seems that certain demographic variables do have a significant relationship with variables that make up the components of cognitive models of health protective behaviour, but that the design of the present study did not sufficiently determine the nature and cause of such relationships.

Q2: What problems that impact on health are reported, and what are the perceived and stated health needs of subjects participating in the study? Do the expected differences in the needs of rural and urban samples indicate the importance of contextual factors on decisions taken about health? Is AIDS perceived as a health threat and what is its comparative importance when considered with other identified issues regarding health?

In analysis of the structured interviews, none of the respondents identified AIDS as a community health issue. Health was, for 65.3% of the sample, not a personal problem. Community needs tended to be centred around water, development and recreation needs. AIDS did not significantly feature as an illness that impacts on the community, or as a personal priority.

Only 20% of the random sample said that health in the community was bad, with most of those who volunteered opinion as to what was good or bad mentioning water problems, insufficient health services, diseases, and a host of minor problems. The fact that health service and water provision were identified as most troublesome indicates that a lack of resources in the community, whether differently focused in the urban and rural samples, was the most pressing issue. These problems were generally not perceived by respondents to be issues which affected them personally (most of them identified the problems as community issues), with water provision and STDs being the two issues that were most significant. Again, lack of water, together with a host of diseases such as Tuberculosis, were prominent when subjects were asked what was affecting their families. Community needs identified revolved around the need for resources in the community, including housing, roads, electricity, water, health facilities, sanitation, and recreation facilities. A small percentage of people had identified AIDS education as being important. Clearly, AIDS and STDs were not top of respondents' identified health issues, which does not bode well for impacting on the spread of the HIV epidemic if elements of the HBM, TRA and their derivatives are considered as explanations of likely behaviour.

AIDS held relatively little importance in both the rural and urban samples. The fact that people did not identify AIDS as a health issue is reason for concern, exacerbated by the finding that when pressed to identify illness that was affecting the community, only 2% identified AIDS, with the majority of the urban sample identifying pinkeye (there was a pinkeye epidemic in Sobantu a few months prior to the data collection in this urban area) and most of the rural sample identifying cholera, which is caused primarily by poor water sources. Tuberculosis and smallpox also featured, which are both easily transmitted in communities with poor housing and sanitation.

Relationships between responses identified in Table 21 provide evidence that development issues are important determinants in the way that people prioritise their health needs, and make decisions about behaviours regarding health. There is a strong link between perceived cause and identified need (especially in the examples of water

provision and sanitation). Many of those who identified poor water as a cause of illness identified attending to good hygienic practices as being a way of preventing illness, whereas those identifying illness as a cause of poor health in the community tended to see clinic attendance as a way of dealing with the problem. Of particular interest is the finding that those who did not mention personal contact as a cause of illness thought that poor health was attributable to an external or environmental determinant, whereas of those who did, 50% thought it was a personal or internal issue.

It seems, then, that the realisation of interpersonal causes of illness, such as is evident with correct knowledge of the transmission of HIV and other sexually transmitted diseases, is absolutely crucial to the adoption of AIDS preventive behaviour. Thus the basic elements of the HBM and TRA are useful in explaining such behaviour, for accurate knowledge, perceived vulnerability and accurate appraisal of threat, together with perceived self-efficacy and social norms are the elements which are inherent in any personal response to an interpersonally transmittable disease. However, placing such elements outside of their cultural and environmental context serves to defeat our aim of understanding and explaining decisions about health. The findings discussed above clearly reveal the primary importance of environmental issues in influencing health priorities and hence the decisions made regarding health.

A factor analysis was used to identify constructs underlying the variables, and how they are grouped. The results of this analysis indicated the many differences in needs between the urban sample and the rural sample. Even with the small sample, which necessitates some caution in interpreting the results, many of the issues identified above are emphasised in the factor analysis. For example, it was found that urban males are at a higher risk of contracting AIDS; women are less stereotypical in their beliefs about AIDS and have a higher knowledge about AIDS; urban respondents tend to identify roads, electricity, housing, refuse removal and transport as health needs in their community, are more aware of how AIDS is transmitted, feel more vulnerable to AIDS, identify health facilities as a need, and feel that the overall standard of health in the community is fair or good; rural people emphasise the provision of water as a

high priority, and attribute illness and poor health in the community to lack of water; rural women feel less able to do something about preventing AIDS; and rural people identify cholera as a prevalent illness and feel that the standard of health in the community is bad. The factors tend to confirm that there is a strong relationship between identified causes of poor health and identified needs, as well as identified illnesses. An example of this is provided by the finding in Factor 3, where the influence of water as a cause of illness and identification of water as an urgent need, as well as the connection with rural people identifying water-borne cholera as an illness, points toward the need to attend to water as an issue in the community before there can be any hope of success in prioritising AIDS-preventive personal behaviour.

It is interesting to note that, in Factor 1, women tend to have a greater awareness of AIDS and are less stereotyped than men. Historically, women have had less access to resources such as education and literacy skills, particularly in rural areas (NACOSA, 1993). The findings of the present study may be an indication of changing culture amongst the youth, and the fact that there are concerted efforts to organise marginalised women and educate them about their rights, thanks to organisations such as the Womens' Coalition which has been active throughout KwaZulu-Natal and elsewhere in the country, both in urban areas and the remotest of rural areas. Such interventions provide hope for combatting the spread of HIV in this country, for they are indications of programmes that address cultural and contextual issues and imbalances; the very imbalances that are inherent in restricting active health-protective sexual behaviour.

During the course of the structured interviews, subjects tended to identify factors which were not related to personal behaviours (as would smoking, sexual relations, and poor eating habits) as causes of the illnesses which were prevalent, instead attributing such cause to sanitation problems, lack of housing, and disease (indicated from the results included in Table 21). It needs to be acknowledged, however, that in a Third World setting, these identified causes of illness may be a realistic reflection of the situation. In underdeveloped communities mortality and morbidity are most often caused by infection (e.g. cholera) rather than due to lifestyle-related illness (e.g. heart disease).

The fact that the majority thought that solutions were outside of their control, and attributed responsibility primarily to the government and other causes (with the minority identifying interpersonal issues as to blame), could indicate that the people sampled were primarily interested in community issues, rather than taking responsibility themselves. There also seemed to be an emphasis on curative solutions (again, with control placed in the hands of "others") rather than primary prevention as a solution (with a minority identifying healthy diet, good hygiene, and condom-use as important). Such external pressures are identified by Ingham *et al* (1992) as having a powerful effect on the rational decision-making process. It also seems that, with so many of the responses pointing to external attribution, the respondents seem to be placing themselves in the position of passive receptors, and the challenge thus is to redefine causes, needs and solutions so as to encourage people to become the "active agents" as purported by Harre *et al* (1985) and Harre and Secord (1978, cited in Ingham, 1991).

If people are passive in their response to community health, and do not actively prevent illness (e.g. through learning about health problems and how to prevent them, through ensuring that the tools needed for prevention are available, and through identifying the underlying causes and addressing them), then the most effective public health strategy to reduce costs of treatment (due to people falling ill and then presenting for curative treatment at treatment sites) is a passive one that does not require active decision-making by people (Frank *et al*, 1992; Williams & Lund, 1992). It would seem, then, that providing purified water in rural areas would be better than depending on education campaigns to get people to boil water before using it. However, this is not always possible or cost-effective.

When regarding sexual health, and in particular the transmission of HIV, passive public health measures do not seem to be feasible. Apart from introducing compulsory STD

identification and treatment programmes in the community⁴² and legislation around the screening of blood supplies, there are virtually no ways that passive measures can be introduced to curb HIV transmission. Attempts to criminalise sex work, intravenous drug use and homosexual sex have not only often been based on misconceptions about the nature of the epidemic, but have also resulted in so-called risk groups that have been legislated against, going underground, thereby further removing them from having access to community resources. Thus, with sexually transmittable disease and AIDS in particular, prevention programmes need to encourage individual decision-making and individual behaviour change. This necessitates addressing internal psychological variables as well as the contextual issues that influence and determine them. Negotiating sexual decisions is clearly an issue which is evident not only from the results of this study, but also in other studies completed in KwaZulu-Natal (Karim *et al*, 1993; Webb, 1993;) and elsewhere in South Africa (Ratsaka & Hirschowitz, 1993; Perkel *et al*, 1991).

Aggleton (1989) warns of stopping at the point where people accept control over their personal health determinants, and emphasises the need for community empowerment. If people in the present study could change their perception that outside agencies are central to their future health, and improve their own knowledge about health at the same time as identifying collective concerns in the community, then community-oriented responses could lead to the challenging of imbalances on cultural, social and economic grounds.

Although the notion of encompassing demographic and contextual variables as *barriers* to, or *cues* for, health-related behaviour has been challenged in this discussion, the present study has not been successful in fully determining whether the theoretical and practical problems with the TRA, HBM and their derivatives as identified by the likes of Hunt and Martin (1988) and Ingham *et al* (1992), can also be identified in the local

⁴² The early identification and reduction in the incidence of sexually transmitted disease is seen as being integral to addressing the AIDS epidemic, for the presence of an STD during sexual intercourse can considerably increase the chance of transmission of HIV (Evian, 1993; Schneider *et al*, 1993).

social and cultural environment. In the discussion above, elements mentioned in the criticisms of models of health behaviour which are evident from the findings of the present study include: perceived invulnerability; the existence of a range of understandings; the interpretation of scientific facts with culture-specific explanations; "rational" reasons as to why appropriate courses of action cannot be followed; the existence of contextual pressures; and the implication that internal pressures are both evident and important.

Whether these elements can be directly applied to African settings is debatable. Ingham (1991) and Ingham *et al* (1992) refer to findings amongst British samples, particularly amongst the youth. Caldwell *et al* (1994a) and Orubuloye *et al* (1994) question whether AIDS programs and theories of human health-protective behaviour are determined by Western concepts of relationships and "appropriate" behaviour. In the present study, and others carried out in South Africa, cultural, social and contextual variables are important determinants of elements within the theories discussed in Chapter 2, and impact on the way people interact. Barnett and Blaikie (1992) identify issues which help us to interpret Ingham's criticisms. They argue that assumptions in Africa could be based on chance, witchcraft, morality and punishment, and that cultural and religious belief systems are utilised by people to explain health threat in a way which is congruent with their own personality variables.

Hunt and Martin (1988) provide a critique which supports Ingham's comments as well as the interpretations provided by Barnett and Blaikie (1992). They question that action is based on a reasoned process and propose a model based on "selective perception". Clearly, AIDS is something that most subjects in the present study have heard of, and identify as a threat, but do not perceive as a personal and immediate threat, even though their behaviour (particularly that of the urban male sample) proves them vulnerable to HIV infection. Thus basic needs do not revolve around sexual health, even in individuals who have been treated for STDs. Sexual health seems to be something people have thought about at some time or another, yet health issues identified in the structured interview tended to revolve around contextual issues rather

than personal behaviour, indicating that sexual health is not a basic priority. AIDS is far less a stressor than other health and development issues (such as pinkeye identified in the urban population, and water-related illnesses identified by the rural one).

These are congruent with four of Hunt and Martins' (1988) postulates as to determinates of behaviour. The fifth element that they identify refers to the adaption pressures to which the person is subjected and the degree to which coping mechanisms are already taxed. There is sufficient evidence in the responses of the subjects in the present study to suggest that they prioritise needs according to their context and personal difficulties. Details of these are provided in response to Questions 5 and 6 in this discussion. The AIDS Risk Reduction Model (ARRM) also requires a perception of risk on the part of the subject before they can make the decision to implement protective behaviour and take action (Catania *et al*, 1989). Cleary (1987; cited in Kirscht & Joseph, 1989) comments on the usefulness of traditional models of health behaviours such as the HBM and TRA in helping behavioural scientists understand health behaviours and informing interventions. Clearly they, together with other linear models such as the ARRM and Roger's Protection Motivation Theory, are limited in their explanation of the context in which people find themselves having to make sexual decisions, and so too, are limited in explaining processes and motivations around health protective behaviour.

Many authors such as Barnett and Blaikie (1992), Crewe (1992), Heyns (1992) and Webb (1993) identify the need to attend to contextual issues as an integral part of AIDS campaigns. Approaches such as those researched by Kelly *et al* (1993), which teach the use of cognitive, social and self-management skills in order to reduce risk behaviours and then maintain risk-reductive behaviour, are important in addressing the individual determinants of health behaviour. However, as Kelly *et al* (1993) point out, multifaceted community mobilisation is required, together with campaigns that are able to address the contextual issues that restrict the individual's ability to prioritise AIDS-related behaviour and, having identified sexual risk-taking as an issue, adopt and maintain protective behaviour.

Models of health protective behaviour need to begin with the context, and work through to the individual behavioural variables. Although every decision is a cognitive one, it is clear that linear cognitive models are insufficient in explaining and informing behaviours set in complex cultures and social and environmental contexts. The model provided by Webb (1993) is a good example of how addressing the environmental needs of a community can lead not only to practical changes which are likely to impact on the spread of HIV (such as early STD treatment, providing water and thus improving hygiene, alleviating poverty, increasing standards of education), but also to providing the opportunity and environment in which the human cognitive processes captured in the HBM and TRA could have a better chance of being successful.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

Models such as The Health Belief Model and the Theory of Reasoned Action, as well as their derivatives which focus on a linear process of rational decision-making, see contextual issues as cues and barriers to risk-reducing behaviour change. Most of these theories have been produced by social scientists from First World countries who intrinsically embrace a world view which is termed "Eurasian" by Caldwell *et al* (1994a,b). Health behaviours are seen by many First World researchers to be determined by contextual barriers that disable the individual from rational self-protective decision-making. Culture, however, does influence the individual's approach to sexual behaviour in certain ways, and these differences are often more crucial to an explanation of risk and behaviour in traditional African society than any of the individual psychological factors such as scientifically-based knowledge, self-efficacy, and perceived severity of risk, even though these do provide an explanation of how the individual cognitively *interprets* contextual and cultural issues. Thus in a society where people have less control over personal decision-making, and where such decisions are culture-bound or determined by their socio-economic status, relying too much on an individualistic approach based on what would seem to be rational in a developed and well-resourced society may be problematic for intervention programmes in a third world African context.

Even if the AIDS threat is identified by an individual as a comparative concern, many people are disabled from action due to their social position, disempowered gender attributes, poverty, etc. As expressed by Hunt and Martin (1988), Aggleton (1989), Ingham (1991) and Ingham *et al* (1992), cultural, contextual and personality issues in models attempting to explain behaviour cannot be removed to the status of mere barriers that can be overcome, but should precede and inform theories explaining behavioural processes. Current theories do not attribute adequate importance to this and

therefore run the risk of not being sufficient in motivating, directing and implementing practical risk-reduction programmes. This thesis questions the appropriateness of elements identified in rational decision-making models of behaviour in the given context (in KwaZulu-Natal), and suggests that, given that many of the elements *have* proved to be useful constructs in explaining and determining individual behaviour, the models should be modified to incorporate different cognitive pathways in the decision-making process; thus enabling the models to be situated within the context, rather than treating the context as merely an element of the model (i.e. cues and barriers to individual decisions about behaviour).

Clearly, AIDS is something that most subjects in the present study have heard of, identify as a general threat in society, but do not perceive as a personal and immediate threat, even though their behaviour (particularly that of the urban male sample) proves that they are vulnerable to HIV infection. However, basic needs do not revolve around sexual health. The results and discussion in the present study have assisted in determining a number of concluding points.

8.1 Conclusions

- * Knowledge of HIV/AIDS, its transmission and prevention is an important yet insufficient component required for AIDS-preventive behaviour. It is clear that a number of stereotypical attitudes and myths impede the accurate translation of scientific knowledge into practice. This is more than often intrinsically situated within the culture and social context in which the person is situated. Information, therefore, needs to be based within the person's social and environmental context.
- * In order for protective behaviours to be adopted, there needs to be a real and accurately perceived threat to the person and his/her community.
- * Behaviour, especially behaviours that are socially derived and play an important part in interpersonal interactions, cannot be seen outside of the context in which the

person finds him/herself. Behaviour is *determined* (along with psychosocial co-determinants) rather than influenced by culture, gender relationships, physical environment and social context. Models describing the processes which influence health behaviour should acknowledge the contextual determinants of behaviours more so than they presently do. Cognitions are determined by and derived from contextual variables and as such the contextual pathways to health decisions need to be given greater emphasis than the paths that are individualist and based on a concept of rationality.

- * It is important that people desire the change and feel capable of making the desired change, thus the concept included in the TRA and other models of behaviour that the benefits need to outweigh the costs, in either urgency, magnitude or substance, is important. However, equally important is that what people desire is often socially or economically determined and influenced by personality variables. The importance of contextual variables has been emphasised in this study, and the importance of internal variables such as self-esteem and psychodynamic defenses has been highlighted elsewhere (Hunt & Martin, 1988; Perkel *et al*, 1991; Perkel, 1992). These elements need to be considered as an integral part of decision-making, whether rational or not. Public health campaigns need to adequately address the internal and contextual variables, and find a model to inform intervention that encompasses cognitive pathways that are broader than those in the HBM, TRA and their derivatives, since the possibility of utilising passive measures to curb HIV is remote. The reliability of measures of behaviour and measures of elements describing behavioural decision-making needs to be investigated.

- * Beliefs, myths and social stereotypes influence scientific knowledge, therefore it is important to address the cultural and ideological issues that influence interpretation of knowledge. Stereotypes and attitudes are predominantly culture-based, and ethnicity is an important predictor of behaviour.

- * Demographic variables have a significant relationship with elements described within models of health behaviour. Gender, age, geographical definition, and standard of education achieved have, in the present study, been associated with levels of knowledge, perceived vulnerability, self-efficacy, level of social stereotype, and behavioural intention. They have also been associated with the way people prioritise health needs and the way people explain causes of health-related problems.

- * The critiques of health behaviour models provided by Hunt and Martin (1988) and Ingham *et al* (1992) have been supported by the results of the present study, indicating that the suppositions of these authors which were based on western-oriented research samples can be extended to African samples. Interventions in South Africa therefore need to address perceived invulnerability, the range of understanding about terminology, people finding positive reasons for non-rational responses, external and internal pressures which have a powerful effect on the rational decision-making process, ideological and power issues which complicate rational decisions, different social constructs about sexuality making messages confusing, and the difficulties associated with negotiating and joint decision-making around safer sexual practices. Furthermore, Hunt and Martins' (1988) elements of raising facets of behaviour into cognitive focus, allowing for environmental operations, and taking an interactionist perspective, can be comfortably combined with the elements identified by Ingham *et al* (1992) above.

- * AIDS interventions need to take cognisance of the importance of integrating interventions with development and basic primary health care. The intervention should rather approach the desired outcome from an interactionist and holistic perspective, than from an individualist perspective. A dialectic has arisen in the literature which addresses behaviours regarding motor vehicle accidents, between authors who emphasise individually directed interventions and those who support the public health approaches to injury prevention, characterised as active versus passive and individual versus population approaches to behaviour (Frank *et al*,

1992). Automatic (passive) means of prevention are not feasible when regarding HIV risk behaviours. However, this does not mean that public approaches to HIV transmission should be neglected. The importance of determining safer sex as a societal norm, and raising sexual health to a level in which it could form an integral part of all primary health and development, is paramount. Individual decision-making is important, but interventions should start from the perspective of the overall context rather than trying to impact only on rational individual decision-making. The one is ineffective without the other, but it is less effective to first approach the individual, and then attempt to address contextual issues. At the same time it is less effective to only address the context in which the individual finds him/her self, without addressing the cognitive processes at play and the intrapsychic influences (as discussed by Perkel *et al*, 1991). Programmes should identify the perceived health issues and health needs of communities and address sexual health within these priorities.

- * The importance of early treatment of sexually transmitted diseases becomes evident in discussing issues relating to public health campaigns rather than focusing solely on individual choice. Decision-making regarding visible and often embarrassing STDs is less influenced by contextual issues. Men, in particular, often present for treatment of painful afflictions, and in treating these a considerable impact can be made on the epidemic (as observed by Schneider *et al*, 1993). A campaign addressing all STDs is needed, as are more treatment sites for STDs to improve access. The gender imbalances with regard to STDs need to be addressed, however, because many women are unable to seek treatment, or do not have the knowledge to recognise infection at an early stage.

- * Health interventions, including AIDS campaigns, should focus on emphasising prevention of illness rather than reliance upon curative services. People need to become "active agents" in broad decisions about their health, and community-oriented empowerment programmes should be emphasised. The communities that are targeted for interventions should be involved in the decision-making process,

and help place the specific intervention into their social, cultural and developmental context. Health needs to become a responsibility that is community-derived and shared, and not the sole responsibility of individuals, of whom those who are "responsible" or "rational" will be able to make the "right" decisions. There needs to be an emphasis on changing community peer norms which will encourage a systemic view of health as human factor that is determined by a relationship between social and individual variables.

- * Finally, development issues are integral in contributing to the spread of HIV and AIDS, and thus need to be given greater emphasis in the theoretical understanding of the epidemic, as well as more significance in the solution.

8.2 Critique of the study

The literature focusing on cognitive processes and health behaviour is vast, and much is currently being written and debated in this field. This study has focused on the interaction between context and individual decision-making, with an emphasis on whether models which have been presented to help us understand the way people respond to health threats are able to do so without needing modification. The results of the study indicate that present models, even when modified to attempt to integrate complex processes which are presented by this perplexing epidemic, are incomplete and need to be made more comprehensive and extensive by incorporating contextual and psychosocial variables. Rational decision-making models should be used with caution in African settings.

The present study, however, has fallen short of defining how the useful elements of traditional models of health behaviour can be integrated with theoretical critiques of the models, and with evaluations of the experience gained in local programmes, and therefore in formulating a more comprehensive approach to understanding HIV/AIDS in the South African context. The study has succeeded, however, in introducing concepts and substantiating criticisms of the way cognitive models are applied in the

local South African context. Further research is required to identify all the elements involved and the processes by which decisions are impacted on in the South African context. This could lead to a theoretical model that incorporates both contextual and psychosocial elements, which could be used to change current intervention programmes toward a public health paradigm which focuses on changing the factors that determine risk behaviour.

The design of the present study was such that a great deal of information was gathered at the expense of specificity. The questionnaire and scales used were made simple in order to be accessible to less-educated respondents. Findings from the present study could be used to determine a more comprehensive qualitative design which would be less constrained by time, lack of staff and lack of money. Although the structured interviews succeeded in introducing some conformity, enabling comparative analysis of variables, the unstructured interview is more adept at distinguishing individual need and identifying individual issues which are also crucial to the understanding of rational (or less-rational) decisions regarding health in general, and, more specifically, sexual practices.

Many logistical and situational difficulties arose during the planning and execution of the study. The original design was adapted to incorporate a content analysis technique, the *content analysis of verbal expression* (Schulman, Castellon & Seligman, 1989) which was found (after data collection had started) to be inappropriate for the topic being studied after long-awaited methodological details were received from the authors who reside in the United States. This necessitated the redefining of the aims and design of the study. Data that had already been collected was then used as a pilot study. A further complication was encountered when the principal trained research assistant resigned, and new research assistants had to be trained. A complicating factor in the method used in the present study was the fact that the primary researcher could not speak the language in which the study was conducted. This restricted the researcher's ability to guide the method, and introduce necessary changes during data collection. The scope of the data gathered was also complex and necessitated summarising, and

variables which were ultimately grouped and analysed do not truly reflect the depth of the data which was initially gathered.

The original hypotheses was restructured into broad survey questions after finding that the a more complicated questionnaire proved to be unsuitable for less educated (particularly rural, and poorly-resourced) people, and that the planned content analysis technique was found to be unsuitable for the topic studied. The lack of clear, well-defined hypotheses resulted in a less-focused study, which was dependent on a broad survey design, but one which provided a wealth of information about health priorities and needs in various communities. Future studies could make use of the findings of the present study, and begin by forming hypotheses which can be tested. The survey design of the present study is most useful as the first part of more comprehensive research, preferably designed to assess the changes in communities with regard to how they construct cognitions regarding health, how decisions are influenced, how demographic variables impact, the relationship between development concerns and health, and how this can be integrated into theory so as to inform and guide interventions. The present study has provided the groundwork for this, but falls short of identifying elements and interactions between elements that can make up a model of health behaviour that can be tested in the South African context.

In order to make the findings of such a study more widely applicable, a more comprehensive sample is required. Sampling in the present study was complicated by the fact that data was collected during working hours. Furthermore, the proximity of the "rural" sample to Pietermaritzburg may have reduced the likelihood of finding more austere differences between the urban and rural samples. Cultural differences and having disadvantaged education, less competent literacy skills and a greater dependence on traditional social structures and healing, are more likely in remote rural areas. It would thus be interesting to determine whether the differences found in the samples in the present study are exacerbated when an urban sample is compared to a more rural sample, in future research.

The present study also did not attempt to investigate psychosocial variables. Since the study was designed and data collected, a model of psychosocial mediation which is applicable in the South African AIDS area has been proposed by Perkel (1992), which emphasises the importance of psychosocial factors in mediating the breakdown between adequate and appropriate knowledge and behaviour change. The findings of the present study could well be discussed in light of this model, and appropriate research would provide an opportunity to develop elements of that model whilst regarding the critiques and suggestions of the present study.

8.3 Recommendations for further research

Future studies need to look at the role that demographic, social, personal and contextual variables play in determining behaviour. Hypotheses could be formulated from the findings of the present study, which could be tested amongst a broader sector of the population, looking at differences across communities defined as rural and urban whilst controlling for extraneous variables such as gender differences, cultural influences, differences in level of education, etc., through the use of analysis of covariance. These variables could also be investigated, controlling for geographic definition. More precise sampling procedures are required, with larger samples enabling extrapolation of findings to the general population.

There is a need to develop and test instruments which can be used with local populations to test personality variables and social processes. The scale for risk-taking behaviour used in the Taute (1991) study, for example, was not appropriate for underdeveloped rural populations that were ethnically and contextually diverse from the Eurocentric orientation of the scale. A more reliable scale to measure self-efficacy needs to be derived which can also be accessible to less educated members of our society.

In conjunction with the above recommendations, a longitudinal study is required to measure the influence that intervention programmes have on knowledge, perceived

vulnerability, self-efficacy, and attitudes, as well as on the social and contextual variables that impact on decision-making processes. The impact of the Reconstruction and Development Programme, as well as improved education, access to health facilities, etc. upon decision-making processes also needs to be investigated.

As suggested in Kelly *et al* (1993), community trials using elements of behaviour change models that appear useful (such as those identified in the present study) for HIV risk behaviour reduction, need to be carried out. At the same time such trials must acknowledge and address the criticisms emerging from the present study, and should incorporate such critiques into informing models, interventions and practices.

Interventions need to be guided by research, therefore intervention programmes need to be involved in the planning and execution of research. Research projects need to utilise a multidisciplinary approach so as to provide for the complex aspects of the AIDS epidemic. Development agencies such as those addressing housing, sanitation, and education, need to be involved in addressing HIV and researching what constitute effective HIV intervention programmes in the local context. Multidisciplinary teams should include, as suggested by Kelly *et al* (1993), other psychological disciplines such as social, developmental and community psychologists, as well as other behavioural scientists, epidemiologists etc.

8.4 Concluding comment

AIDS has been a highly politicised disease since a battle to destigmatise the condition in the early 1980's led to the US Federal Drug Administration changing the name by which the strange new condition was known, from Gay Related Immune Deficiency (GRID) to a more comprehensive and less accusatory Acquired Immune Deficiency Syndrome - AIDS. As scientists and the general public gain more knowledge about AIDS, so its political nature has shifted. The fact that poor, under-resourced communities that are discriminated against socially and economically, are at the forefront of the epidemic, whether they are defined by race, class, gender, or a

combination of these, is evidence enough of the continuing political nature of AIDS. This political role is a comment on social processes, which are constructs of interpersonal and intrapersonal operations. Psychology as a discipline is essential to our understanding of the behavioural manifestations and constructs which are at the centre of the epidemic, and as such, needs to ensure that the challenges that face the profession, both in understanding and addressing the epidemic, are adequately addressed.

REFERENCES

- Aggleton, P. (1989). Evaluating health education about AIDS. In Aggleton, P. Hart, G. & Davies, P. (Eds.) *AIDS: Social Representations, Social Practices*. pp 220-236. Brighton: Falmer Press.
- Anderson, J. Hortensia, A. Bailey, W. Barret, R. Boccellari, A. Bonde, L. Boyd-Franklin, N. Coates, T.J. Franks, P. Gornemann, I. Landry, C.P. Lo, B. McKusick, L. Shore, M.D. Steiner, G.L. Tafoya, T.N. (1991). Review of recent literature on the behavioral and psychosocial aspects of HIV disease. In Anderson, J. Landry, C. & Kerby, J. (Eds.) *AIDS Abstracts of the Psychological and Behavioral Literature 1983-1991*. (3rd ed). pp 1-60. Washington: APA.
- Barnett, T. & Blaikie, P. (1992). *AIDS in Africa: Its Present and Future Impact*. London: Belhaven Press.
- Baum, A. & Nesselhof, S. (1988). Psychological research and the prevention, etiology, and treatment of AIDS. *American Psychologist*, 43, 900-906.
- Beck, K.H. & Frankel, A. (1981). A conceptualization of threat communications and protective health behaviour. *Social Psychology Quarterly*, 44(3), 204-217.
- Becker, M.H. (1974). The health belief model and personal health behaviour. *Health Education Monographs*, 2, 324-508.
- Bell, D. Feraios, A. & Bryan, T. (1990). Adolescent males' knowledge and attitudes about AIDS in the context of their social world. *Journal of Applied Social Psychology*, 20 (5), 424-448.

- Brouard, P.W. (1993). *Attitude change in a group of health professionals exposed to a three-day AIDS education course*. Unpublished Masters dissertation. University of the Witwatersrand, Johannesburg.
- Bulmer, M. (1983). Interviewing and field organization. In Bulmer, M. and Warwick, D.P. (Eds). *Social Research in Developing Countries: Surveys and Census in the Developing World*. pp205-219. New York: John Wiley & Sons.
- Bunning, E.C. Verster, A.D. & Gartgers, C. (1987). Amsterdam's policy on AIDS and drugs. National Institute on Drug Abuse meeting, Washington, D.C.
- Burton, S.W. Burn, S.B. Harvey, D. Mason, M. and McKerrow, G. (1986). AIDS information. *Lancet*, 2, 1040-1041.
- Caldwell, J.C. Orubuloye, I.O. & Caldwell, P. (1994a). Underreaction to AIDS in Sub-Saharan Africa. In Orubuloye, I.O. Caldwell, J.C. Caldwell, P. & Santow, G. (Eds). *Sexual Networking and AIDS in Sub-Saharan Africa: Behavioural Research and the Social Context*. pp 217-235. Canberra: Australian National University Printing Centre.
- Caldwell, J.C. Caldwell, P. and Quiggin, P. (1994b). The social context of AIDS in sub-Saharan Africa. In Orubuloye, I.O. Caldwell, J.C. Caldwell, P. & Santow, G. (Eds). *Sexual Networking and AIDS in Sub-Saharan Africa: Behavioural Research and the Social Context*. pp 129-163. Canberra: Australian National University Printing Centre.
- Carne, C.A. Johnson, A.M. Pearce, F. Smith, A. Tedder, R.S. Weller, I.V.D. Loveday, C. Hawkins, A. Williams, P. & Adler, M.W. (1987). Prevalence of antibodies to human immunodeficiency virus, gonorrhoea rates, and changed sexual behaviour in homosexual men in London. *Lancet*, 1, 656-658.

- Catania, J. Coates, T. Kegeles, S. Ekstrand, M. Guydish, J. and Bye, L. (1989). Implications of the AIDS Risk-Reduction Model for the gay community: the importance of perceived sexual enjoyment and help-seeking behaviours. In Mays, V. Albee, G. & Schneider, S. (Eds). *Primary Prevention of AIDS: Psychological Approaches*. pp 242-261. Newbury Park: Sage Publications.
- Catania, J. Kegeles, S. & Coates, T. (1990). Towards an understanding of risk behaviour: An AIDS risk reduction model (ARRM). *Health Education Quarterly*, 17, 27-39.
- Coates, T.J. (1990). Strategies for modifying sexual behaviour for primary and secondary prevention of HIV disease. *Journal of Consulting and Clinical Psychology*, 58(1), 57-69.
- Conradie, D.P. & Rabie, J. (1993). Research amongst parents regarding HIV/AIDS and AIDS education programmes. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.
- Cornish, M. (1989). Students' attitudes towards AIDS. *Nursing Times*, 85, 62-63.
- Crewe, M. (1992). *AIDS in South Africa: The myth and the reality*. Johannesburg: Penguin Books.
- Croteau, J.M. Nero, C.I. & Prosser, D.J. (1993). Social and cultural sensitivity in group-specific HIV and AIDS programming. *Journal of Counselling and Development*, 71, 290-296.
- Curtis, J.L. Crummey, F.C. Baker, S.N. Foster, R.E. Khanyile, C.S. & Wilkins, R. (1989). HIV screening and counselling for intravenous drug abuse patients: staff and patients attitudes. *Journal of the American Medical Association*, 261(2), 258-262.

- Day, S. Ward, H. & Harris, J.R.W. (1988). Prostitute women and public health. *British Medical Journal*, 297, 1585.
- de Bruin, M. (1992). Women and AIDS in developing countries. *Soc. Sci. Med.* 34(3), 249-262.
- de la Concela, V. (1989). Minority AIDS Prevention: Moving beyond cultural perspectives towards sociopolitical empowerment. *AIDS Education and Prevention*, 1(2), 141-153.
- Doyle, P.R. (1991). The impact of AIDS on the South African population. In P.R.Doyle (Ed.). *AIDS in South Africa: The Demographic and Economic Implications*. pp9-28. Cape Town: Galvin & Sales.
- Du Plessis, G.E. Meyer-Weitz, A.J & Steyn, M. (1993). Study of knowledge, attitudes, perceptions and beliefs regarding HIV and AIDS (KAPB): Summary of a survey undertaken among the general public in 1992. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.
- Evans, B.A. McLean, K.A Dawson, S.G. Teece, S Bond, R. McRae, K. & Thorpe, R. (1989). Trends in sexual behaviour and risk factors for HIV infection among homosexual men, 1984-1987. *British Medical journal*, 298, 215-218.
- Evans, B.G. Catchpole, M.A. Heptonstall, J. Mortimer, J.Y. McCarrigle, C.A. Nicoll, A.G. Waight, P. Gill, O.N. & Swan, A.V. (1993). Sexually transmitted diseases and HIV-1 infection among homosexual men in England and Wales. *British Medical Journal*, 306, 426-428.

- Evian, C. (1993). *Primary AIDS Care: A practical guide for primary health care personnel in the clinical and supportive care of people with HIV/AIDS*. Johannesburg: Jacana.
- Fishbein, M. & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior*. Reading: Addison-Welsey.
- Fishbein, M. & Middlestadt, S.E. (1989). Using the Theory of Reasoned Action as a framework for understanding and changing AIDS-related behaviors. In Mays, V.; Albee, G. & Schneider, S. (Eds) *Primary Prevention of AIDS: Psychological Approaches*. pp 93-110. Newbury Park: Sage Publications.
- Ford, K. Wirawan, D. & Fajans, P. (1993). AIDS knowledge, condom beliefs and sexual behaviour among male sex workers and male tourist clients in Bali, Indonesia. *Health Transition Review*, 3(2), 191-204.
- Frank, R.G. Bouman, D.E. Cain, K. & Watts, C. (1992). Primary prevention of catastrophic injury. *American Psychologist*, 47(8), 1045-1049.
- Friedman, S.R. Des Jarlais, D.C. & Sotheran, J.L. (1986). AIDS Health education for intravenous drug users. *Health Education Quarterly*, 13(4), 383-393.
- Harre, R. Clarke, D. & De Carlo, N. (1985). *Motives and Mechanisms: An introduction to the psychology of action*. London: Methuen & Co.
- Harris, D.M. & Guten, S. (1979). Health-protective behaviour: an explanatory study. *Journal of Health and Social Behaviour*, 20(March), 17-29.
- Hauser, P.M. (1983). The limitations of KAP Surveys. In Bulmer, M. & Warwick, D.P. (Eds). *Social Research in Developing Countries: Surveys and Census in the Developing World*. pp65-71. New York: John Wiley & Sons.

- Heyns, M. (1992). Hurdles and voids encountered in the battle against AIDS. *Rehabilitation in S.A.*, 36(2), 60-64.
- Holsti, O.R. (1969). *Content Analysis for the Social Sciences and Humanities*. Reading: Addison-Wesley.
- Hornik, R. (1989). Evaluation strategies: comparable findings from Australia, Sweden, and the United Kingdom. *AIDS Health Promotion Exchanges*, WHO.
- Hugo, P. (1990). Gaining and maintaining interview access in political research: a South African case study. In Hugo, P. (Ed). *Truth be in the Field: Social Science Research in South Africa*. pp111-129. Pretoria: University of South Africa.
- Hunt, S.M. & Martin, C.J. (1988). Health-related behavioural change - a test of a new model. *Psychology and Health*, 2, 209-230.
- Ingham, R. (1991). Some speculations on the use of the concept of 'rationality'. *Paper presented at the Small Group Meeting of the European Association of Experimental Psychology*. University of Kent, 26-27 September.
- Ingham, R.; Woodcock, A. & Stenner, K. (1992). The limitations of rational decision making models as applied to young people's sexual behaviour. In Aggleton, P. Davies, P. & Hart, G. (Eds). *AIDS: Rights, Risk and Reason*. Brighton: Falmer Press.
- Ingstad, B. (1990). The cultural construction of AIDS and its consequences for prevention in Botswana. *Medical Anthropology Quarterly*, 4, 28-40.
- Janz, N.K. & Bekker, M.H. (1984). The Health Belief Model: A decade later. *Health Education Quarterly*, 11(1), 1-47.

Johnson, R.W. Ostrow, D.G. & Joseph, G. (1990). Educational strategies for prevention of sexual transmission of HIV. In D.G.Ostrow (Ed.) *Behavioral Aspects of AIDS*. pp43-70. New York: Plenum Medical Book Company.

Joseph, J. Montgomery, S. Emmons, C. Kirscht, J. Kessler, R. Ostrow, D. Wortman, C. O'Brein, K. Eller, M. & Eshelman, S. (1987). Perceived risk of AIDS: Assessing the behavioural and psychosocial consequences in a cohort of gay men. *Journal of Applied Social Psychology*, 17(3), 231-250.

Karim, Q Preston-Whyte, E. Zuma, N. Stein, Z. Susser, S. & Morar, N. (1993). Women and AIDS in Natal/Kwazulu, South Africa: Determinants of the adoption of HIV protective behaviour. *Report-in-Brief: Women and AIDS Research Programme, Bureau for Research and Development*, 1-4.

Kelly, J.A. & St. Lawrence, J.S. (1988). AIDS prevention and treatment: psychology's role in the health crisis. *Clinical Psychology Review*, 8, 255-284.

Kelly, J.A. St. Lawrence, J.S. Brasfield, T. & Hood, H. (1989). Group intervention to reduce AIDS risk behaviours in gay men: applications of behavioural principles. In Mays, V. Albee, G. & Schneider, S. (Eds) *Primary Prevention of AIDS: Psychological Approaches*. pp225-241. Newbury Park: Sage Publications.

Kelly, J.A. Murphy, D.A. Sikkema, K.J. & Kalichman, S.C. (1993). Psychological interventions to prevent HIV infection are urgently needed: New priorities for behavioral research in the second decade of AIDS. *American Psychologist*, 48, 1023-1034.

Kerlinger, F.N. (1986). *Foundations of Behavioural Research*. Fort Worth: Harcourt Brace Jovanovich College Publishers.

- Khosa, V. (1991). AIDS and a black person. *Unpublished report for the AIDS Training, Information and Counselling Centre*, Pretoria.
- Kinnell, H. (1989). Prostitutes, their clients and risks of HIV infection in Birmingham. *Occasional paper*, Department of Public Health Medicine, Central Birmingham Health Authority.
- Kirscht, J.P. & Joseph, J.G. (1989). The Health Belief Model: some implications for behaviour change, with reference to homosexual males. In Mays, V. Albee, G. & Schneider, S. (Eds) *Primary Prevention of AIDS: Psychological Approaches*. pp111-127. Newbury Park: Sage Publications.
- Klee, H. Faugier, J. Hayes, C. Boulton T. & Morris, J. (1990). Sexual partners of injecting drug users: the risk of HIV infection. *British Journal of Addiction*, 85, 1125-1132.
- Kotarba, J.A. & Lang, N.G. (1986). Gay lifestyle change and AIDS: Preventive health care. In Feldman, D.A. & Johnson, T.M. (Eds). *The Social Dimensions of AIDS: Method and Theory*. pp127-144. New York: Praeger.
- Kustner, H.G.V. (Ed). (1993). AIDS in South Africa: status on World AIDS Day 1993. *Epidemiological Comments*, Vol 20(11), 184-203.
- Lehmann, P. Hausser, D. Daubois-Arber, F. & Gutzwiller, F. (1988). Continuous evaluation of Switzerland's AIDS Prevention Programme. *Social and Preventive Medicine*, 33(7), 348-352.
- Leigh, B.C. & Stall, R. (1993). Understanding the relationship between drug or alcohol use and high risk sexual activity for HIV transmission: Where do we go from here? *Addiction*.

- Lindegger, G. C. & Wood, G. D. (1994). The AIDS Crisis: a review of psychological issues and implications, with special reference to the South African situation. *South African Journal of Psychology*, in press.
- Mann, J.M. (1993). AIDS, health and human rights: the future of a pandemic. *Issue paper of the Francois-Xavier Bagnoud Center for Health and Human Rights*, Harvard School of Public Health, Cambridge, Massachusetts, 14 October.
- Martin, J.L. & Vance, C.S. (1984). Behavioral and psychosocial factors in AIDS: Methodological and substantive issues. *American Psychologist*, 39, 1303-1308.
- Mckeganey, N.P. Barnard, M.A. Bloor, M.J. & Leyland, A.C. (1990). Injecting drug use and female streetworking prostitution in Glasgow. *AIDS*, 1(11), 1153-1155.
- Mckeganey, N.P. & Barnard, M.A. (1992). *AIDS, Drugs and Sexual Risk: Lives in the Balance*. London: Open University Press.
- McKusick, L. Conant, M.A. & Coates, T.J. (1985). The AIDS epidemic: A model for developing intervention strategies for reducing high risk behaviour in gay men. *Sexually Transmitted Diseases*, 12, 229-234.
- McKusick, L. Horstman, W & Coates, T. (1985). AIDS and sexual behaviour in San Francisco. *American Journal of Public Health*, 75, 493-496.
- McKusick, L. Wiley, J.A. Coates, T.J. Stall, R. Saika, G. Morin, S. Charles, K. Horstman, W. & Conant, M.A. (1985). Reported changes in the sexual behaviour of men at risk of AIDS. San Francisco, 1982-84 - the AIDS Behaviour Research Project. *Public Health Report*, 100, 622-629.

- Merson, M.H. (1993). HIV/AIDS in the World Today. Paper presented at the IX Latin American Congress on STD/AIDS and III Pan American Conference on AIDS, Cartagena, Columbia, 3-6 November.
- Montgomery, S.B.; Joseph, J.G. Marshall, H. Becker, M.H. Ostrow, D.G. Kessler, R.C. & Kirscht, J.P. (1989). The Health Belief Model in understanding compliance with preventive recommendations for AIDS: How useful? *AIDS Education and Prevention*, 1(4), 303-323.
- Mullen, P.D. Hersey, J.C. & Iverson, D.C. (1987). Health Behaviour Models compared. *Social Science and Medicine*, 24(11), 973-981.
- NACOSA. (1993). A Draft National AIDS Strategy for South Africa. *Unpublished report of the NACOSA secretariat*, 14 September.
- NACOSA. (1994). A National AIDS Plan for South Africa 1994 - 1995. *Unpublished report of the NACOSA secretariat*, July.
- NAMDA News. (1988). AIDS in South Africa, 2-3.
- Nene, S.B. (1991). Misconceptions on HIV/AIDS. *Unpublished report for the Department of National Health and Population Development*, Pietermaritzburg.
- Norusis, M.J. (1985) *SPSSx Advanced Statistics Guide*, Chicago: SPSS Inc.
- Orubuloye, I.O. Caldwell, P. & Caldwell, J.C. (1994). African women's control over their sexuality in an era of AIDS: a study of the Yoruba of Nigeria. In Orubuloye, I.O. Caldwell, J.C. Caldwell, P. & Santow, G. (Eds). *Sexual Networking and AIDS in Sub-Saharan Africa: Behavioural Research and the Social Context*. pp69-88. Canberra: Australian National University Printing Centre.

- Panos Dossier. (1990). *Triple Jeopardy: Women and AIDS*. London: The Panos Institute.
- Perkel, A.K. (1992). *The Mindscape of AIDS: Dynamics of Transition*. Cape Town: Percept Publishers (Pty) Ltd.
- Perkel, A.K. Strebel, A. & Joubert, G. (1991). The psychology of AIDS transmission - issues for intervention. *South African Journal of Psychology*, 21(3), 148-152.
- Plant, M.L. Plant, M.A Peck, D.F. & Setters, J. (1989). The sex industry, alcohol and illicit drugs: implications for the spread of HIV infection. *British Medical Journal*, 84, 51-59.
- Pollack, M. (1988). The differential diffusion of the AIDS epidemic: a sociological approach. *Cahiers de Sociologie et de Demographie Medicales*, 28(3), 243-262.
- Power, R. (1989). Methods of drug use: injecting and sharing. In Aggleton, P. Hart, G. & Davies, P. (Eds.) *AIDS: Social Representations, Social Practices*. pp173-185. Brighton: Falmer Press.
- Preston-Whyte, E. (1992). The influence of culture on behaviour. *AIDS Bulletin*, 1(1), 20-22.
- Ratsaka, M.H & Hirschowitz, R. (1993). Knowledge, attitudes, beliefs and general sexual behaviour patterns/practices amongst inhabitants of high density informal settlements with regard to sexuality and AIDS related issues in Alexandria Township. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.

- Robertson, B.J. & McQueen, D.V. (1991). Continuous collection of data on AIDS-related behaviour in the UK. *Proceedings of the 23rd National Meeting of the Public Health Conference on Records and Statistics*, Public Health Service, Centres for Disease Control, National Centre for Health Statistics.
- Rocha-Silva, L. (1993). HIV infection/AIDS-related knowledge, attitudes and practices: alcohol/drug users (including intravenous drug users) receiving treatment in in selected centres in the RSA. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.
- Government of the Republic of South Africa. (1994). *White Paper on Reconstruction and Development: Government's strategy for fundamental transformation*. Pretoria: Government Press.
- Schneider, H. Steinberg, M. & Ijsselmuiden, C. (1993). *Understanding the Possible: Policies for the prevention of HIV in South Africa*. Centre for Health Policy: Johannesburg.
- Schulman, P. Castellon, C. & Seligman, M. (1989). Assessing explanatory style: The content analysis of verbatim explanations and the attributional style questionnaire. *Behavioural Research and Therapy*, 27(5), 505-512.
- Schoub, B. (1992). AIDS in South Africa - into the second decade. *South African Medical Journal*, 81, 55-56.
- Schurink, E. Schurink, W.J. & Botha, M. (1993). Knowledge, attitudes, perceptions and beliefs regarding AIDS and sexual behaviour of men who have sex with persons of the same/opposite sex. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.

Schurink, W.J. (1993). Commercial Sex Work. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.

Setiloane, M. (1990). AIDS in South Africa: some issues and considerations. *Social Work Review*, 2, 4-7.

Siano, N. (1993). *No Time to Wait: A Complete Guide to Treating, Managing, and Living with HIV Infection*. New York: Bantam Books.

Skinner, D. (1994). An attempt to understand how AIDS and AIDS related behaviour is conceptualised in two impoverished black communities. *Unpublished paper presented at the Psychology In Transformation Conference*, University of the Western Cape, January, 1994.

Smart, R. Webb, D. & Fincham, R. (1993). HIV/AIDS: The longer term implications for commerce and industry. Unpublished discussion paper for the Pietermaritzburg Chamber of Commerce and Industry, *Occasional Paper No.130*. AIDS Training, Information and Counselling Centre and Institute of Natural Resources.

St. Lawrence, J. Hood, H. Brasfield, T. & Kelly, J. (1989). Differences in gay men's AIDS risk knowledge and behaviour patterns in high and low AIDS prevalence cities. *Public Health Reports*, 104(4), 391-395.

Stein, Z. & Zwi, A. (1990). *Action on AIDS in Southern Africa: Maputo Conference on Health in Transition in Southern Africa. April 1990*. Committee for Health in Southern Africa: New York.

Swanevelder, R. (1994). Fourth national HIV survey of women attending antenatal clinics, South Africa, October/November 1993. *Epidemiological Comments*. 21(4), 68-78.

Taute, H.G. (1991). *AIDS: Knowledge of risk factors, perception of personal vulnerability, perceived efficacy of behaviour change, risk behaviour, and health protective behaviour - A study of AIDS prevention*. Unpublished Master's thesis. University of Natal, Pietermaritzburg.

Taylor, V. (1990). Health education - a theoretical mapping. *Health Education Journal*, 49, 13-14.

Tengani, A. (1993). Executive summary on hostel dwellers regarding AIDS: September 1992. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.

Transvaal Education Department circular minute 70/88.

Valois, P. Desharnais, R. & Godin, G. (1988). A Comparison of the Fishbein and Ajzen and the Triandis Attitudinal Models for the prediction of exercise intention and behaviour. *Journal of Behavioural Medicine*, 11(5), 459-472.

Visser, M.J. Korf, L. Claassen, N.C.W. Phehlukwayo, S. Pickworth, G.E. Posthuma, A.B. Pretorius, H.W. & Roos, J.L. (1993). Knowledge, Attitudes and perceptions regarding AIDS among students attending tertiary training institutions. *AIDS Research Feedback Session*. Unpublished report of the Department of National Health and Population Development.

Warwick, D.P. (1983). The KAP survey: Dictates of mission versus demands of science. In Bulmer, M. & Warwick, D.P. (Eds). *Social Research in Developing Countries: Surveys and Census in the Developing World*. pp349-365. New York: John Wiley & Sons.

- Webb, D. (1993). Long Term AIDS prevention: A viable option?. *Unpublished paper for the Centre for Developing Areas Research*, University of London and the Institute of Natural Resources, Pietermaritzburg, March.
- Weinstein, N.D. (1988). The Precaution Adoption Process. *Health Psychology, 7(4)*, 355-386.
- Weinstein, N. D. (1989). Perceptions of personal susceptibility to harm. In Mays, V.M Albee, G.W. & Schneider, S.F. (Eds.). *Primary Prevention of AIDS: Psychological Approaches*. pp 142-167. Newbury Park: Sage Publications.
- Whiteside, A. (1994). Country Profile: AIDS and HIV in Botswana. *AIDS Analysis Africa (Southern African Edition), 4(4)*, 4-5.
- Williams, A.F. & Lund, A.K. (1992). Injury control. What Psychologists can Contibute. *American Psychologist, 47(8)*, 1036-1039.
- Wilson, D., Zenda, A. & Lavelle, S. (1992). Predicting Zimbabwean women's ability to tell their partners to use condoms. *The Journal of Social Psychology, 132(2)*, 261-263.
- Wilson, D., Mparadzi, A. & Lavelle, S. (1992). An experimental comparison of two AIDS prevention interventions among young Zimbabweans. *The Journal of Social Psychology, 132(3)*, 415-417.
- Winkelstein, W. Lyman, D. Padian, N.S. Grant, R. Samuel, M. Wiley, J. Anderson, R. Lang, W. Riggs J. & Levy, J. (1987). Sexual practices and risk of infection by the human immunodeficiency virus. *Journal of the American Medical Association, 257*, 321-325.

Wood, G.D. (1994). Increases in risk behaviour - The issues. *Positive Outlook*, 1(2), 6-7.

Worth, D. (1989). Sexual decision-making and AIDS: Why condom promotion among vulnerable women is likely to fail. *Studies in Family Planning*, 20(6), 297-307.

Zandberg, L. (1993). AIDS control - South Africa's role. *Epidemiological Comments*, 20(11), 202-203.

Zazayokwe, M. (1990). Some barriers to education about AIDS in the Black community. *Social Work Practice*, 2, 8-9.

Zulu, P. (1990). Fieldwork: crossing the boundary between the theoretical and the experiential. In Hugo, P. (Ed). *Truth be in the Field: Social Science Research in South Africa*. pp322-328. Pretoria: University of South Africa.

APPENDICES

AIDS Questionnaire

INSTRUCTIONS: Read each question or statement, and decide what your answer is. Put a cross in the correct box:

YES NO DON'T KNOW

Eg: Men can fall pregnant.

1. Do you think you could ever get AIDS ?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>
2. Can the AIDS germ be spread by:	
a) Working with an infected person?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>
b) Using the same toilet as an infected person?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>
c) Sexual intercourse with an infected person?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>
d) Mosquito Bites?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>
3. Can YOU do anything to prevent yourself getting AIDS?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>
4. Will all babies who are born to infected mothers die of AIDS?	<p style="text-align: center;">YES NO DON'T KNOW</p> <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </p>

II

5. Are you worried that you might get AIDS?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
6. Do you use condoms when having sex with your regular partner/s (husband, wife, girlfriend, boyfriend) ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
7. Do you ever have partners other than your regular partner/s (husband, wife, girlfriend, boyfriend) ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
8. (Only answer this question if the answer to question 7 is YES.) Do you use condoms when having sex with partners other than your regular partner/s (husband, wife, girlfriend, boyfriend) ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
9. Have you ever been treated for a sexually transmitted disease ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
10. Do you do anything to prevent yourself from getting AIDS ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
11. If you were worried that you were infected with the AIDS germ, would you go for a blood test ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
12. Do you think any of your friends could get AIDS ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
13. "Real" men (Amadoda) don't use condoms.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
14. Can you see if someone has the AIDS germ ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>

III

15. AIDS and HIV infection are the same thing.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
16. AIDS is a white people's disease.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
17. People with AIDS always die.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
18. People like me never get AIDS.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
19. Only people who have many sexual partners get AIDS.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
20. There is no risk from donating (giving) blood.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
21. Condoms are a government plot to control the population.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
22. AIDS can be cured by: a) a doctor	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
b) a traditional healer (Inyanga)_	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
23. AIDS came from homosexuals (men who have sex with men).	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
24. It is good that people with AIDS die.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>

IV

25. Condoms make sex less enjoyable.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
26. A woman should never suggest to a man that he use a condom.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
27. I know where to get condoms.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>
28. Would you work with someone who had AIDS ?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	DON'T KNOW <input type="checkbox"/>

PERSONAL QUESTIONNAIRE

Place a cross in the correct box

1. When were you born? 19_____
2. What is your sex? Male
- Female
3. Are you married? Yes
- No
4. What standard did you pass at school? Std 2 - Std 5
- Std 6 - Std 8
- Std 9 - Std 10
5. Where do you live? With your parents (mother &/or father)
- With your family (husband, wife &/or children)
- With relatives
- In lodgings
- In a hostel
- Other
6. How many sexual partners have you had in the last two months? None One 2 - 4 More than 5 Don't know
7. Have you ever paid for sex? (iseqamgwaqo) Yes No
8. MALES ONLY
Have you ever had sex with a man? Yes No

IMBUZO NQENNQULAZA

IMITHETHO: Funda umbuzo ngamunye, bese unguma ukuthi imphendulo yakho iyiphi.

ISIBONELO:

Amadoda angakhulelwa

yebo cha angazi

1. Uyacabanga ukuthi ungase uyithole ingculaza na?	yebo cha angazi
2. Lingase igcewane lengculaze lisaphazeke ngoku:	
(a) Sebenza nomuntu ophethwe ingculaza?	yebo cha angazi
(b) Sebenzisa indlu yangasese eyodwa nomuntu ophethwe ingculaza?	yebo cha angazi
(c) Ngokuva ocansini nomuntu ophethwe ingculaza?	yebo cha angazi
(d) Lunywa umiyane?	yebo cha angazi
3. Ngabe ikhona yini into ongayenza ukuze uziyikela wena ekutholeni ingculaza?	yebo cha angazi
4. Ngabe bonke abantwana abazalwa omama abahlatswe ingculaza bayafa bebulawa ingculaza?	yebo cha angazi
5. Ngabe uphatheke kabi ukuthi ungase uthole ingculaza?	yebo cha angazi
6. Ngabe uyayisebenzisa ikhondomu (ijazi lendoda) uma uya ocansini nesithandwa sakho noma izithandwa zakho eziwayelekile (indoda, unkosikasi, intombi, isoka)?	yebo cha ngesinye isikhathi
7. Ungabe unabo abanye enithandana nabo eceleni ngaphandle kwesithandwa sakho esijwayelekile noma kwezithandwa zakho esijwayekile (indoda, unkosikazi, intombi, isoka)?	yebo cha
8. (Phendula lombuzo kuphela uma uphendule umbuzo 7) Ngabe uyayisebenzisa ikhondomu uma uya ocansini nezithandwa zakho ngaphandle kwalezi eziwayeleki (indoda, unkosikazi, intombi, isoka)?	yebo cha ngesinye isikhathi
9. Usake walashelwa izifo ezithathelanayo zocani?	yebo cha

10. Ngabe kukhona into oyenzayo ukuthi uziyikele ekutholeni ingculaza?	yebo cha
11. Uma uphatheke kabi ukuthi kungase kwenzeke ukuthi unegcewane lengculaza ngabe ungaya ukuyohlolwa igazi?	yebo cha angazi
12. Uyacabanga ukuthi abangani bakho kungenzeka bathole ingculaza?	yebo cha angazi
13. Amadoda "agatho" awayisebenzisi ikhondomu (ijazi lendoda)?	yebo cha angazi
14. Ngabe ungakwazi ukubona uma omunve enegcewane lengculaza?	yebo cha angazi
15. Ingculaza kanve ne HIV into eyodwa.	yebo cha angazi
16. Ingculaza isifo sabelungu.	yebo cha angazi
17. Abantu abanengculaza bavame ukufa.	yebo cha angazi
18. Abantu abanjenganami abayitholi ingculaza.	yebo cha angazi
19. Abantu abanezithandwa eziningi, kuphela abathola ingculaza.	yebo cha angazi
20. Ayikho ingozi yokuthola ingculaza ngokuthelekisa (ukunikela) ngeqazi.	yebo cha angazi
21. Amakhondomu (amajazi endoda) icebo likahulumeni lokuvimba ukwanda kwabantu.	yebo cha angazi
22. Ingculaza ingalashwa: (a) udokotela	yebo cha angazi
(b) abalaphi besintu (izinyanga).	yebo cha angazi
23. Ingculaza yaqhamuka kongqingili (amadoda aya ocansini namanye amadoda).	yebo cha angazi
24. Into enhle ukuthi abantu abanengculaza bafe.	yebo cha angazi
25. Amakhondomu enza kungabi mndi ocansini.	yebo cha angazi
26. Owesifazane akufanele ukuba ahlangoze ukuthi indoda mayisebenzise ikhondomu.	yebo cha angazi
27. Ngiyazi lapho kutholakala khona amakhondomu.	yebo cha angazi
28. Ngabe ungasebenza nomuntu ophethwe ingculaza?	yebo cha angazi

APPENDIX B

Interview Schedule

A. Introduction Patter

Introduce yourself by name, say that you are interested in gaining ideas about health matters in this community. Stress that:

1. Everything said will be strictly confidential - although there is a questionnaire and tape recorder, at no point will your name or address be recorded. Information is reduced to numbers and a computer so that whatever information will be general and non-traceable.
2. True, honest opinions are very important. The information is to be used to assess what needs the community has in terms of service and health.
3. The research is being conducted under 3 non-governmental bodies: The Progressive Primary Health Care Network, The Psychology Department of the University of Natal, and the Organisation for Appropriate Social Services in South Africa.
4. The tape recordings will be destroyed after being analysed and are merely being used so that the exact needs of different people in the community can be voiced.

B. Structured Interview

Start the interview proper. A casual manner is most appropriate, but questions must begin at a general level - about health and service needs, and then go on to the specifics about AIDS and how the person is affected by it. Make sure that the following specific questions are asked, verbatim:

1. How healthy is your community? - please mention what is good and bad.
2. What aspects of health have affected you directly? - which of these has affected anyone you live with? - which of these has affected anyone you know?
3. What are the urgent needs of the community with regards to health? - Are your needs the same, or different?
4. Are there any illnesses that affect your community? - Do these illnesses affect you and your family?
5. What is the cause of such illnesses?

6. Who is responsible for you being exposed to these illnesses?
7. What, is it said, can you do to prevent them? - What do you do to prevent them?
8. Have you heard of illnesses that one can get from other people?
9. Has anyone here spoken of the illness that is called AIDS?
10. Has this illness affected you directly? - anyone you know? Are you afraid of it?
11. Do you know about AIDS anywhere else in the country? Explain.
12. How does one get AIDS?
13. What caused AIDS? Where does it come from?
14. What can be done to improve the health of you, your family and your community? - what can be done to prevent AIDS?
15. Some say that one can control AIDS by using a condom. What is your opinion?
16. What is the role played by the health services?
17. Who is most endangered by AIDS?

C. Questionnaire

Now state that there are some specific questions that need to be answered. If the person is comfortably literate - let them fill in the questionnaire themselves. If not, read out the question and record their choice. When finished, thank the person for their help and give them the pamphlets - tell them that there is some basic information on the pamphlet and if they have any further questions or needs with respect to health or AIDS, contact:

The PPHCN
206 Burger Street
Pietermaritzburg

or phone (0331) 947807 Ext 211 or ask for PPHCN.

APPENDIX C

NO	QUESTION	VARIABLE	VALUES	SCALE
1	Subject Number			
2	Interviewer	INT	Bongi = Binginkosi Dennis = Dennis Nomb = Nombulelo	
3	Area Subject Lives	AREA	Ashdown Azalea Dambuza Edendale Esinathini Hopewell Imbali Impendhle Kranskop (Ntunjumbili) Mpolweni Ntokozweni Sobantu	
4	Standard passed	Standard	1 = Std 2-5 2 = Std 6-8 3 = Std 9-10	

5	Who do you live with ?	Abode	1 = with parents 2 = with family 3 = with relatives 4 = in lodgings	
6	Number of sexual partners in last 2 months	Partners	1 = none 2 = one 3 = two to four 4 = more than 5 5 = don't know	Behaviour
7	Have you ever paid for sex ?	Sexworker	1 = yes 2 = no	
8	Have you ever had sex with a man ?	Sexman	1 = yes 2 = no	
9	Sex (in code)	Sexcode	1 = M 2 = F	

10	Code of place names	Geocode	1 = Endendale 2 = Imbali 3 = Ashdown 4 = Dambuza 5 = Esinathini 6 = Sobantu 7 = Azalea 8 = Hopewell 9 = Mpolweni 10 = Impendhle 11 = Ntokozweni 12 = Kranskop (Ntunjambili)
11	Marital status in code	Marcode	1 = married 2 = unmarried

12	Age	Agecat	1 = 17 - 20 2 = 21 - 25 3 = 26 - 30 4 = 31 - 35 5 = 35+	
13	Do you think you could ever get AIDS?	Q 1	1 = yes 0 = no/don't know	Vulnerability
14	Can the AIDS germ be spread by: Working with an infected person ?	Q 2a	1 = no 0 = yes/don't know	Knowledge
15	Using the same toilet as an infected person ?	Q 2b	1 = no 0 = yes/don't know	Knowledge
16	Sexual intercourse with an infected person ?	Q 2c	1 = yes 0 = no/don't know	Knowledge
17	Mosquito bites ?	Q 2d	1 = no 0 = yes/don't know	Knowledge
18	Can you do anything to prevent yourself from getting AIDS ?	Q 3	1 = yes 0 = no/don't know	Vulnerability <i>(item removed)</i>

19	Will all babies who are born to infected mothers die of AIDS ?	Q 4	1 = no 0 = yes/don't know	Knowledge
20	Are you worried that you might get AIDS ?	Q 5	1 = yes 0 = no/don't know	Vulnerability
21	Do you use condoms when having sex with your regular partner/s (husband, wife, girlfriend, boyfriend)?	Q 6	1 = yes 0 = no/sometimes	Behaviour <i>(item removed)</i>
22	Do you ever have partners other than your regular partner/s (husband, wife, girlfriend, boyfriend) ?	Q 7	1 = no 0 = yes	Behaviour
23	Do you use condoms when having sex with partners other than your regular partner/s ?	Q 8		Behaviour <i>(item removed)</i>
24	Have you ever been treated for a sexually transmitted disease ?	Q 9	1 = no 0 = yes	Behaviour

25	Do you do anything to prevent yourself from getting AIDS ?	Q 10	1 = yes 0 = no	Efficacy
26	If you were worried that you were infected with the AIDS germ, would you go for a blood test ?	Q 11	1 = yes 0 = no/don't know	
27	Do you think any of your friends could get AIDS ?	Q 12	1 = yes 0 = no/don't know	Vulnerability
28	"Real" men (Amadoda) don't use condoms.	Q 13	1 = no 0 = yes/don't know	Stereotype
29	Can you see if someone has the AIDS germ ?	Q 14	1 = no 0 = yes/don't know	Knowledge
30	AIDS and HIV infections are the same thing.	Q 15	1 = no 0 = yes/don't know	Knowledge
31	AIDS is a white people's disease.	Q 16	1 = no 0 = yes/don't know	Stereotype

32	People with AIDS always die.	Q 17	1 = yes 0 = no/don't know	Knowledge
33	People like me never get AIDS.	Q 18	1 = no 0 = yes/don't know	Vulnerability <i>(item removed)</i>
34	Only people who have many sexual partners get AIDS.	Q 19	1 = no 0 = yes/don't know	Stereotype Knowledge
35	There is no risk of getting AIDS from donating (giving) blood.	Q 20	1 = yes 0 = no/don't know	Knowledge
36	Condoms are a government plot to control the population.	Q 21	1 = no 0 = yes/don't know	Stereotype
37	AIDS can be cured by: a) A doctor	Q 22a	1 = no 0 = yes/don't know	Knowledge
38	b) A traditional healer (eg: Inyanga)	Q 22b	1 = no 0 = yes/don't know	Knowledge

39	AIDS came from homosexuals (men who have sex with men)	Q 23	1 = no 0 = yes/don't know	Stereotype
40	It is good that people with AIDS die.	Q 24		
41	Condoms make sex less enjoyable.	Q 25	1 = no 0 = yes/don't know	Stereotype
42	A woman should never suggest to a man that he use a condom.	Q 26	1 = no 0 = yes/don't know	Stereotype
43	I know where to get condoms.	Q 27	1 = yes 0 = no	Efficacy
44	Would you work with someone who had AIDS ?	Q 28	1 = yes 0 = no/don't know	Stereotype

NO	ITEM	VARIABLE	VALUES
45	How healthy is your community?	(Comhlth)	1 = fair 2 = good 3 = bad 4 = no opinion
46	Please mention what is good or bad from the above.	(Hlthdesc)	1 = problems with drugs 2 = problems with housing 3 = problems with drugs & housing 4 = problems with drugs & promiscuity 5 = problems with litter 6 = problems with unemployment 7 = problems with water 8 = problems with diseases 9 = insufficient health services 10 = problems with water & disease 11 = no AIDS 12 = no diseases
47	What aspects of health directly affect you ?	(Selfhlth)	1 = unaffected 2 = menstruation 3 = STDs 4 = drunkenness 5 = lack of water 6 = kidney problems 7 = sanitation 8 = housing

48	a) Which of these has affected your family or friends ?	(Famhlth)	1 = unaffected 2 = TB
			3 = other diseases 4 = water 5 = sanitation 6 = drunkenness 7 = TB and other illnesses 8 = Menstruation 9 = Kidney problems
			1 = same effects 2 = different effects
49	What are the urgent needs of the community with regards to health?		
a) Development (housing, roads, electricity, transport)			(Devt) 1 = present 2 = not present
b) Water			(Water) 1 = present 2 = not present
c) Health facilities (clinical health facilities)			(Health) 1 = present 2 = not present
d) Employment			(Employ) 1 = present 2 = not present

	e) Recreation	(Recreat)	1 = present 2 = not present
	f) Sanitation (litter sanitation)	(Sanit)	1 = present 2 = not present
	g) Education	(Educat)	1 = present 2 = not present
	h) AIDS education	(AIDS)	1 = present 2 = not present
50	Are your needs the same or different ?	(Yourneed)	1 = same 2 = different 3 = not sure
51	Are there any illnesses that affect your community ?	(Commill)	1 = yes 2 = no 3 = not sure
52	Do these illnesses affect you and your family ?	(Youfam)	1 = yes 2 = no 3 = not sure
53	Which illnesses: a) TB (chest troubles)	(illTB)	1 = present 2 = not present

b) Alcohol	(illalcohol)	1 = present 2 = not present
c) Menstruation	(illmenst)	1 = present 2 = not present
d) Small pox	(illsmall)	1 = present 2 = not present
e) Measles	(illmeas)	1 = present 2 = not present
f) AIDS	(illAIDS)	1 = present 2 = not present
g) STDs	(illSTD)	1 = present 2 = not present
h) Pinkeye	(illpink)	1 = present 2 = not present
i) 'Flu	(illflu)	1 = present 2 = not present
j) Cholera	(illchol)	1 = present 2 = not present
k) Rash (aches, eczema, sores)	(illrash)	1 = present 2 = not present

	l) Stomach (problems)	(illstom)	1 = present 2 = not present
	m) Other (eneuresis, bilharzia, headaches, asthma, heart problems)	(illother)	1 = present 2 = not present
54	What is the cause of such illnesses?		
	a) Water	(Causwatr)	1 = present 2 = not present
	b) Litter/sanitation/dirt	(Caussant)	1 = present 2 = not present
	c) Housing	(Caushous)	1 = present 2 = not present
	d) Personal contact	(Causpers)	1 = present 2 = not present
	e) Disease	(Causdis)	1 = present 2 = not present
	f) None/ not sure	(Causnon)	1 = present 2 = not present

55	Are these illnesses due to personal (self) or environmental (nature) ?	(Pers)	<p>1 = personal</p> <p>2 = environmental</p> <p>3 = both</p> <p>4 = not sure</p>
56	Who is responsible for you being exposed to these illnesses?	(Blame)	<p>1 = nobody/not sure</p> <p>2 = authorities (overcrowding, litter & government)</p> <p>3 = personal exposure (person-to-person, carelessness, families, ourselves/lifestyles)</p> <p>4 = other</p>
57	What have you heard you can do to prevent illnesses ?		<p>1 = condoms</p> <p>2 = clinic</p> <p>3 = not sure /nothing</p> <p>4 = hygiene, diet, exercise, be cautious with water</p> <p>5 = housing</p> <p>6 = other</p>

58	What do you do to prevent them?	(You)	1 = condoms 2 = clinic 3 = not sure/nothing 4 = hygiene, diet, exercise, water, cautious 5 = housing 6 = other
59	Are there clinics for the prevention or treatment of illnesses ?	(Clinic)	1 = prevention 2 = treatment
60	Have you heard of illnesses that one can get from another person ?	(Contgion)	1 = yes 2 = no 3 = not sure
61	Has anyone here spoken of the illness called AIDS ?	(Speak)	1 = yes 2 = no
62	Where did you hear it from ?	(Hear)	1 = talk 2 = media 3 = other
63	Has this illness affected you directly ?	(Affect)	1 = yes 2 = no 3 = not sure

64	Has it affected anyone you know?	(knowaids)	1 = yes 2 = no 3 = not sure
65	Are you afraid of it ?	(Afraid)	1 = yes 2 = no 3 = not sure
66	Do you know about AIDS anywhere else in the country ?	(Elsewhere)	1 = yes 2 = no 3 = not sure
67	How does one get AIDS ?		
	a) sexual intercourse	(Getsexint)	1 = present 2 = not present
	b) promiscuity	(Getpromisc)	1 = present 2 = not present
	c) kissing	(Getkiss)	1 = present 2 = not present
	d) sharing razors	(Getblood)	1 = present 2 = not present
	e) sexual intercourse with PWA (people with AIDS)	(GetPWA)	1 = present 2 = not present

	f) not sure	(Gets)	1 = present 2 = not present
68	What caused AIDS ?	(Cause)	1 = not sure 2 = promiscuity 3 = prostitution 4 = virus 5 = homosexuals 6 = bacteria 7 = whites 8 = combination
69	Where does it come from ?	(Origin)	1 = not sure 2 = overseas 3 = whites 4 = all over 5 = animals 6 = North Africa 7 = Monkeys in Africa 8 = returning overseas exiles 9 = combination
70	How can health be improved in your community ?	(Improve)	1 = not sure 2 = Health (health education, improving clinics, more clinics etc.) 3 = Development (hygiene, increase in water, increase in housing and employment) 4 = Health and development (combination of the two)

71	How can AIDS be prevented ? (Prevent)	1 = condoms 2 = one partner 3 = condoms and 1 partner 4 = AIDS education 5 = not sure 6 = other/combination 7 = avoid sex/blood
72	AIDS can be controlled with a condom. (Control)	1 = agree 2 = disagree 3 = not sure
73	What is your opinion of controlling AIDS with a condom. (Why)	1 = not whole solution 2 = unsatisfactory (not willing) 3 = not safe 4 = no personal knowledge 5 = other
74	What is the role played by the health services ? (Role)	1 = not sure 2 = no role 3 = Health/AIDS education 4 = medical help/treatment 5 = provide condoms and advice 6 = family planning 7 = other combinations

75	Who is most endangered by AIDS?	(Endanger)	1 = promiscuous women
			2 = women
			3 = people not practising safer sex
			4 = promiscuous people
			5 = everyone/both sexes
			6 = men
			7 = youth
			8 = not sure

APPENDIX D

FACTOR ANALYSIS - Final Statistics

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	Cum Pct
		*				
STANDARD	.52931	*	1	5.94869	18.0	18.0
PARTNERS	.38979	*	2	4.28796	13.0	31.0
SEXCODE	.67622	*	3	3.77569	11.4	42.5
COMHLTH	.55999	*	4	2.95479	9.0	51.4
DEVT	.37632	*	5	2.88866	8.8	60.2
WATER	.82336	*				
HEALTH	.69297	*				
SANIT	.66286	*				
YOURNEED	.60577	*				
ILLTB	.18495	*				
ILLMEAS	.70456	*				
ILLPINK	.45204	*				
ILLCHOL	.82621	*				
ILLRASH	.68504	*				
CAUSWATR	.65640	*				
CAUSSANT	.61012	*				
CAUSEPER	.57861	*				
CAUSDIS	.31417	*				
CAUSENON	.38136	*				
AFFECT	.68504	*				
GETSEX	.87073	*				
GETPROM	.57850	*				
GETBLOOD	.85894	*				
GETPWA	.34932	*				
GETNS	.82999	*				
CONTROL	.66314	*				
EFFICACY	.47743	*				
KNOWLEDG	.74567	*				
BEHAVE	.55147	*				
STEREO	.67089	*				
VULN	.39627	*				
URBRUR	.89995	*				
AGECAT	.56838	*				

Rotated Factor Matrix:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
STANDARD	-.45676	-.40771	-.13632	-.18312	.31991
PARTNERS	.58869	.11602	-.15729	.06870	.01784
SEXCODE	.51606	.57572	.07477	.18844	-.19326
COMHLTH	.37133	.02214	-.17226	.62318	.05990
DEVT	-.13166	.04564	-.48584	.34764	-.00118
WATER	-.13957	-.16626	.68805	-.25708	.48655
HEALTH	.22099	.01438	.35679	.13060	-.70680
SANIT	.51605	.03046	-.60142	-.04377	.17887
YOURNEED	.74653	.04259	-.01386	.15947	-.14503
ILLTB	.00721	.05437	-.13562	-.10455	-.39066
ILLMEAS	.38431	.20589	.23360	.46393	.49464
ILLPINK	-.17785	.20279	.20695	.10551	-.57037
ILLCHOL	-.07853	-.68419	.37322	.12152	.44483
ILLRASH	-.02248	-.82200	.08092	.01147	.04666
CAUSWATR	-.06086	-.32071	.68840	.12884	.24362
CAUSSANT	.35132	-.20448	-.62354	.20076	.12559
CAUSEPER	.51048	.09002	-.43522	.12090	.32539
CAUSDIS	.01329	.05997	-.06339	-.01135	-.55340
CAUSENON	-.52167	.23569	-.03227	-.14337	-.17908
AFFECT	.02248	.82200	-.08092	-.01147	-.04666
GETSEX	-.29606	-.15476	-.18044	.69927	-.48743
GETPROM	.60114	.23384	-.27010	-.09714	.28295
GETBLOOD	.02285	.08568	.51571	.66884	.37117
GETPWA	-.18270	-.12839	-.15105	.42919	.30403
GETNS	-.15934	.21373	.45772	-.66574	.32589
CONTROL	-.03991	.80939	.06598	.03840	.02480
EFFICACY	.22514	-.63036	.14871	-.08448	.01169
KNOWLEDG	.63183	-.37232	.25494	-.29140	-.24071
BEHAVE	.29318	.21048	-.05815	.62598	-.16119
STEREO	.77825	-.20917	.03587	-.03476	-.13776
VULN	-.03354	-.05702	.10228	-.61503	-.05625
URBRUR	-.05588	.31339	-.85088	.26054	.08207
AGECAT	.18393	.43975	.51820	-.16146	-.21580

Factor Transformation Matrix:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
FACTOR 1	.49668	.48039	-.57771	.39949	-.17087
FACTOR 2	.49014	-.72955	-.12152	.25621	.38354
FACTOR 3	.69040	.22361	.63585	-.24658	-.09078
FACTOR 4	-.18331	.06972	.49637	.84471	-.04014
FACTOR 5	-.05299	.42676	.02832	-.02049	.90214

