

**WORKPLACE HEALTH PROMOTION AT RHODES UNIVERSITY: HARMFUL USE OF  
ALCOHOL**

A thesis submitted to **RHODES UNIVERSITY** in fulfilment of the requirements for the  
degree of

**MASTER OF PHARMACY**

By

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## 1 ABSTRACT

### **Background:**

Non-communicable diseases (NCDs) are responsible for 38 million deaths annually, which translates to 68% of global deaths every year. Incidence and prevalence of NCDs are increasing rapidly and the poor bear a disproportionate burden. The increase in NCDs has been primarily due to a proliferation of modifiable risk factors, such as unhealthy diet, physical inactivity, tobacco use, and excessive alcohol consumption. Substance abuse, mainly of alcohol, is a common cause of health problems in almost all countries across the globe. Alcohol abuse is a major contributor to the global burden of diseases and accounts for 3.3 million deaths, approximately 5.9% of all global deaths, annually. Alcohol misuse is the fifth leading risk factor for premature death and disability and is the top risk factor among people between 15 and 49 years of age. The rise of harmful use of alcohol in South Africa contributes to the disease burden faced by the country, with alcohol-related disorders making up 44.6% of all alcohol-attributable disabilities. Strategies to reduce harmful use of alcohol include national policies and educational interventions including health promotion.

Health promotion is a common practice in the prevention of NCDs, but workplace health promotion has not yet been well established in many workplaces. Identification of past workplace initiatives and exploring their facilitating and limiting factors is thus important to consider when planning future initiatives. Raising awareness on harmful use of alcohol through workplace health promotion projects can help to prevent and reduce alcohol-related problems. For these health promotion activities to succeed, they need to be developed with consideration of factors such as the environment, culture, and socio-economic standing of the intended target population.

### **Method:**

This study, conducted at Rhodes University, followed a mixed methods research approach and consisted of two phases. The first phase of the current study was a needs assessment and involved working with the key stakeholders. Using the Community Based Participatory Research approach and the Centres for Disease Control and prevention workplace health model to guide the research, five semi-structured interviews were conducted with key stakeholders to identify factors affecting workplace health promotion, and their opinions on how to improve these initiatives were sought. The participants were asked to identify areas on which the intended intervention should focus, as well as to identify their preferred means of communicating health messages. During this phase, a group of peer educators who volunteered their involvement in the health promotion project focusing on harmful use of alcohol was also identified.

The second phase of this project aimed to address concerns raised in the first phase through a health promotion initiative for support staff that focuses on the prevention of NCDs diseases through reducing alcohol related harm. During the educational health promotion phase of the study, three health information leaflets based on harmful use of alcohol were designed. These leaflets went through a series of evaluations by the researchers' peers, support staff during a pilot study, peer educators and other health professionals to assess content validity, context specificity, and cultural appropriateness for the target group. The health

information leaflets were then used as written materials in the educational intervention of the project and were also used to design a poster.

Through participatory involvement, a facilitator's manual on harmful use of alcohol was developed, which was used during the workshops in the implementation phase of the research. The facilitator's manual was modified based on provided feedback on improving the content of the facilitator's manual. The readability of the manual was also performed to make it suitable for the end users.

The peer educators were also trained through workshops to enable them to promote and raise awareness on harmful use of alcohol to others in the workplace. Workshops were participatory in nature and were also equipped with the completed health information leaflets to distribute to their peers and to use as reference sources of information when needed.

### **Results:**

Participants in the semi-structured interviews reported that some health promotion initiatives have previously been attempted and advertised to support staff, but there was poor participant participation. Peer educators reported that these initiatives were not communicated to them and venues and work commitments sometimes were barriers to participation in these projects. The peer educators suggested incentivising initiatives for better participation. Another key suggestion was to inform and to include their managers and supervisors in these initiatives so they are permitted to take time off work. Health education material like posters or leaflets were also proposed as modes of delivering health information.

During the design of the material to be used for this project's intended intervention, the health information leaflets were deemed readable, suitable, actionable, context-specific, and culturally appropriate. Workshops conducted during Phase 2 of the study proved to be valuable in training peer educators. Peer educators also deemed the workshops useful, and reported their readiness to be agents of change in the workplace.

### **Conclusions:**

Based on the input of key stakeholders and peer educators, there is currently no health promotion policy at Rhodes University, especially with respect to NCDs health promotion policies and protocols for NCDs. Health promotion initiatives, especially for support staff, that address NCDs have previously been attempted at the university but were not successful. Factors affecting workplace health promotion were identified. Knowledge of these factors was useful when implementing the health promotion project on harmful use of alcohol. The health leaflets were deemed suitable for use by the target population. Peer educators who went through the workshops and were provided with the facilitators' manuals concluded that the sessions were useful in their continued participation in the health promotion project. Continued involvement of the Wellness Office and peer educators can assist in ensuring the sustainability of this workplace health initiative.

## Declaration

I declare that this thesis, titled “**Workplace health promotion at Rhodes University: Harmful use of alcohol**”, is my own work and that it has not been submitted for any degree or examination at any other university. All sources of information that I have used or quoted from have been indicated and acknowledged in a complete reference section.

Signature .....

Date:

## **DEDICATION**

This thesis is dedicated to my mother who has always loved me unconditionally.

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## RESEARCH OUTPUTS

### MANUSCRIPTS PUBLISHED

- Rufaro Manhanzva, Praise Marara, Theodore Duxbury, Noel J. Pearse, Erik Hoel, Thandi Mzizi, Sunitha C. Srinivas. **Gender and leadership for health literacy to combat the epidemic rise of Non-Communicable Diseases.** SAGE – Leadership. Available from <https://www.tandfonline.com/doi/abs/10.1080/07399332.2017.1332062>
- Praise Marara, Seema Rath, Sean James Bosman, Sunitha Srinivas. **Curtailing Unhealthy Consumption of Alcohol for Sustainable Development in India and South Africa.** Indian Journal of Pharmacy. Available from <http://www.ijopp.org/article/450>

### MANUSCRIPTS ACCEPTED FOR PUBLICATION

- Samridhi Sharma, Praise Marara, Nick Townsend, Sunitha Srinivas. **Developing and Testing a Culture-Sensitive Health Information Leaflet for Low Literate Support Staff.** The Ethiopian Journal of Health Development (EJHD)
- M. P. Mhlongo, P, Marara, K. Bradshaw, S. C. Srinivas. **Health promotion on diabetes: using service-learning principles at a South African national science festival.** African Journal of Health Professions Education

### CONFERENCE PRESENTATIONS

1. Praise Marara, Sunitha Srinivas, Lucky Mtolo, Mesuli Mhlongo, Mawande Golozana, Theodore Duxbury, Karen Bradshaw, Roman Tandlich, Sandile Khamanga, Nompilo Tshuma. **Use of technology for Health Promotion during the National Science Festival 2016.** Community engagement symposium, Rhodes University, Grahamstown, Eastern Cape, South Africa. 3 May 2016.
2. Praise Marara, Sunitha Srinivas. **Health promotion on responsible use of Alcohol.** MEC Eastern Cape Healthcare Summit and Excellence Awards, East London, Eastern Cape, South Africa. 12 - 13 May 2016
3. P. Marara, S. Sharma, T. Mzizi, S. Srinivas. **Designing and testing culturally-sensitive health information leaflet on 'Health Consequences of Alcohol Abuse' for low literates.** The Public Health Association of South Africa / University of Fort Hare, Conference, East London International convention center, 21 September 2016, East London, South Africa.
4. P. Marara, S. Srinivas. **Designing and testing culturally-sensitive health information leaflet on 'Health Consequences of Alcohol Abuse' for low literates.** The All Africa Congress 5-7 October 2016, Johannesburg, South Africa.

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## LIST OF ACRONYMS

CLI	Coleman-Liau Index
FGD	Focus Group Discussion
FKGLS	Flesch-Kincaid Grade Level Score
FRES	Flesch Reading Ease Score
HCC	Health Care Centre
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
HP	Health Promotion
MDG	Millennium Development Goal
NCD	Non-Communicable Disease
NDoH	National Department of Health
NGO	Non-Governmental Organisation
PEMAT	Patient Education Material Assessment Tool
RU	Rhodes University
SAM	Suitability Assessment of Materials
SDG	Sustainable Development Goal
SMOG	Simplified Measure of Gobbledygook
SSI	Semi-Structured Interview
UN	United Nations
UNDP	United Nations Development Programme
USA	United States of America
WHO	World Health Organisation
WHP	Workplace Health Promotion
WHPP	Workplace Health Promotion Project

## GLOSSARY OF TERMS

<b>Context specificity</b>	tailoring of materials or a programme to suit a particular setting.
<b>Culture sensitivity/ appropriateness</b>	tailoring of materials or a programme such that it is suitable, acceptable, sensitive and respectful towards the culture of the people to whom it will be delivered.
<b>Health Care Centre (HCC)</b>	A facility located at the Rhodes University campus staffed by a group of nurses and a sessional doctor available on weekday mornings. It serves to provide health care services to all students and staff at the university. Some of the medical services provided include but are not limited to treatment of minor ailments, e.g. flu and tonsillitis, long term treatment of chronic illnesses, e.g. hypertension and diabetes, HIV testing, counselling and initiation of treatment and screening tests, e.g. blood pressure and cholesterol. The HCC also offers information services such as health education on a range of health topics, awareness campaigns e.g. breast cancer and substance abuse, and free literature on health issues.
<b>Key stakeholder</b>	non-academic Rhodes University staff who work as managers of the support staff.
<b>Rhodes University</b>	a tertiary education institution located in the Eastern Cape province of South Africa.
<b>Support staff</b>	non-academic Rhodes University staff who work across the university campus in various departments such as catering, gardening, cleaning, and laundry services.
<b>Workplace health promotion</b>	the combined efforts of employers, employees, and society to improve the health and well-being of people at work. This can be achieved through a combination of: improving the work organisation and the working environment, promoting active participation, and encouraging personal development (WHO, 2015).

## INTRODUCTION

### 1.1 Background and problem statement

One of the facts of non-communicable diseases (NCDs) highlighted by the World Health Organisation (WHO) is that they account for 38 million of the 57 million global deaths per year (WHO, 2013a). NCDs are rapidly advancing as the leading cause of morbidity and mortality across social classes in developing countries. NCDs are triggered by four major modifiable risk factors: unhealthy diets (consumption of foods high in salt, fat and sugar); physical inactivity; tobacco use; and excessive alcohol consumption (WHO, 2015b). Consumption of alcohol has been identified as one of the main determinants of NCDs. There are strong links between alcohol and several of the major NCDs. Tobacco and alcohol are responsible for a major part (8.1%) of the disease burden, with alcohol being the top risk factor for health in developing countries (Poznyak, 2005).

Increase in alcohol use in developing countries is one of the reasons why there is an increase in NCDs (Bird, 2015). The harmful use of alcohol is a causal factor in more than 200 disease and injury conditions, including liver diseases, cancers, cardiovascular diseases, mental illnesses, and injuries. Alcohol accounted for 5.9% of death and 5.1% of disability adjusted life years (DALYs) lost in 2012 globally (NCD Alliance, 2017). While adult per capita consumption is highest in high-income countries, it is nearly as high in the populous upper-middle-income countries (WHO, 2011a). Alcohol is the leading risk factor for death and disability in large parts of the world, including sub-Saharan Africa (SSA) (Rehm et al., 2009; WHO, 2000).

The WHO states that South Africa has one of the highest levels of alcohol consumption in the world. It is estimated that 5 billion litres of alcohol are consumed annually in South Africa alone. South Africa's alcoholic drink consumption is high, with an alcohol per capita (15+) consumption of 11, combined with high abstention rate of 73% (Econometrix, 2013; WHO, 2014a). Therefore, the relatively smaller percentage of the population that drinks is consuming alcohol at alarmingly high levels. The combined total tangible and intangible costs of alcohol harm to the economy were estimated at 10 - 12% of the 2009 gross domestic product (GDP). The tangible financial cost of harmful alcohol use alone was estimated at R37.9 billion, or 1.6% of the 2009 GDP (Matzopoulos, Truen, Bowman, & Corrigan, 2014; Statistics South Africa, 2010).

Over the years, alcohol consumption has increased and has remained more dominant in males than in females (WHO, 2014a). The WHO gives South Africa a score of 4 out of 5 (i.e. drinking 5 or more beers or glasses of wine at one sitting for men, and more than 3 drinks for women) which shows a very risky pattern of drinking alcohol (GISAH, 2018). On a least risky to most risky patterns-of-drinking scale, the higher the score, the greater the alcohol-attributable burden of disease for the country (Seggie, 2012). There is greater harm per litre of alcohol consumed in South Africa than in other regions, where drinking prevalence may be more widespread but where harmful use is rare. Consequently, South Africa experiences alcohol-related costs and externalities above global averages (van Walbeek & Blecher, 2014).

**Table 1: Consumption of pure alcohol by type in South Africa, 2010 (Population aged 15+)**

Per capita consumption of pure alcohol (in litres)	South Africa
Male	18.4
Female	4.2
Average	11.0
Type of alcoholic beverage consumption as a percentage to the total alcohol consumption	
Beer	48%
Wine	18%
Spirits	17%
Other	17%

Source: WHO, *Global status report on alcohol and health 2014* (WHO, 2014b); WHO, *NCDs Country Profile 2014* (WHO, 2014d)

Social determinants of health (SDOH) have an impact on different aspects of alcohol misuse, HIV infection and access to health services (Schneider, Temmerman, & Parry, 2015). The social determinants of health are mostly responsible for health inequities - the unfair and avoidable differences in health status seen within and between countries (WHO, 2018b). Differences in health are striking in communities with poor SDOH such as unstable housing, low income, unsafe neighbourhoods, or substandard education (CDC, 2018b). At the global level, SDGs provide a comprehensive blueprint for human development and for systematically addressing the social determinants of health (WHO, 2018j).

Researchers show that health inequalities are determined by a range of social factors such as; race, education, ethnicity, gender, geographical location and income, amongst others, and these factors reflect on and affect other components of a health system, resulting in poor health outcomes, mortalities and financial losses (Obuake, 2015; WHO, 2007a). Despite concepts based on the WHO - like the Universal Health Coverage that states that all people and communities can use promotive, preventive, curative, rehabilitative and palliative health services - these need to be of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship (WHO, 2018p). While access to essential medicines is promoted as part of the right to health (WHO, 2018c) and South Africa's future National Health Insurance was approved by the cabinet in 2017 (Department of Health, SA, 2018), a lack of financial resources creates barriers to access to health. In developing countries such as South Africa, the poor cannot afford to purchase health care (World Bank, 2014) and therefore out-of-pocket expenses for health care deter poorer people from using services leading to untreated morbidity or pushes them into catastrophic poverty where the little money they have is spent on health related expenses (WHO, 2018h).

Health inequalities are more prevalent in Low and Middle-Income Countries (LMICs) where life expectancy varies between 36 to 57 years, compared to 80 years in high income countries. In South Africa, life expectancy has increased dramatically over the last decade, from 52.2 years nearly 10 years ago to 62 years currently. This has been mainly due to the HIV interventions implemented in 2005 (Mafika, 2012; World Bank, 2018b). According to the International Monetary Fund (IMF) and the World Bank, South Africa is one of the most unequal countries in the world where inequalities exist in socio-economic status (Green, 2017; World Bank, 2018b). Studies on the burden of ill-health in South Africa have shown consistently that, relative to the wealthy, the poor suffer more from more diseases and violence (Harling, 2007; MRC, 2001; Myer, Stein, Grimsrud, Seedat, & Williams, 2008).

Despite certain areas of progress in the country since 1994, according to Statistics South Africa, the Gini coefficient increased from 0.6 in 1995 and reached 0.65 in 2014 (World Bank, 2017b). This stark separation also manifests itself in indicators such as the unemployment rate and other social determinants of health leading to alcohol misuse. The official unemployment rate currently stands at 25.6%; however, the Economist (2013) believes that the unemployment rate for young blacks could be above 55% (Harmse, 2013; The Economist, 2013). According to the World Bank, income- or consumption-based studies find that the poorest 20% of the South African population consume less than 3% of total expenditure, while the wealthiest 20% consume 65%, showing the unequal distribution of household or individual income across the various participants in the economy (Vanderbilt University, 2013). Continuation of free-market policies, inadequate economic growth, rapid urbanisation, migration and corruption have caused disparities to widen (Dollery, 2003).

Despite the facts that the South African government invested approximately R150 billion on healthcare in 2017 which was meant to support 33% of the population, 21.5% of South Africans remain severely impoverished (Business Tech, 2014; Fleischer, Kevany, & Benatar, 2010; Rossouw, 2017; UNDP, 2018). New estimates of poverty show that the proportion of people living in poverty in South Africa has not changed significantly between 2005 and 2014, with the Poverty Headcount ratio at national poverty lines (% of population) decreasing from 66.6% to 55.5% (World Bank, 2017a). Higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health (WHO, 2018e).

In 2015, South Africa spent US\$23 billion on health, which represented about 8.6% of GDP. South Africa has laid out a strategic programme to achieve universal health coverage through “the 10-point plan”. Its focus is on improving infrastructure, human resources for health, and procurement. Compared to the average of upper middle-income countries (UMICs), South Africa’s government allocates more resources to health as a share of total government expenditure (Health Policy Project, 2016). Among BRICS countries, South Africa spends the most part of its GDP on public healthcare with Brazil, Russia, India and China spending 8.3%, 7.1%, 4.7% and 5.5% respectively (World Bank, 2018a). Among the comparable BRICS nations, India spends the least on public healthcare, with total health spending accounting for only 4.7% of GDP provided to public sector healthcare in India in 2014, resulting in the majority of the population using private sector options leading to out-of-pocket costs. In 2012, out-of-pocket expenses accounted for 60% of health spending in India (OECD, 2014; World Bank, 2018a).

In South Africa a 'gap' in health professionals exists with 80% of available health care professionals being nurses, while there are only 12% doctors, 5% pharmacists and 3% oral health professionals (Department of Health, SA, 2011a, 2011b). There are 28 doctors, 293 nurses and 8 pharmacists per 10 000 population (Department of Health, SA, 2011a; Essack, 2013). According to the World Health Assembly, governments must ensure that there is an increase in the supply of adequately trained health service providers to meet the growing burden of alcohol abuse and in turn NCDs (WHO, 2004). Thousands of Africa's professionals and students are leaving the continent for better prospects in Europe, USA or Australia. According to statistics, this costs 9 sub Saharan countries more than 2 billion dollars per year (WHO Global Forum: Addressing the Challenge of, Non-communicable Diseases, & Concurrent Session 3 Health Sector, 2011; Xinhua, 2016).

One of the major constraints to tackling the global burden of NCDs and access to essential health care services is a serious shortage of health workers. At least 57 countries have a crisis shortage of health workers; 36 of those are in Africa (WHO, 2008a). The shortage of well-trained health workers is global but LMICs, where there is a double burden of diseases, both NCDs and communicable diseases experience the crisis more intensely (WHO, 2007c). The reasons for the health workforce shortage include poor pay and working conditions, lack of training and migration (WHO, 2006a). In response to these challenges, the WHO conducted the *First Global Conference on Task Shifting* in 8-10 January 2008 identifying that this is one way the public health community and national governments can address this issue head-on. According to the WHO, task shifting presents a viable solution for improving health care coverage by making more efficient use of the human resources already available and by quickly increasing capacity, while training and retention programmes are expanded (WHO, 2008b).

With the increase in NCDs, combined with health inequality in the country and health care worker shortages, there is need to provide workplace health promotion on the harmful use of alcohol, which is also one of the risk factors contributing to NCDs. The WHO advocated increased community participation and the systematic delegation of tasks to less-specialized cadres. Task shifting has resulted in community participation in health promotion initiatives on NCDs (Lehmann, Van Damme, Barten, & Sanders, 2009; WHO, 2006b). The WHO has also identified universities as key players in research-oriented initiatives involving NCDs. It has therefore become a priority for universities to focus research activities on person-centred primary health care systems, by allocating resources to plan and implement health promotion interventions that focus on prevention of NCDs and the promotion of self-care (WHO, 1995).

## 1.2 Rationale of the research

In South Africa, the probability of dying between ages 30 and 70 years from the 4 main NCDs is 27%. The NCD epidemic in SA is an even greater burden because it is occurring concurrently with the HIV/AIDS epidemic alongside a high burden of TB and high levels of violence and injuries. There are high levels of maternal and child mortality, mostly due to HIV/AIDS-related diseases. These are a major cause of death in young children, followed by pneumonia and acute diarrhea (Norman, Matzopoulos, Groenewald, & Bradshaw, 2007; UNICEF South Africa, 2018). Injuries such as motor vehicle crashes, falls, drownings, burns and risky sexual behaviours, including unprotected sex or sex with multiple partners resulting in unintended pregnancy or sexually transmitted diseases, including HIV and development of chronic diseases are all

aggravated by the high consumption of alcohol in South Africa (CDC, 2018a). With the quadruple burden faced by South Africa and the public sector being under resourced and under staffed, it is a struggle to provide optimum care for all despite spending 8.8% of the GDP on health (Yerramilli P, 2015).

The impact of globalization and urbanization in South Africa has accelerated the growing burden of NCDs (Islam et al., 2014). NCDs have potentially serious socioeconomic consequences, through increasing individual and household impoverishment and hindering social and economic development (WHO, 2017d). Promotion of health and prevention of disease have become some of the most emphasised issues. Health promotion and disease prevention programmes focus on keeping people healthy. Health promotion engages and empowers individuals and communities to engage in healthy behaviours, and make changes that reduce the risk of developing chronic diseases and other morbidities (RHIhub, 2018). Health communication strategies have been used to improve population health outcomes and health care quality, and to achieve health equity (Healthy People, 2014).

Globally, there has been a rapid increase in health information available to the public, particularly via the internet. Literacy and access to the internet, however, may be barriers, and the information may not be culturally appropriate to the reader (Tonsaker, Bartlett, & Trpkov, 2014; U.S Department of Health and Human Services, 2015). In the South African context, English is spoken as a first language by only 9.5% of the population (Statistics South Africa, 2012), but as 83% of the population relies on public sector health facilities (Honda & McIntyre, 2016; Statistics South Africa, 2014a), English health material is rendered inappropriate for use by the majority of the population. With the quadruple burden of diseases faced by South Africa, the public sector is under-resourced and under-staffed, and struggles to provide optimum care to all, despite spending 8.8% of the Gross Domestic Product (GDP) on health (PMG, 2016). A reduction in the incidence of preventable NCDs could therefore be a way to help alleviate this strain on government and on public sector health care facilities (WHO, 2014a).

Alcohol is the most widespread risk factor globally, it is the third-largest contributor to death and disability after unsafe sex/sexually transmitted infections and interpersonal violence, both of which are sometimes influenced by alcohol consumption (Norman R, Bradshaw D et al. 2007). Problems relating to alcohol is that they may arise as a consequence of personal, family or social factors, or from certain work situations, or from a combination of these elements. Such problems not only have an adverse effect on the health and well-being of employees but may also cause many work-related problems including a deterioration in job performance (WHO Europe, 2012; International Labour Office Geneva, 1996). Alcohol, and in particular heavy drinking, increases the risk of unemployment and absenteeism for those in work (Matzopoulos RG, Truen S et al, 2012). Alcohol, especially episodic heavy drinking, has also been found to increase the risk of arriving late at work and leaving early which can result in disciplinary suspension. Harmful use of alcohol has also been associated with a higher turnover of employees due to low productivity from the use of alcohol; poor co-worker relations; low employee morale and premature death (WHO EURO, 2012).

This study conducted a workplace health promotion on alcohol targeted at Rhodes University support staff, since the majority of them are dependent on public sector health facilities, and any prevention and health promotion activities, when carried out in the public sector, would be of great assistance to them. The

workplace provides several opportunities for implementing prevention strategies to improve understanding on the harm done by alcohol, since the majority of adults spend a significant proportion of their time at work (WHO EURO, 2012). The information materials and activities developed collaboratively with the support staff and key stakeholders, in response to contributions from the support staff and key stakeholders at Rhodes University may increase knowledge on how to improve workplace health promotion initiatives and could inform future research on ways to design appropriate intervention materials. The Rhodes University Health Care Centre (HCC), staffed by nurses, provides primary health care for students as well as staff members. In order to create a collaborative workplace health promotion, utilizing the services and the support of the HCC from the inception of this project will lead towards better and sustainable inputs in the future.

### 1.3 Research questions

These research questions establish the aim and objectives which will further guide this project:

- What are the current and previous health promotion policies and interventions at Rhodes University particularly relating to NCDs and harmful use of alcohol?
- What are the facilitating and limiting factors to these past health promotion interventions?
- How were the past initiatives received by the Rhodes University support staff?
- What are some of the factors contributing to harmful use of alcohol by the support staff?
- What possible interventions could be used in initiating a workplace health promotion programme (WHPP) at Rhodes University?
- Was the final health education material based on feedback from peer educators and the support staff suitable and readable for the target population?
- Was information based on harmful use of alcohol gained during the participatory workshops to benefit the peer educators?

### 1.4 Study aim and objectives

#### 1.4.1 Aim

This Community-Based Participatory Research (CBPR) with volunteering Rhodes University peer educators aimed to initiate a culturally-sensitive and contextually-appropriate collaborative workplace health promotion intervention on harmful alcohol use at Rhodes University for the support staff.

#### 1.4.2 Objectives

The objectives are divided into 4 phases:



**Exploratory phase**

- To conduct a literature review to identify health promotion policies and protocols developed for the responsible use of alcohol in South Africa and successful examples from other countries;
- To identify the current personal, social and environmental factors that influence the use of alcohol by support staff at Rhodes University;
- To identify the existing policies, protocols and events on health promotion at Rhodes University for support staff.

**Educational health promotion phase**

- To collaboratively design and test culturally sensitive and appropriate health information pamphlets with the peer educators, Rhodes University support staff, colleagues and HCC nurses;
- To collaboratively design and test a health promotion manual with the Rhodes University peer educators.

**Implementation phase**

- To conduct educational workshops with peer educators for implementation of educational health promotion interventions on alcohol use by using designed and tested pamphlets and manuals by the researchers along with the team supporting the project in collaboration with the peer educators.

**Evaluation Phase**

- To evaluate this health promotion programme, using feedback from the Rhodes University peer educators.

## 2 LITERATURE REVIEW

### 2.1 Introduction

The purpose of this chapter is to discuss relevant literature pertaining to NCDs and the resultant cost of morbidity, as well as to describe the global and national efforts to address their burden. This chapter also discusses the importance of health promotion, particularly workplace health promotion (WHP) and the role of culture and other factors in health promotion.

#### 2.1.1 Global burden of non-communicable diseases

NCDs are the leading causes of death globally and are among the top public health challenges of the 21st century, accounting for 35 million deaths or 60% of all deaths worldwide (WHO, 2017c, 2018g). The NCDs four modifiable risk factors, are also typically initiated or established during adolescence or young adulthood and tend to set the stage for NCDs later in life (UNDP, 2013; WHO, 2011c). Currently, there are 1.8 billion youth (those 25 and under) worldwide, and it is estimated that 13% of them will die each year from an NCD before reaching their 20<sup>th</sup> birthday (Muradali, 2016; UNFPA, 2015). Exposures to NCD risk behaviours can be traced to inequities in the conditions of daily life and further traced to underlying social, economic, political, environmental (including urbanization) and cultural factors, broadly known as social determinants (UNDP, 2013).

#### 2.1.2 NCDs in LMICs

NCDs are unevenly distributed among and within countries, with premature deaths due to NCDs occurring at the highest rates in LMICs (WHO, 2011c, 2017g). These countries have lower capacities to respond to NCDs, and they simultaneously contend with ongoing communicable disease burdens. Within countries, various forms of disadvantages tend to be associated with NCDs, owing partly to greater exposure to the four main behavioural risk factors for NCDs (UNDP, 2013). In all North African countries except Sudan, NCDs are already responsible for at least three-quarters of all deaths. Based on current trends, the WHO projects that NCDs will become the leading cause of deaths in sub-Saharan Africa by 2030, surpassing AIDS and other conditions that predominate today (Kaneda & Naik, 2015). Given South Africa's quadruple burden of disease, the overarching goal that underlies each strategy is the cost-effective strengthening of health systems (further discussed in section 2.2.2). As treatment and control of HIV/AIDS improved, South Africa has seen a shift in the categorization of this disease from acute to chronic (MRC, 2001; Norman et al., 2007; PMG, 2016).

#### 2.1.3 Costs of non-communicable diseases

NCDs result in high health care costs for the government and at the individual level mainly for the lower social group, lost productivity mainly for the employer, and catastrophic expenses mainly for the patients and their families due to high health care costs (WHO, 2005). The social and economic impacts of NCDs are significant. NCDs reduce global and national economic output, strain health systems, burden vulnerable households, put human rights at risk and hamper progress on attaining Development Goals (UNDP, 2013).

Poverty exposes people to behavioural risk factors for NCDs and, in turn, the resulting NCDs may become an important driver of the downward spiral that leads families towards poverty. As a result, unless the NCD epidemic is aggressively confronted in the most heavily affected countries and communities, the

mounting impact of NCDs will continue and the global goal of reducing poverty will be undermined (WHO, 2011c). Concrete and sustained action is essential to prevent exposure to NCD risk factors, address social determinants of disease and strengthen health systems so that they provide appropriate and timely treatment and care for those with established diseases (WHO, 2011c). A major reduction in the burden of NCDs will come from population-wide interventions, which are cost effective and approaches such as tax increases which are also revenue-generating for the governments (Bird, 2015; WHO, 2011c).

## 2.2 Strategies to help address the NCD burden

An important way to reduce NCDs is to introduce and initiate goal-focused programmes and action plans to lessen the risk factors associated with these diseases. Preventing and postponing NCDs is appreciably more effective and considerably less costly than treating those who fall ill (Cecchini et al., 2010). Reducing the major risk factors for NCDs is the focus of WHO's work to prevent deaths from NCDs. Prevention of NCDs is a growing issue: the burden of NCDs falls mainly on developing countries, where 82% of premature deaths from these diseases occur. Tackling the risk factors will therefore not only save lives; it will also provide a huge boost for the economic development of countries (WHO, 2018i).

One such action plan is WHO's Global Action Plan for Prevention and Control of NCDs, which aims to achieve a 25% decrease in premature mortality (under the age of 60) due to NCDs and their risk factors by 2025 (WHO, 2013a). In line with this plan, South Africa aims to reduce its relative premature mortality rate by 25% by 2020 (Department of Health South Africa, 2013). Another such initiative is the Sustainable Development Goals (SDGs), which also attempt to lower the incidence of NCDs (UNDP, 2015).

### 2.2.1 The Global Strategy for the Prevention and Control of Non-communicable Diseases

The global burden of NCDs has to be reduced for sustainable development to progress. WHO, together with the General Assembly, has found it necessary to establish policies and plans of action to tackle the control and prevention of NCDs (United Nations, 2011). In 2013, to speed up national efforts to address NCDs, the World Health Assembly adopted a comprehensive global monitoring framework, the *Global Action Plan for Prevention and Control of NCDs*, with 25 indicators and nine voluntary global targets to be achieved by 2025 (25 by 25 targets). The objective of this action plan is to reduce the preventable and avoidable burden of morbidity, mortality, and disability due to NCDs by means of multi-sectoral collaboration and cooperation at local, national, regional, and global levels (WHO, 2013c).

An important milestone was achieved in September 2011 when the United Nations General Assembly convened the High-level Meeting on the Prevention and Control of Non-communicable Diseases, marking only the second time the General Assembly met to act on a public health issue. The first one addressed the HIV/AIDS pandemic in 2000 (UN, 2012). The United Nations Political Declaration 2011 highlights the key recommendations for reducing NCDs, which are all aligned to the *WHO Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases*. These include:-

- Implement a multi-sectoral response to NCDs
- Reduce risk factors and create health-promoting environments

- Work with the private sector in addressing NCDs
- Strengthen national policies and health systems
- Increase international cooperation, including collaborative partnerships
- Increase research and development
- Strengthen monitoring and evaluation (HSRC, 2013)

The objective of this action plan is to reduce the preventable and avoidable burden of morbidity, mortality, and disability due to NCDs, by means of multi-sectoral collaboration and cooperation at local, national, regional, and global levels (WHO, 2013c).

### 2.2.2 Health systems strengthening

In 2007 the World Health Organization (WHO) proposed a framework describing health systems in terms of six core components or “building blocks”: (i) service delivery; (ii) health workforce; (iii) health information systems; (iv) access to essential medicines; (v) financing; and (vi) leadership/governance. Table 2 below shows how the current project had direct and indirect impacts on these building blocks. Strengthening health systems is key to achieve the 9 Global health targets by 2025 (WHO, 2015b). The subsequent WHO monitoring framework recognized that “sound and reliable information is the foundation of decision-making across all health system building blocks” (WHO, 2007b; WPRO, 2018).

**Table 2: Application of health systems strengthening building blocks in current research**

<b>Building blocks of health systems strengthening</b>	<b>Application in current research</b>
Service delivery	Initiating the health promotion project at Rhodes University and the peer educators being trained to reach the 1500 support staff on NCD issues and raising awareness.
Health workforce	Task shifting has resulted in peer educators being part of health promotion on campus and in their communities.
Health information systems	Integration of HCC
Access to essential medicines	N/A
Financing	Indirect impact if, over the years, we can prevent or slow down development of NCDs of the support staff, which is a major financial benefit for both the university and support staff.
Leadership/governance	By training peer educators, influencing leadership and governance among themselves for better health conditions.

Source: *Health systems strengthening (WHO, 2007b)*

### 2.2.2.1 Strengthening health information systems

Looking at such high mortality due to NCDs, much needs to be done to strengthen screening, early diagnosis, timely and appropriate treatment and follow-up procedures and services for chronic NCDs. It is important to have a proper data management, analysis and reporting mechanism for NCDs and their risk factors, which would aid the countries to guide policy development and evaluation of the impact of prevention programmes (Bachani, 2018). The WHO has also underlined the need for countries to strengthen national capacity to manage and analyse the data, and to interpret and utilise survey results in a standardised way. According to the WHO, a well-functioning information system is important for achieving universal health coverage, and the health-related Sustainable Development Goals (SDGs) (WHO, 2017e). Figure 1 below outlines the main attributes of a well-functioning health information system.

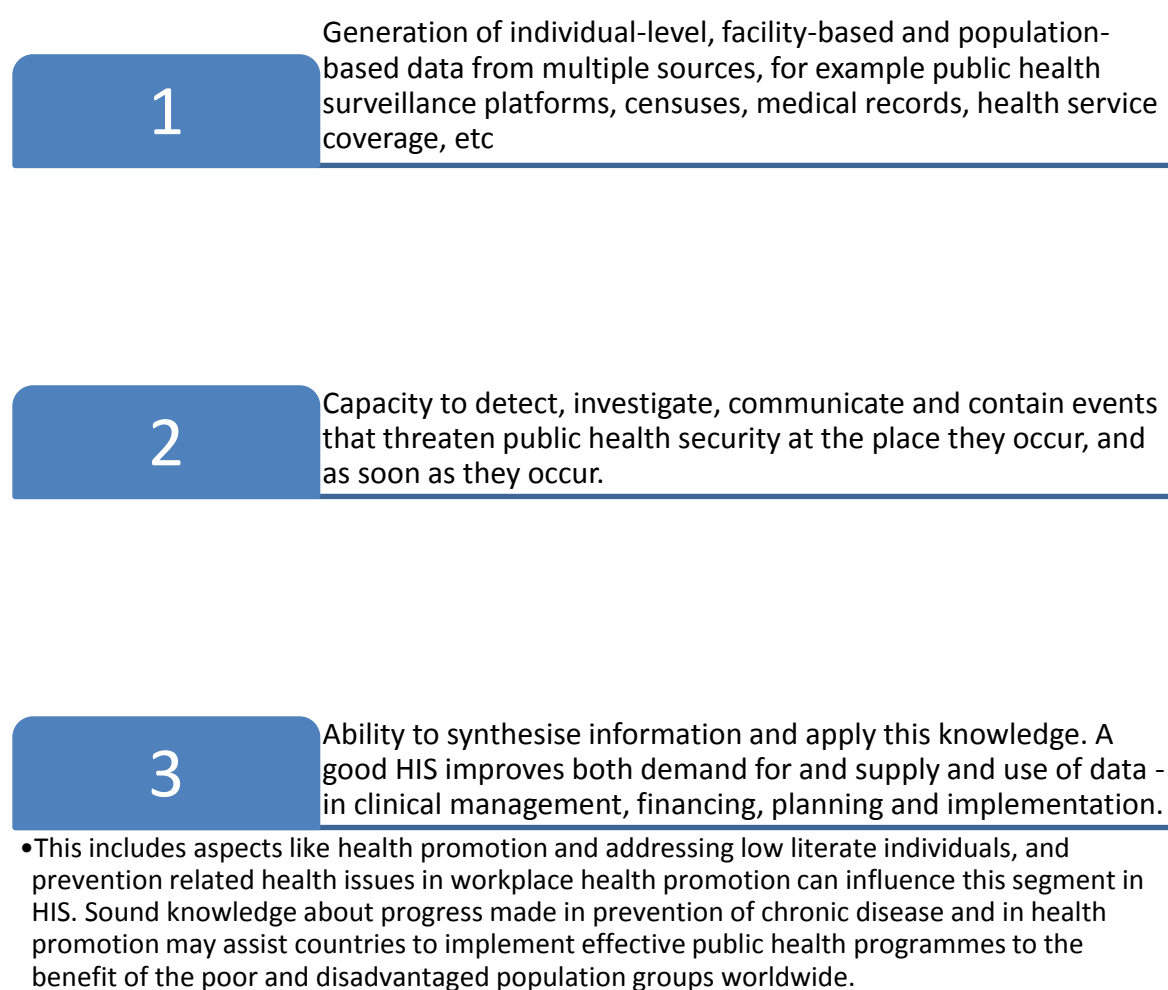


Figure 1: The main attributes of a well-functioning health information system

Source: *Strengthening health information systems* (WHO, 2017h), *Oral health information systems – towards measuring progress in oral health promotion and disease prevention* (P. E. Petersen, Bourgeois, Bratthall, & Ogawa, 2005)

### 2.2.3 Best buys

While many interventions may be cost effective, some are considered 'best buys' – actions that should be undertaken immediately to produce accelerated results in terms of lives saved, diseases prevented, and heavy costs avoided.

WHO has identified these 'best buys' based on evidence from several countries (Bird, 2015).

Best buys based on the Global Action Plan for the Prevention and Control of NCDs 2013–2020 (WHO, 2017a) include:

- Protecting people from tobacco smoke and banning smoking in public places;
- Warning about the dangers of tobacco use;
- Enforcing bans on tobacco advertising, promotion and sponsorship;
- Raising taxes on alcohol and tobacco;
- Restricting access to retailed alcohol;
- Enforcing bans on alcohol advertising;
- Reduce salt intake and salt content of food;
- Replacing trans-fat in food with polyunsaturated fat;
- Promoting public awareness about diet and physical activity, including through mass media (WHO, 2011c)

According to the WHO (WHO, 2017a) realizing these benefits will require firm commitments of resources and capabilities, not only by governments but also by civil society, development agencies, the private sector and academia. Governments and international organizations can provide leadership, establish necessary frameworks, create infrastructure and create health policies. Academia can contribute scientific insights and expertise. NGOs and civil society can raise the profile of NCDs and support implementation and action on the ground. The private sector can leverage core business skills, networks and funds to access target populations and offer innovative products and solutions. Collaboration among these partners will allow societies to capitalize on individual strengths and realize benefits beyond the reach of any single entity to ensure that communities have the necessary resources to manage the growing burden of NCDs (WHO, 2011a).

### 2.2.4 *The global strategy to reduce the harmful use of alcohol*

*The global strategy to reduce the harmful use of alcohol* was supported by the World Health Assembly in May 2010, identifying that the harmful use of alcohol and poor socioeconomic development are closely related. The purpose of the global strategy is to support and complement public health policies in member states (WHO, 2010). This global health strategy aims to improve health and social outcomes, significantly

reducing morbidity and mortality resulting from the harmful use of alcohol, and curtailing their resulting social consequences (WHO, 2010, 2011e).

*The global health strategy to reduce the harmful use of alcohol* (WHO, 2010) contains a set of guides to strengthen national responses to alcohol-related public health problems. A Global Alcohol Policy Conference, *From The global alcohol strategy to national and local action*, held in Thailand in February 2012, was co-hosted by the WHO. This allowed information exchange, the sharing of experiences, partnerships to be built to raise awareness of public health problems due to alcohol and enabled the advocating and implementation of the global strategy at all levels. WHO was also involved in a follow-up Global Alcohol Policy Conference in 2013, in the Republic of Korea, focusing on alcohol, civil society and public health: from local and national action to global change (WHO, 2014b).

*The global strategy to reduce the harmful use of alcohol* encourages the introduction of *Health in all Policies* (discussed further in section 2.2.4) where health ministries are recommended to bring together other ministries and stakeholders for effective policy design and implementation, and led to the development of ten recommended target areas, which are: leadership, awareness and commitment; health services' response; community action; drink-driving policies and countermeasures; availability of alcohol; marketing of alcoholic beverages; pricing policies; reducing the negative consequences of drinking and alcohol intoxication; reducing the public health impact of illicit alcohol and informally produced alcohol; and monitoring and surveillance (WHO, 2010, 2014b). The Secretariat will provide information on the global burden of alcohol-related harm; make evidence-based recommendations; and support action to prevent and reduce the harmful use of alcohol. The Secretariat will work together with other intergovernmental organizations and other international bodies, representing key stakeholders, to ensure that appropriate priority and resources are given (WHO, 2010).

### **2.2.5 Global and national health targets**

The WHO has set health targets that aim to reduce the burden of NCDs. The primary goal was to encourage all member states to adopt an official NCD action plan in response to the epidemic increase of NCD prevalence in LMICs. *WHO global monitoring framework on NCDs* tracks implementation of the *NCD Global Action Plan* through monitoring and reporting on the attainment of the 9 global targets for NCDs, by 2025, against a baseline in 2010 (WHO, 2018f, 2018a). The 9 voluntary global targets of the framework provide overall direction and the action plan provides a road map for reaching the targets in countries (WHO, 2018i).

The United Nations Sustainable Development Goals (SDGs) are 17 goals with 169 targets that all 191 UN Member States have agreed to try to achieve by the year 2030. Health has a central place in SDG 3: Ensure healthy lives and promoting well-being for all at all ages, underpinned by 13 targets (WHO, 2016b, 2018k). The 2030 targets were set by extending the 25 by 25 targets of the above mentioned Global Action Plan for Prevention and Control of NCDs (WHO, 2013d). The SDGs also build on the successes of the Millennium Development Goals (MDGs) and aim to go further. The MDGs focused primarily on the reduction of poverty, hunger, and infectious diseases, but the SDGs, among other health targets, aim to reduce premature deaths from NCDs by one third by 2030 in SDG 3.4 (UNDP, 2015). NCDs are also indirectly related to SDG 3.5, which aims to strengthen the prevention and treatment of substance abuse;

SDG 3.8 aims at universal health coverage; and SDG 3.9 targets a substantial reduction in the number of deaths and illnesses from pollution and contamination by 2030.

The South African health targets commit the Government to improving long-term health outcomes by adopting a set of 10 health targets to be reduced by 2020 (Department of Health, SA, 2014a). These targets will help reduce NCDs in South Africa by prioritising, among other things, nutrition, physical activity, and combating smoking and alcohol abuse (Department of Health, SA, 2016).

The table below contrasts the similarities and differences between the 9 global voluntary targets set by WHO, the SDG 3 health targets and the South African 2020 targets.



**Table 3: Table Comparison of WHO nine voluntary targets for 2025, SDG 3 and the South African 2020 target**

	<b>WHO nine global voluntary targets 2025</b>	<b>SDGs</b>	<b>South African 2020 targets</b>
<b>1</b>	To decrease premature mortality from NCDs by 25%	By 2030, reduce by one third premature mortality from NCDs through prevention and treatment and promote mental health and well-being.	Reduce by at least 25% the relative premature mortality (under 60 years of age) from NCDs
<b>2</b>	To reduce salt intake by 30%		Reduce mean population intake of salt to < 5g/day
<b>3</b>	To decrease physical inactivity by 10%		Increase the prevalence of physical activity (defined as 150 minutes of moderate-intensity physical activity per week, or equivalent) by 10%
<b>4</b>	To reduce raised blood pressure by 25%		Reduce the prevalence of people with raised blood pressure by 20% by 2020 (through lifestyle and medication)
<b>5</b>	To reduce the harmful use of alcohol by 10%	Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.	Reduce by 20% the per capita consumption of alcohol
<b>6</b>	To have a 0% increase in diabetes and or obesity		Reduce by 10% the percentage of people who are obese and/or overweight by 2020

- |          |   |  |   |
|----------|---|--|---|
| <b>7</b> | To have a 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years                     | Strengthen the implementation of the WHO Framework Convention on Tobacco Control in all countries, as appropriate.   | The reduction of tobacco use by 20%   |
| <b>8</b> | To have 50% of eligible people receive drug therapy and counselling to prevent heart attacks and strokes            |  | Increase the percentage of people controlled for hypertension, diabetes and asthma by 30% by 2020 in sentinel sites |
| <b>9</b> | To have 80% availability of essential medicines and affordable basic technologies for the treatment of NCDs for all | Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. |   |
|          |   | By 2020, halve the number of global deaths and injuries from road traffic accidents.   |   |

Source: Goal 3 - Sustainable Development Knowledge Platform (United Nations, 2015); Sustainable Development Goal 3: Health (WHO, 2016f)

### 2.2.6 Recent efforts by the WHO to address the NCD burden

Efforts by the WHO to address the NCD burden continues as the WHO global conference on NCDs took place from 18 to 20 October 2017 in Montevideo. Heads of State and Government and ministers from around the world committed to new and bold action to reduce suffering and death from NCDs, accelerating momentum in the fight against NCDs ahead of the UN High-level Meeting on NCDs in 2018 (WHO, 2017j, 2018n). Governments endorsed the Montevideo Roadmap 2018-2030 on NCDs as a Sustainable Development Priority at the opening of the three-day Global Conference on NCDs, highlighting the need for coordinated and coherent action from all sectors and the whole of society, as many of the main drivers of ill health lie outside the control of health ministries, systems and professionals (WHO, 2017k).

To help address NCDs, the leaders in health, politics and development have accepted to participate in the first-ever WHO Independent Global High-level Commission on NCDs, which aims to identify and propose bold and practical ways to curb the world's leading causes of death and illness (WHO, 2017f). The composition of the commission will be announced by mid-February 2018, following a 2-week period during which the public has opportunity to provide information on any content of interest related to its proposed members.

## **2.3 Strategies to help address the burden of NCDs in South Africa**

According to the Department of Health, SA (2012) one of the central priorities of the South African government is “A long and healthy life for all”. To achieve this objective clear strategies and plans are needed to address each of the four areas that constitute South Africa’s quadruple burden of diseases - that is, a maturing and generalised HIV and AIDS epidemic; high levels of tuberculosis; high maternal and child mortality; violence and injuries and NCDs. Reducing mortality from NCDs is critical to increasing life expectancy (HSRC, 2013; Norman et al., 2007). The Strategic Plan (2013-17) flows directly from targets set at the South African Summit on the Prevention and Control of non-communicable diseases held in September 2011. This summit, attended by major stakeholders, government departments, non-governmental organisations, academics and other experts in NCDs, concluded with the unanimous adoption of the South African Declaration On The Prevention And Control Of Non-Communicable Diseases, and within this, ten clear targets to be reached by the year 2020 (HSRC, 2013).

South Africa’s political commitment is evidenced by its support of the Brazzaville Declaration on NCD Prevention and Control in the WHO African Region (2011) and the UN Political Declaration on NCDs (2011). The government’s words are backed by legislative action, including anti-tobacco regulations, which resulted in a 22% reduction in smoking behaviours between 1995-2009; legislation to reduce trans fatty acids and salt in processed food; and bans on junk food advertisements to children and regulation of foods sold during school hours (Yerramilli, 2015). More than 30 years of lessons from the AIDS response is a powerful reminder that the health sector cannot address complex health challenges on its own (UNDP, 2013). Effective prevention necessitates a broad multi-sectoral approach involving different government departments, civil society organisations, the private sector, media as well as commitment to health and wellness from individuals themselves (HSRC, 2013).

### **2.3.1 Integrating policies in communities**

Community empowerment refers to a community in which individuals and organizations collaborate, sharing skills and resources to meet their respective needs and supporting people in making healthy choices. The concept can be used to guide Health in All Policies. Community participation improves the implementation of Health in All Policies and makes it feasible for interventions to change behaviours within families and households (APHA, 2013; B. Israel, Checkoway, Schulz, & Zimmerman, 1994). Member States of the African Region have committed to encouraging community participation and empowerment in the development of good governance measures for health. Such degrees of community participation from the inception of policies and programmes, especially for those who are marginalised, are critical to effecting changes in health equity (Wallerstein, 2002; WHO, 2013e).

### **2.3.2 Health in all policies**

Actions to address complex, multi-faceted problems such as preventable chronic disease and health care expenditure require joined-up policy responses (SA Health, 2012). The health of the people is not only a health sector responsibility; it also embraces wider political issues such as trade and foreign policy. Tackling this requires political will to engage the whole of government in health (Ollila et al., 2006; WHO, 2013f). Key sectors such as Agriculture, Trade and Industry, Social Development, Sport and Recreation, Basic and

Higher Education, Transport and Science and Technology and others can recognise their role in working towards a healthy population. There are also important roles for non-governmental organisations and the private sector in reducing NCDs (HSRC, 2013). Import of liquor from other countries is the major revenue for the country, including taxation to governments from liquor sales (DTI, 2004). In 2010 the South African liquor industry is estimated to have generated gross revenue of R94 billion or 4.4 percent to GDP and generated in excess of R41bn in government revenue (IOL Business Report, 2010). The increase in production and availability of alcoholic beverages to the general population have also been increased but consequences of harmful use of alcohol is causing huge economic and developmental damage to South Africa (Ferreira-Borges, Parry, & Babor, 2017). The country needs trade and foreign policies but bringing in revenue with products linked to substance abuse is damaging.

Health in All Policies (HiAP) is about promoting healthy public policy and is based on the understanding that health is not merely the product of health care activities, but is influenced by a wide range of social, economic, political, cultural and environmental determinants of health (Ministry of Social Affairs and Health, 2006; SA Health, 2012). It improves accountability of policymakers for health impacts at all levels of policy-making (WHO, 2014c). It is also collaboration across sectors and levels of government in support of policies that promote health, equity, and sustainability (WHO, 2014c).

Addressing the global NCD epidemic will require leadership from the health sector. Multisectoral responses that tackle the underlying, overlapping and interacting social determinants of NCDs will be required. WHO's 'Global Action Plan for the Prevention and Control of NCDs 2013–2020', the Global Monitoring Framework on NCDs (GMF) and various other strategies already point the way forward for whole-of-government and whole-of-society response (UNDP, 2013). HiAP is a horizontal, complementary policy-related strategy with a high potential for contributing to population health (Ollila et al., 2006). This includes providing the leadership, mandate, incentives, budgetary commitment and sustainable mechanisms that support government agencies to work collaboratively on integrated solutions (WHO & Government of South Australia, 2010). Multi-sectoral action as a cornerstone of NCD responses has been endorsed at the highest political levels, such as in the 2011 'UN Political Declaration on Non-communicable Diseases' (UNDP, 2013). Although many sectors already contribute to better health, significant gaps still exist (WHO & Government of South Australia, 2010).

The government of South Africa has also aimed to pursue multi-sectoral approaches to NCD control. For example, the Department of Health is developing a National Health Commission housed in the presidency, which will bring together the distinct ministries to improve buy in and support for *Health in all policies*. The Director of Disease, Disability, and Geriatrics within South Africa's Department of Health suggested that the establishment of an NCD unit within the Department of Health was a crucial step toward catalysing multi-sectoral plans, as it may serve as a focal point to advocate for inclusion of aspects of NCD control in all policies – a step that many countries have not yet taken (Yerramilli, 2015). While political commitment appears key in South Africa's ability to address NCDs, it is clear that limited resources continue to hamper progress – not only in improving NCD control, but also improving health outcomes for comorbid conditions and ultimately furthering economic progress (Yerramilli, 2015).

### 2.3.3 Tax and subsidies

Tax and subsidies are an integral part of a combination of measures that can be adapted to each national context. Pricing and taxation policies have evidence of effectiveness in reducing alcohol consumption (Nelson, 2014; Nelson et al., 2013; Wagenaar, Salois, & Komro, 2009). The challenges for national government, however, are multiple: designing an effective taxation strategy to reduce – rather than redirect – consumption of unhealthy foods while subsidizing and promoting healthy choices; overcoming opposition to increased taxation; measuring taxation’s effects on NCD prevalence among many other factors; and paying attention to possible distortions in competition that can lead to challenges under international trade and investment law (O’Neill Institute, 2016).

## 2.4 Alcohol use

One of the modifiable risk factors to NCDs is harmful use of alcohol. Although alcohol constitutes an important source of income and its use is part of social and cultural practices and norms in many countries of the African region, alcohol-related health and social costs cannot be ignored. No other product so widely available for consumer use accounts for so much premature death and disability as alcohol (African Health Observatory, 2013). Alcohol abuse is a major concern and causes socio-economic problems in many developing countries. It places a burden on the social, economic and health wellbeing of irresponsible drinkers as well as on their social support networks (Setlalentoa, Ryke, & Strydom, 2015). The negative consequences of the harmful use of alcohol have substantial cost implications for the government as well (van Walbeek & Blecher, 2014). Per capita sales of alcohol and tobacco are decreasing in high-income countries (HICs), but increasing in low- and middle-income countries (LMICs).

The rate of increase in consumption of “unhealthy commodities” (soft drinks and processed foods that are high in salt, fat, and sugar, as well as tobacco and alcohol) is highest in LMICs, with little or no further growth expected in HICs (Stuckler, McKee, Ebrahim, & Basu, 2012). Due to the historic focus on maternal–child health and infectious diseases in SSA, much less attention has been paid to NCDs. However, as in other LMICs, individuals in SSA suffer from the double burden of infectious diseases and NCDs (Marais & Fourie, 2014). The epidemiological transition from predominantly infectious to the double burden is already well underway in many low- and middle-income countries, as it is in SSA (Dalal et al., 2011).

The pattern of drinking to intoxication is more prevalent in developing countries, indicating higher levels of risk due to drinking (Indian Alcohol Policy Alliance, 2017). However, some epidemiological data, generated mainly in high-income countries, suggest that low-risk patterns of alcohol consumption may have a beneficial effect on selected disease outcomes and in some segments of populations (World Economic Forum & WHO, 2011). Traditionally, in rural areas, home-brewed alcohol served many purposes, but was mainly for domestic consumption (Setlalentoa, Pisa, Thekisho, Ryke, & Loots Du, 2009). Not only was it used as a means of payment and of strengthening friendship, but beer was also associated with manhood and with the strengthening of the body (Posthuma, 1989). Similarly, home brewed alcoholic drinks such as Muratina has played an important role in social and cultural traditions of the Kikuyu community of Kenya (Aziz, 2014). Drinking traditionally was moderated and subjected to certain guidelines by the elders as to when, how much, why and who should drink. These guidelines allowed these regulations to remain

applicable, whereas now there are challenges of low initiation of alcohol use and binge drinking which creates problems ranging from youth unemployment to affecting the Gini coefficient (Feinstein, Sabates, Anderson, Sorhaindo, & Hammond, 2006; Oosthuizen, 2001).

#### **2.4.1 Harmful use of alcohol**

Regular consumption of excessive amounts of alcohol (binge drinking) contributes to the double burden of diseases associated with other health risks, including HIV and other sexually transmitted infections, domestic violence, TB and road transport & accidents (Hogerzeil et al., 2013; Kalichman, Simbayi, Kaufman, Cain, & Jooste, 2007; WHO, 2011c). Alcohol is also one of the main factors contributing to premature deaths and disability and has a major impact on public health. Changing social norms, urbanization, increased availability, high intensity mass marketing and relaxation of overseas trade rules, along with poor levels of awareness of the consequences of harmful use of alcohol, have contributed to increased alcohol use, resulting in epidemiological transitions (Indian Alcohol Policy Alliance, 2017; Room, Rehm, & Parry, 2011). There is considerable evidence suggesting that an increase in alcohol prices reduces consumption and the level of alcohol-related problems (WHO Europe, 2004).

Evidence is limited on the distribution of harmful use of alcohol in low-income countries. What evidence does exist suggests that it is more prevalent among lower socio-economic groups and more prevalent among men than among women. In 2010, alcohol use was the third leading risk factor for overall disease burden among men (7.4 percent) versus the eighth leading risk factor among women (3 percent) (Lim et al., 2012). The WHO has a national action plan that focuses on 10 areas that include: leadership; health services; community action; drunk-driving; alcohol availability, marketing, pricing and informal production; impact mitigation; and monitoring (WHO, 2010).

#### **2.4.2 Health consequences of harmful use of alcohol**

NCDs are a major threat to development in developing countries (Parry, 2005). Alcohol has been linked to cancer, cardiovascular diseases (CVDs), liver diseases and mental disorders. According to the Global Burden of Disease report (GBD) 2010, the burden of disease attributable to alcohol consumption in 2010 was substantial. It accounted for 4.9 million deaths and 5.5% of global Disability-Adjusted Life Years (DALYs) in 2010 (Greenfacts, 2015). Of the NCDs associated with alcohol use, the largest number of DALYs lost are due to alcohol dependence (about 120,000 DALYs per year), followed by cirrhosis of the liver (74,000 DALYs), epilepsy (52,000 DALYs) and hypertension (32,000 DALYs) (van Walbeek & Blecher, 2014).

Chronic alcohol consumption, particularly heavy drinking occasions, can contribute to high blood pressure, abnormal heart rhythms, heart failure, and strokes. Alcohol is associated with various kinds of liver diseases, with fatty liver, alcoholic hepatitis and cirrhosis being the most common. Drinking 30g of absolute alcohol per day is associated with an increase in the chance of dying from liver cirrhosis. Morbidity and mortality increase with the volume consumed per day (Greenfacts, 2015).

Alcohol intake during pregnancy can cause spontaneous abortion, slower foetal growth in the womb, premature birth, low birth weight and foetal alcohol spectrum disorder (Greenfacts, 2015). Previous studies show the typical woman at risk to an alcohol exposed pregnancy as being poorly educated and living in

poverty. Targeting drinking during pregnancy is therefore important to reduce adverse health effects on the developing foetus (Marais & Fourie, 2014).

Alcohol use is a major underlying factor in homicides, violence, road traffic deaths, suicides, and other, unintentional injuries across South Africa (Department of Social Development, 2013). Hazardous drinking was also significantly associated with severe health problems such as head injuries and hospitalizations (Indian Alcohol Policy Alliance, 2017).

### 2.4.3 Social and economic consequences of harmful use of alcohol

Harmful use of alcohol is a pattern of alcohol use that causes damage to health, which can be physical or mental, for example depressive episodes secondary to heavy alcohol intake (WHO, 2016d). The harmful use of alcohol includes several aspects of drinking, such as the volume of alcohol drunk over time; the pattern of drinking (frequency of drinking); the drinking context, if it increases the public health risks; and the quality of the alcoholic beverages (Endal, 2014). Emotional and psychological impacts on families, the high levels of crime and other social ills have left many communities under siege by the scale of alcohol and drug consumption. Harmful drinking leads to negative social consequences for the user, the people around the user, society at large and the government (Institute of Alcohol Studies, 2010; Setlalentoa et al., 2015). People under the influence of alcohol end up in crime, misdemeanours and accidents; for example, alcohol is involved in more than 50% of interpersonal violence cases. Similarly, for transport fatalities, alcohol is associated with 53% of all cases (van Walbeek & Blecher, 2014). The table 4 below shows the extent of harmful consumption of alcohol in South Africa.

**Table 4: Alcohol-attributable harm in South Africa**

Harmful Consumption of Alcohol	South Africa
a. Heavy episodic drinking, past 30 days (%)	
Males	17.5
Females	2.9
Both sexes	9.8
b. Alcohol use disorders, 12 month prevalence (%)	
Males	9.6
Females	1.5
Both sexes	5.4

Source: WHO, *Global Status Report on NCDs, 2014* (WHO, 2014b)



Alcohol consumption can affect the workplace through absenteeism. People with alcohol dependence and drinking problems are on sick leave more frequently than other employees, leading to a significant cost to employees, employers, and social security systems (Greenfacts, 2015). Productivity may decrease with heavy drinking at work. Drinkers have lower performance, problems in personal relationships with other co-workers, and lack self-direction, although drinkers themselves may not feel as though their work performance is being affected. Heavy drinking or alcohol abuse may lead to unemployment, which in turn may lead to increased drinking (McFarlin, Fals-Stewart, Major, & Justice, 2001).

Drinking can affect how a person behaves as a parent and as a partner (Hayes, Sanson, Smart, Australian Institute of Family Studies, & Toumbourou, 2004). Eighty five percent of men who were violent towards their wives were frequent or daily users of alcohol. More than half of abusive incidents were under the influence of alcohol (Institute of Alcohol studies, 2010). The impact of drinking on family life can include substantial mental health problems for other family members, such as anxiety, fear and depression and child maltreatment (Department of Social Development, 2018; Greenfacts, 2015). Use of alcohol increases indebtedness and reduces the ability to pay for food and education, and can leave the family in destitution as household expenditure is diverted to purchasing alcohol. Alcohol abuse leads to separations and divorces and causes emotional hardship for the family. While the emotional trauma cannot be translated into monetary terms, the impact it has on the quality of lives is significant (Endal, 2014).

## **2.5 Policies and interventions in South Africa**

Governments possess the powers and policy levers to reduce and prevent alcohol problems. According to previous research, the following have been identified as important elements of successful policies

### **Important elements of successful policies**

- High level political commitment
- Surveillance, monitoring and evaluation
- Multi-stakeholder support
- Leadership and workforce development
- Integration into national strategies & policies
- Multiple intervention strategies
- Stepwise approach to implementation
- Culturally appropriate
- Implementation at different levels within "local reality"
- Dissemination (Varghese, 2010; Ministry of Social Affairs and Health, 2006; Varghese, 2010a).

Evidence-based strategies that have the potential to reduce the occurrence of heavy drinking episodes and the prevalence of alcohol use disorders affecting NCDs are recommended for implementation. Such strategies are likely to include regulating the availability, pricing and marketing of alcohol. Improvements to the capacity of health services could support such initiatives by screening for risk and conducting brief interventions for hazardous and harmful drinking at primary healthcare and other settings (Marais & Fourie,

2014). While alcohol is an individual-level risk factor, its consequences can be prevented via broader public health interventions, such as those impacting on its availability, affordability and marketing (Parry, 2005). The most effective interventions are taxation, licensing of outlets, limits in number of outlets, times and conditions of beverage sales, minimum age limits, drink driving counter measures (Varghese, 2010b).

Strategies for health promotion and for prevention require both population and individual level interventions (Poznyak, 2005). Community support networks are responsible for implementing policies, programmes and plans to address alcohol abuse. Collaboration between the private sector and the alcohol industry is important to develop and implement such policies (Department of Social Development, 2018). Sustainable policy approaches rely on the involvement of the private sector, including employers and shareholders. Policies that have support from a wide range of partners are more likely to succeed and be acceptable to a larger proportion of the target population, therefore progressively becoming clear that multi-sectorial action is needed to implement and cover the gaps in existing policies (International Center for Alcohol Policies, 2008).

The government of South Africa introduced legislation to deal with its supply and demand, such as the National Drug Master Plan (NDMP) (2013-2017), the Prevention and Treatment of Drug Dependency Act (20 of 1992), as amended, as well as the Prevention of and Treatment for Substance Abuse Act (70 of 2008) (M. Setlalentoa et al., 2015). The Department of Health, Government of South Africa (DOH, SA) has developed a framework for legislation on the control of alcohol. The Department is in charge of reducing alcohol demand and harm caused by alcohol, by making the alcohol related legislation and policy guidelines available as public knowledge. It collaborates with the Departments of Education and Social Development on national awareness campaigns (WHO, 2011b). Therefore continuous evaluation of policies and intervention strategies is critical to ensure that a dynamic situation is given attention, and that the challenges are addressed (Setlalentoa et al., 2015).

The NDMP aims to reduce the socioeconomic and other costs associated with alcohol abuse and to promote the development of a responsible and sustainable liquor industry, and provides public participation in the liquor licensing process. The NDMP sets the roles of various government departments at national and provincial level, and identifies the need for a significant contribution to be made by other stakeholders in the country (Department of Social Development, 2018). For the purpose of the NDMP, the Department of Trade and Industry is responsible for the regulation of the liquor industry, as it enforces the Liquor Act (No. 59 of 2003) through the National Liquor Authority (NLA). The Liquor Act provides the norms, standards, and criteria for cooperative government in the regulation of alcohol in South Africa. The Act also provides for the establishment of the National Liquor Policy Council (NLPC), which consists of the Minister of Trade and Industry, as chairperson, and all MECs responsible for the administration of liquor matters in each province (Department of Social Development, 2018; National Liquor Policy, 2015).

The table below shows a summary of the policies and strategies implemented in South Africa to reduce alcohol consumption.

**Table 5: The policies and strategies implemented to reduce alcohol consumption in South Africa**

Policies, strategies and interventions	South Africa
Written national policy/national action plan	Yes
Excise tax on alcohol	Yes
Minimum legal drinking age	18 years
Licensing of days and hours of sale	Yes
Restrictions on outlet density	No
Licensing of places for sale and consumption	Yes
Minimum sale price	No
National BAC when driving a vehicle (general/young/professional)	0.05/0.05/0.02
State regulations for restrictions on alcohol advertising	No
Prohibition on point of sale advertising	No
Legally required health warning labels on alcohol	Yes
Ban on sales and drinking in public places	Yes
Government monopoly on retail sales	No

Source: WHO alcohol report 2014 (WHO, 2014e)

To further strengthen the alcohol policy and practice in South Africa, various gaps need to be addressed, including intervention-focused demonstration projects and regular audits of treatment services and prevention programmes (Poznyak, 2005). Research recommends that interventions can be developed through legislation and regulation, and could include pricing regulation and taxation, restrictions on the availability of alcohol, direct drink-driving interventions, community mobilization, education and public awareness, interventions in the drinking environment (Endal, 2014; van walbeek & Blecher, 2014). The DOH, SA is following the WHO's *Global Strategy to Reduce the Harmful Use of Alcohol*, while the liquor industry's strategy is to focus on educating consumers about responsible alcohol use (WHO, 2011b, p. 2). Shifting from national and community-based strategy devising approaches to community-specific solutions and community interaction with industry is vital for better implementation and enforcement (Department of Social Development, 2013).

By social responsibility it is meant that organisations can meet its fundamental goals of accomplishing a public endeavour or of increasing shareholders' profits, but at the same time fulfilling other important objectives, namely with regards to the satisfaction of stakeholders' interests (Brandão, Rego, Duarte, & Nunes, 2013). The view of social responsibility means that an organisation should not only accomplish its economic and legal requirements but also dynamically contribute to the social good (Collins, 2010). Many leading stakeholders in health care hold the research-based pharmaceutical companies accountable for the deaths of millions of people living in poverty because such companies retain high prices for life-saving medicines (Dina, 2017). However, the Doha Declaration in 2001 emphasises that the TRIPS Agreement does not and should not prevent WTO member governments from taking measures to protect public health (WHO, 2018m; WTO, 2018). Another aspect is The Access to Medicine Index founded in 2004, which is an independent initiative that ranks the world's 20 largest research-based pharmaceutical companies according to their efforts to improve access to medicine in 107 low- to middle-income countries (WHO, 2016a). The framework is constructed along seven areas of focus called 'Technical Areas', which cover the range of company business activities considered relevant to access to medicine. Within each area, the Index assesses four aspects of company action called 'Strategic Pillars': commitments, transparency, performance and innovation (WHO, 2016a). These aspects could guide approaches adopted by alcohol companies where public health precedes profits.

Corporate social responsibility (CSR) has become an integral element of how the alcohol industry promotes itself (Yoon & Lam, 2013). With renewed public awareness of the serious harm caused by alcohol consumption and the prospect of adverse implications on profits, a growing number of alcohol corporations are competing with each other to adopt CSR strategies in an attempt to portray themselves as good corporate citizens (Yoon & Lam, 2013). The alcohol industry is considered reducing alcohol-related harm and promoting policies but they may lack the necessary expertise or the integrity to develop and implement policies effectively. These interventions may provide a more cost effective means of limiting the harmful impact of alcohol misuse on the economy (Marais & Fourie, 2014).

The 'public health approach' looks at the bigger picture concerning alcohol (e.g. the legal age to drink alcohol is 18 and above), those who drink alcohol (e.g. random breath testing), and the environment (including the accessibility and availability through policy and legislative interventions e.g. times at which alcohol is sold) to reduce alcohol misuse by making the environment less 'pro-alcohol' and thereby reducing the per capita consumption (Endal, 2014; Marais & Fourie, 2014).

### 2.5.1 Advertising

The rationale behind a ban on alcohol advertising is substantiated by credible and consistent evidence in international literature showing that exposure to alcohol through media and other communication channels (particularly for adolescents) is associated with increased probability that adolescents will initiate alcohol use and continue to drink more after initiation (Anderson, de Bruijn, Angus, Gordon, & Hastings, 2009). Evidence that banning alcohol advertising is likely to be an effective intervention is reflected in WHO strategy documents on NCDs and harmful use of alcohol. A ban on all direct or indirect alcohol marketing may help to reduce the number of people initiating alcohol use (Gupta, 2016; World Economic Forum & WHO, 2011).

South Africa's Ministry of Health follows the 'public health approach' and has hence proposed tighter restrictions on alcohol advertising, recently tabling legislation that aims to ban alcohol advertising (PHASA, 2015; van walbeek & Blecher, 2014). In South Africa, alcohol advertisements are subject to the code of the Advertising Standards Authority of South Africa (ASA), a body set up and paid for by the marketing communication industry to ensure that its system of self-regulation works in the public interest (ASASA, 2018).

### **2.5.2 Pricing regulation and taxation**

When taxes increase, they are passed on to consumers as higher prices, which will generally lead to a reduction in alcohol consumption. Raising prices and taxes on alcohol is one of the most effective interventions to reduce alcohol consumption (Gupta, 2016; World Economic Forum & WHO, 2011). Increasing excise taxes on alcohol should be to correct the extraneous costs of alcohol consumption, and to fund programmes that aim to reduce the burden of alcohol misuse (van walbeek & Blecher, 2014). Increases in alcohol taxes have been associated with reductions in motor vehicle fatalities, crime, cirrhosis, industrial injuries and premature school leaving (Marais & Fourie, 2014). Introduction of a government monopoly for the retail and/or wholesale alcohol market may help to limit the harms attributable to alcohol use (Gupta, 2016.). Apart from the taxes on the final alcohol product, interstate duties are also levied thereby increasing the price (Endal, 2014). The evidence shows that increases in alcohol prices are linked to decreases in harm related to alcohol consumption (Home Office, 2011).

### **2.5.3 Restrictions on the availability of alcohol**

Alcohol is readily available in most communities in both licensed and unlicensed outlets in South Africa. One of the outcomes stated by the NDMP is to reduce the availability of dependence-forming substances/drugs, including alcoholic beverages (Department of Social Development, 2013; World Economic Forum & WHO, 2011). Considering the burden associated with acute alcohol intoxication prevention of drinking to marked intoxication, i.e. changing patterns of drinking in the individuals and populations at large, is an important objective of primary prevention of alcohol use disorders (Poznyak, 2005). Many countries use licences issued by the government to control the sale of alcohol. These licences can be cancelled if the law is broken. A number of studies have reported a significant impact of outlet density on alcohol consumption and drink-driving collisions. According to the WHO, South Africa currently employs restrictions on the number of retail outlets, but there are no proper restrictions on the density of outlets (Marais & Fourie, 2014).

There is need to regulate the days and hours when liquor sales should be permitted. In zoned areas, South Africa currently imposes restrictions on hours of retail sales (National Liquor Policy, 2015). The Western Cape Liquor Act, for example, states the maximum opening and closing times for on- and off-premises consumption as 11am to 2am and 9am to 6pm respectively, and Cape Town is considering restricting these hours further, and plans restricted trade on Sundays and public holidays (Marais & Fourie, 2014).

### **2.5.4 Restrictions on the minimum legal drinking age**

Increasing the legal drinking age can reduce alcohol sales and problems among young drinkers. The minimum drinking age is 18 in South Africa, which is in line with international practice; the age limit laws should be enforced to realize its full benefits (National Liquor Policy, 2015). The governments, civil society,

NGOs, producers and retailers of alcohol beverages are approaches to help enforce the legal age limit. The most direct approach to the enforcement of the age limit laws is through a requirement for identification at points of sale, such as national identity cards, passports or driver's licences (Global Actions, 2013). To effectively enforce this policy, focus should be put on sellers, since they have an interest in retaining the right to sell alcohol and may face closure (Setlalentoa et al., 2015). Efforts aimed directly at young people can prevent them from purchasing or consuming alcohol before they are legally allowed to do so, as well as addressing the involvement of adults who facilitate access to alcohol.

### 2.5.5 Roadblocks and random (unrestricted) breath testing

In South Africa, the new Road Safety Strategy includes plans to increase enforcement, particularly in the form of roadblocks. Roadblocks can identify drivers driving under the influence of drugs or alcohol (Department of Social Development, 2018). Administrative licence suspension and a reduction of the blood alcohol content (BAC) level lowers the incidence of drink-driving behaviour, and has also led to further reductions in alcohol-related road traffic accidents (Poznyak, 2005). Most countries have a BAC limit of either 0.05 or 0.08g/100ml for drivers. South Africa has different limits based on the type of drivers (Marais & Fourie, 2014).

### 2.5.6 Health warning labels

In South Africa, containers for alcoholic beverages must now contain one of seven health messages shown in the table below, and these must be at least one-eighth of the total size of the container label (Thomas, Gonneau, Poole, & Cook, 2014). There is no requirement that messages are rotated. The liquor industry has even introduced its own health warnings on alcohol (e.g. 'No sales to persons under 18') in order to influence the government to counter calls for greater government regulation (Johnson Edayarammula, 2013).

**Table 6: Health messages for alcoholic beverages, South Africa**

alcohol reduces driving ability, don't drink and drive
don't drink and walk on the road, you may be killed
alcohol increases your risk to personal injuries
alcohol is a major cause of violence and crime
alcohol abuse is dangerous to your health
alcohol is addictive
drinking during pregnancy can be harmful to your unborn baby

Source: Global Agricultural Information Network. Regulation amendment on container labels of alcoholic beverages (Global Agricultural Information Network, 2015)

## 2.6 Educational interventions

Community-wide interventions could be introduced. These involve raising awareness at community level and engaging community members in action around alcohol problems; providing information on alcohol; positive engagements with youths in and out of school; promotion of responsible use, treatment; and rehabilitation. These are some interventions that can be used (Setlalentoa et al., 2015). McKenna and Scott suggest starting awareness campaigns, as well as services that include messages about the harmful use of alcohol. Information can enhance an individual's feelings of confidence and control them to actively participate in their care (McKenna & Scott, 2007). Educated individuals will likely act in their own long-term interests, even when faced with heavy marketing and promotion (Room et al., 2011).

To achieve SDG 3, which aims to ensure healthy lives and to promote the well-being for all at all ages is essential to sustainable development. Health promotion has the potential to empower people to develop or maintain healthy lifestyles; reduces excess mortality; addresses the leading risk factors and underlying determinants of health, and helps to strengthen sustainable health systems; and is important in achieving the targets for SDG 3 by increasing awareness on consequences of harmful use of alcohol (Lood, Häggblom-Kronlöf, & Dahlin-Ivanoff, 2015; WHO, 2016e). Carrying out health promotion in settings where people live, work, learn and play is a creative and effective way of improving health and quality of life. Health promotion has a crucial role to play in fostering healthy public policies and health-supportive environments, enhancing positive social conditions and personal skills, and promoting healthy lifestyles (WHO, 2016e).

### 2.6.1 Community Based Participatory Research

Community-Based Participatory Research (CBPR) is a collaborative approach that offers opportunities to engage people as active contributors, equitably involves all partners in the research process, and those that are affected and know of the local circumstances that affect health (Israel, Schulz, Parker, & Becker, 1998; Hartwig, Calleson, & Williams, 2006). CBPR is an effective way to understand health issues by considering the social and environmental contexts in which these issues are embedded (Mosavel, Simon, van Stade, & Buchbinder, 2005).

Most participatory research focuses on "knowledge for action". The emphasis is on a "bottom-up" approach with a focus on locally defined priorities and local perspectives. Involving local people as participants in research and planning has been shown both to enhance effectiveness and save time and money in the long term. Some participatory methodologies offer strategies for generating both qualitative and quantitative information (Cornwall & Jewkes, 1995). In the current health care environment, there is an emphasis on working with communities as participants in generating more knowledge regarding health disparities. Participatory involvement of the community in translational research is promoted as a means of making the process more meaningful. Realities of the local communities should drive the research approach (Esperat, Feng, Owen, & Green, 2005).

Community engagement is an on-going, arduous, and necessary process for developing effective health promotion programmes. The challenges are amplified when the particular health issue or research question is not prominent in the consciousness of the targeted community. In SA CBPR has been applied to examine

the multiple factors that affect the health and wellbeing of young school going girls in a peri-urban community in Cape Town. This study mentioned the importance of relationship building. the importance of strong communication skills and cultural knowledge in CBPR projects cannot be underestimated (Mosavel et al., 2005).

## **2.6.2 Health promotion**

### **2.6.2.1 Health promotion globally**

Health Promotion was introduced into public health in Ottawa in 1986, where five critical areas of health promotion were identified:

1. Healthy public policy
2. Creating supportive environments
3. Strengthening community action
4. Developing personal skills
5. Reorienting health services (WHO, 1986)

Health promotion is a method that improves and increases people's control over their health and allows people to achieve their fullest health potential (WHO, 2016b). Health promotion does not focus only on actions to strengthen the skills and capabilities of individuals, but also on a wide range of social and environmental interventions (Maijala, Tossavainen, & Turunen, 2016; WHO, 2016e). Health promotion is critical to improving outcomes in the prevention and control of both chronic and communicable diseases. Health promotion has the potential to empower people to develop or maintain healthy lifestyles, reduces excess mortality, addresses the leading risk factors and underlying determinants of health and helps strengthen sustainable health systems (Lood et al., 2015; WHO, 2016e).

### **2.6.2.2 Health promotion in South Africa**

As delineated in the country's *Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17*, the first task is to focus on health promotion and primary prevention at the individual and community levels; the second is to improve NCD control through health systems strengthening; and the last is to expand surveillance of NCDs and associated risk factors and conduct research on these subjects (HSRC, 2013; Yerramilli, 2015). The Department of Health has identified several means through which NCD services may be integrated with programmes and infrastructure already established for HIV/AIDS (PSI, 2014). The Integrated Chronic Disease Management Model (ICDM), which utilizes community health workers, aims to promote equity and access through community participation, inter-sectoral strategies with an emphasis on health promotion. (Department of Health, SA, n.d.).



### 2.6.3 Pharmacists as health promoters

Primary prevention of NCDs is one of the major goals of the World Health Organization Framework for Prevention and Control of NCDs (WHO, 2013b). Increased involvement by pharmacists in health promotion and disease prevention measures could help decrease the financial and human costs, medication misuse, and drug abuse (Crawford, 2005). Pharmacists' health promotion roles are not only about creating awareness of the need for changing lifestyles and providing information but also includes empowerment of people to have increased control over and to improve their health (Anderson, 2001; Anderson, Blenkinsopp, & Armstrong, 2004). Health promotion strategies include the design of health information leaflets (HILs), focusing on community-based interventions and partnerships to maintain wellness and help modify unhealthy lifestyles (Crawford, 2005; Howarth et al., 2005; Wrench, 2012).

There is evidence from many countries that pharmacists can contribute substantially to the prevention and management of NCDs (Khanal, Nissen, Veerman, & Hollingworth, 2016). The pharmacists being widely accessible and trustworthy can be one of the good means to promote public health. Pharmacists are regarded as good health educators by the public (Khanal et al., 2016).

### 2.6.4 Women in health promotion

Over the last three decades, women's health challenges in LMICs have dramatically changed. NCDs are the leading causes of death and disability among women in developing and developed countries alike (WHO, 2013g). The burden of NCDs on a family falls heavily on the shoulders of girls and women. Women are often impacted by NCDs during their most productive years. Increasingly, families are trapped in, or driven into poverty through catastrophic health expenditures and income loss. The majority of the world's poor are women, who are least able to allocate funds for NCD treatment (PAHO, 2015). As women age, they are often faced with the challenge of living with an NCD while also caring for family members with NCDs. In many cultures, women are the first to take care of the vulnerable, sick, and dying and the last to receive preventative or lifesaving treatment (Globalization101, 2013). If a household has money available for health care, these funds often are spent only on men's health needs (Population Reference Bureau, 2011).

Women are not consistently benefitting from the economic, political and social gains that globalization can offer. Looking at the BRICS countries, South Africa is ranked 19 out of 144 countries compared to Brazil, Russia, India and China who were ranked 90, 71, 108, 100 in 2017, making South Africa the most gender-equal country in the group across health, education, politics and the workplace. From 2006, South Africa has shown progress towards gender parity across the four thematic dimensions – see Table 7 below.

**Table 7: South Africa's gender gap score card**

	2006	2017
Global Gender Gap	0.713	0.756
Economic participation and opportunity	0.556	0.652

Educational attainment	0.993	0.993
Health and survival	0.976	0.980
Political empowerment	0.326	0.399

Source: *The Global Gender Gap Report 2017* (World Economic Forum, 2017)

It appears that poor women and girls, particularly those living in developing countries, are disproportionately burdened by the costs of these swift changes to the detriment of their personal health and well-being (Sicchia & Maclean, 2006). Often, women do not have access to information and education in LMICs, and underlying determinants, including illiteracy, low socio-economic and political status, limit the ability of women to inform and protect themselves against NCDs. As a result, cardio vascular diseases cause 8.6 million (1 in 3 women) deaths among women annually (NCD alliance, 2016b). Alcohol plays a component-risk role in numerous cardiovascular diseases and it is noteworthy that cardiovascular diseases, cancers, and diabetes in particular were highlighted for targeted action (UN, 2011) because alcohol is a risk factor for many cardiovascular diseases and cancers (Shield, Parry, & Rehm, 2014).

Gender norms, roles and relations can influence health outcomes. Cultural norms and practices are two of the main reasons why gender disparities in health exist and continue to persist. These cultural norms and practices often influence the roles and behaviours that men and women adopt in society (WHO, 2018e). The impact of gender on health is not limited to women but also affects men. There are gendered dimensions to a range of health indicators, for example, men often have poorer health outcomes than women on a range of measures that include lower life expectancy, and increased mortality rates for accident-related deaths, and alcohol-related harm (Hawkes & Buse, 2013).

NCDs have been the leading causes of death among women globally for at least the past three decades and are now responsible for two in every three deaths among women each year (WHO, 2018). They cause 65% of all female deaths, amounting to 18 million deaths each year (WHO, 2011). Women appear to be more vulnerable than men to many adverse consequences of alcohol use. Women reach higher concentrations of alcohol in the blood and become more impaired than men after drinking equivalent amounts of alcohol (NIH, 1991). Research also suggests that women are more susceptible than men to alcohol-related organ damage and to trauma resulting from traffic crashes and interpersonal violence (Tuyns, AJ, Pequignot G, 1984; Hommer D, Momenan R et al 1996; Urbano-Márquez A, Estruch R, 1995; Testa M, Livingstone J, 2005).

As the gender that is more vulnerable to NCDs, the WHO suggest that girls and women need to be the focus of health promotion interventions (WHO, 2011d). Furthermore, women are ideally situated to lead the battle against NCDs, both at household and community levels. Empowering women with equitable access to knowledge and resources to prevent NCDs in their families and their own health could have several desirable effects, as women could be key agents of change in the adoption of healthy lifestyles. Women and girls often

serve as the cornerstone of family food production, nutrition and lifestyles, making them instrumental in reducing modifiable NCD risk factors in the household and community at large (NCD alliance, 2011).

Greater participation of women in the realm of political leadership is required so that the policy framework and health agenda of a nation can be influenced to promote gender equality and health equity (Östlin, Eckermann, Mishra, Nkowane, & Wallstam, 2006; UN Women, 2017). For women to take the lead in health promotion initiatives in their communities it requires a multi-pronged approach, for example, to improve health literacy requires educating the public. To achieve this, it is important to empower individuals, women in particular, so that they are confident to impart their health knowledge to the rest of their community. Health literacy initiatives are important in this regard. Training women to become health workers, especially in rural communities in LMICs, can foster their independence while simultaneously building a sustainable health care system. Additionally, health education allows these women to make informed decisions about their personal wellbeing, which in turn can help them avoid preventable diseases.

To promote health women also need to cultivate both bridging and bonding capital amongst the women in their communities to extend the network of supportive relations and then to strengthen them, thereby creating a greater sense of community (Speer, Peterson, Armstead, & Allen, 2013; Woolcock, 2001). This highlights the way in which health promotion initiatives are undertaken. It is important for health advocates to identify the range of existing community based organisations and associations and to work in partnership with them in the delivery of health promotion activities. Finally, interventions in the form of community based educational outreach projects need to implement action plans that are culturally sensitive and personable in order to empower community members (Nutbeam, 2008).

## 2.7 Literacy

Nationally, the adult literacy rate is above 90% in South Africa (Statistics South Africa, 2014b; UNESCO, 2014; UNESCO Institute for Statistics, 2013), but literacy skills are considerably lower among older adults, and most health education materials are often written above the reading level of most adults (Brega et al., 2015; Kutner, Greenberg, Jin, Paulsen, & White, 2016). Individuals with basic or below basic health literacy levels come across difficulties when looking for specific information in complex materials, hence they struggle to understand and make inferences based on the information, as well as to make appropriate health decisions (Randi Shedlosky-Shoemaker, 2009). These demands may be substantial when materials are aimed at a high reading level, if text and format are too dense, or if concepts are ambiguous and non-motivating (Helitzer, Hollis, Cotner, & Oestreicher, 2009). Health education material may only be effective if it conforms to the highest standards of readability and suitability for the target population.

### 2.7.1 Health literacy

Health literacy is a term that first originated in 1974, referring to an individual's capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (Simonds, 1974). In 1998, the WHO broadened this definition to include cognitive and social skills, emphasising the individual's capacity to *use* the health information (WHO, 1998). Health literacy is associated with disease knowledge, disease management, health outcomes. Adults with limited education and literacy

skills have greater difficulty understanding health information, face specific barriers in attempting to understand health issues, prevent disease, or access health services or insurance (McKinney & Kurtz-Rossi, 2000). Functional health literacy requires complex, multidimensional skills, including reading, writing, listening, numeric literacy, oral and visual communication, and decision-making abilities (Helitzer, 2009). Health literacy contributes in making everyday health decisions. It increases people's control over their health, making them more able to look for information (Kanj & Mitic, 2009; Keikelame & Swartz, 2013).

Enhancing health literacy has emerged as a national and global public health priority to reduce health inequity (Muscat et al., 2016). The people who read the written material need to use their functional health literacy skills to interpret, understand, analyse, and apply the information they gain from these written materials (Helitzer et al., 2009). When the available information is too difficult to understand, the individuals may not be able to understand the information and will be less informed (Leroy, Helmreich, & Cowie, 2010). Matching the level of health literacy of an individual and the literacy level of typical health information materials is important in providing healthcare, while a mismatch in levels may lead to negative health outcomes, therefore measuring the health literacy and health information materials to the persons' level is one way of improving the provision of healthcare (Hunt, Dowse, & Rose, 2008).

Although literacy levels are associated with education, ethnicity and age (Paasche-Orlow, Parker, Gazmararian, Nielsen-Bohlman, & Rudd, 2005), a number of studies have shown that having limited literacy or numeracy skills also acts as an independent risk factor for poor health. A systematic review of the relationship between literacy and health outcomes concluded that limited literacy is linked to several adverse health-related variables, including knowledge about health and health care, hospitalization, global measures of health, and some chronic diseases (DeWalt, Berkman, Sheridan, Lohr, & Pignone, 2004; Schillinger, 2002).

#### **2.7.1.1 Health literacy in health promotion initiatives**

Published literature identifies six general themes that help determine why health literacy is important for population health:

1. The large numbers of people affected: some countries have high adult literacy rates; however, approximately half have rates below the global developing country average of 79 percent.
2. Poor health outcomes: there is a clear correlation between inadequate health literacy - as measured by reading fluency - and increased mortality rates.
3. Increasing rates of chronic disease of 56 million global deaths in 2012, 38 million, or 68%, were due to NCDs. Nearly three quarters of NCD deaths - 28 million - occurred in low- and middle-income countries with about 48% of deaths occurring before the age of 70 in these countries (WHO, 2017c). Health literacy plays a crucial role in chronic disease self-management.
4. Health care costs: the additional costs of limited health literacy range from 3 to 5% of the total health care cost per year.

5. Equity: low levels of health literacy often mean that people are unable to manage their own health effectively, access health services effectively, and understand the information available to them and thus make informed healthy decisions. Improving the health literacy of those with the worst health outcomes is an important tool in reducing health inequalities (Kanj & Mitic, 2009).

6. Health information demands: a mismatch exists between the reading levels of health-related materials and the reading skills of the intended audience. Often, the use of jargon and technical language made many health-related resources unnecessarily difficult to use.

It is therefore imperative that health information is tailored to the literacy levels of the intended population.

### **2.7.1.2 Health promotion materials**

Health-related education or information for the general public is a major element of health care provision and a key strategy to reduce the outcomes of low health literacy (Grime & Ong, 2007; Johnson et al., 2008). It can be achieved through provision of information through written materials, multimedia or visual or audio-visual presentations. Effective communication is the backbone of health promotion and disease prevention (Schwartzberg, Cowett, VanGeest, & Wolf, 2007) as exposure to information increases reader awareness. The reader's understanding of the given information may potentially increase his/her knowledge on the subject matter. Changes in knowledge influence attitudes, which in turn influence behaviour (Medrano Martínez et al., 2015).

Health promotion materials like HILs have been designed to increase access to health information (Colledge, Car, Donnelly, & Majeed, 2008; Gal & Prigat, 2005).

#### **2.7.1.2.1 Design of the HILs**

Many factors should be considered when designing all types of health information materials, including HILs. The topics covered, reading level, terminology, and language should be suitable for the intended target group (Badarudeen & Sabharwal, 2010a; Kreuter, Farrell, Olevitch, & Brennan, 2013).

##### **2.7.1.2.1.1 Content and design principles used to design leaflets**

Different sources (Adepu & Swamy, 2012; Cleary, 2017; Gal & Prigat, 2005; MHRA, 2007, 2012; Pander Maat & Lentz, 2010) have stated that when developing HILs, key points to note include:

##### **2.7.1.2.1.2 Order of information**

What information is being addressed in the HIL? This will help to decide the order of the information, what to include in headlines and which particular pieces of information need to stand out to the reader.

##### **2.7.1.2.1.3 Content**

- Complex language and medical jargon cause difficulty in understanding by patients. Translate all the information into lay language
- Use short sentences and/or bullet points
- Spelling and grammar in the text should be checked.

#### 2.7.1.2.1.4 Design and layout

Information design essentially makes complex information easy to use and easy to understand.

- Information architecture - Very little information is read from beginning to end and the way in which the information is arranged is important in ensuring that readers can find their way around it. Making the information easy to use is an important output.
- Typography
  - The typeface used and other elements of graphic design such as colour of text need to be chosen with the audience in mind.
  - White space within the written text is helpful in creating a feeling of openness about the information being presented.
  - The use of columns which are familiar to most readers through newsprint help readers to easily assimilate information.
  - Line length and line spacing are important aspects of design and should be considered when deciding on an appropriate layout.
- Clear language - the information is clearly comprehensible and easily legible.
- Helping readers to navigate the information - Headings within the HIL are a vital means of seeing at a glance how the information works and in addition headings indicate where a section starts and help the reader to find the information they are looking for. Headings must be conspicuous and short, as these are easier to read. Capital letters may be used for headings.
- Other factors
  - Sensible use of colour can help but make sure contrast is good and there are not too many colours which can in itself be a problem (MHRA, 2012).
  - Font size and type: Large font sizes are advisable, as they facilitate reading. Font sizes 12 and larger are considered acceptable. Sans serif fonts are often used. The use of bold and italics should be kept to a minimum. Capital letters should be avoided because these are difficult to read and slow the reading process.
  - Make sure there is good use of white space. Dense text means patients lose concentration and therefore cannot find the information required.
  - Make sure related information is located together and not split over different columns or sides of the leaflet
  - Paper size: A4 and A5 are preferable for long leaflets, as these are easy to turn over. The z-fold design has also been used.
  - Graphics: Pictures and photographs should relate to supplementary text. Decorative images should be avoided as these can cause confusion.
  - The active voice is favoured because it personalises the text and minimises potential confusion and misinterpretation.

#### 2.7.1.2.1.5 User testing

- User testing or other forms of end user consultation ensures that their views on the content and design and layout are considered so that the final leaflet is suitable for them. Before writing the

information and setting it out on the page, consider where the HIL is going to be used, who will be using it and what particular issues will it be addressing. Involving end users at an early stage in the drafting of the HIL should ensure success in the testing later.

### **2.7.1.3 Readability tests**

It is important to find out whether health educational material is understandable to the target audience. Educational materials can have little educational value if they are written in language that is so complex and obscure that the user cannot understand the content. Readability tests that can be used for evaluating the level of difficulty of health information can be used. Assessment of readability procedures are based on either word and sentence lengths or word elimination from a standard list. The Flesch and Fog formulas are suitable for determining readability levels from fifth or fourth grade respectively to college level (Spadaro, Robinson, & Smith, 1980).

Readability is an attempt to match the reading level of written material to the "reading with understanding" level of the reader (National Literacy Trust, 2017). The readability tests that were used for this research were the Flesch-Kincaid Grade Level index, which is a way to measure and report the readability of an English text, and the Simplified Measure of Gobbledygook (SMOG) which is a readability formula that estimates the years of education a person has (McLaughlin, n.d.). The readability tests help to design written health education materials that are at a level that allows the recipient to read and understand them (Mayer & Villaire, 2009).

Readability formulas are often used to guide the development and evaluation of literacy-sensitive written health information. However, readability formula results may vary considerably because of differences in software processing algorithms and how each formula is applied. These variations complicate interpretations of reading grade level estimates, particularly without a uniform guideline for applying and interpreting readability formulas (Wang, Miller, Schmitt, & Wen, 2013).

## **2.8 Culture sensitivity in health promotion**

Cultural sensitivity involves an awareness and acceptance of cultural differences, self-awareness, and knowledge of the culture in that area and also includes using familiar objects and symbols (Houts, 2006; American College of Obstetricians and Gynecologists, 2011). Language and cultural barriers should be examined and addressed, interpreters who have been properly trained or written translations of health education materials into the local language can be provided for those who cannot speak English (Singleton & Krause, 2009).

The implications of socio-cultural contexts impact the effectiveness of health information transmission. Health promotion programmes should only demonstrate cultural sensitivity. Communication is enhanced when cultural knowledge is incorporated in healthcare interaction (Mohd Khairie Ahmad, 2008). Incorporating the culture, beliefs and practices that make up the value systems of the individual, active listening and using open-ended questions can improve communication. Understanding and educating oneself on the cultural context of a particular population and being open minded can aid in communication (American College of

Obstetricians and Gynecologists, 2011). When designing materials to meet the population in terms of culture, community based approaches with strong outreach components can be used as well as cross-cultural communication skills (Cross, 1989).

## **2.9 Workplace health promotion**

Reducing NCDs and the main behavioural risk factors for NCDs will increase population wellness or wellbeing, which is important to economic and social development. When people are physically and mentally healthy, they produce more; they learn better; they incur less health care related costs (to themselves and to government); and communities, families and individuals thrive (Nöhammer, Schusterschitz, & Stummer, 2013). The WHO considers workplace health promotion programmes to be one of the best options for the prevention and control of NCDs, as these can help achieve the WHO objective of reducing the avoidable deaths of NCDs, as well as the burden of mental health problems (WHO, 2017b).

The workplace can influence the physical, mental, economic, and social well-being of workers and, in turn, the health of their families, communities, and society. It offers an ideal setting for supporting the promotion of health of a large population (WHO, 2016g). Previous studies show that workplace health programmes have many potential benefits for both employers and their employees (Downey & Sharp, 2007; Goetzel & Ozminkowski, 2008; O'Brien, 2003; Pelletier, 1993; Pescud et al., 2015). A workplace health programme that combines both individual and organisational strategies may produce benefits for individual employees as well as their families, and for the organisation (Burke & Richardsen, 2014).

### **2.9.1 How employees can benefit**

Adopting healthy behaviours not only reduces the risk for developing disabling or life threatening diseases and their associated costs, but improves everyday quality of life. Programmes that deal with individual health behaviours from the work environment help reduce disease (CDC, 2015b). Safe workplaces help achieve sustainable development, which is important in reducing poverty. Occupational health is essential to public health; diseases, including NCDs, need workplace programmes as part of the disease control strategy (WHO, 2016g). Employees often see a comprehensive workplace health programme as an investment, made by their company, in their well-being, and as a reflection of how much the company cares about them, leading to a positive impact on job satisfaction and employee morale (CDC, 2013).

### **2.9.2 How employers can benefit**

These strategies help to create a culture of health, and can reduce an employer's reliance on individual participation in employer-sponsored programmes (CDC, 2013). Additionally, evidence shows that workplace health programmes can be taken as a form of an attractive employee compensation and benefits package, which can be used to maintain productivity and morale. Individual employees and employers can derive economic benefits from improved health (Australian government, Comcare, 2011; Nöhammer et al., 2013; WHO, 2016g). For employees, improved health can reduce out-of-pocket expenses for physician office visits, medications, procedures, or hospitalizations related to acute or chronic illness. Improved health may also help with job security, because the employee is more productive, absent less often, and more likely to avoid short- or long-term disability. Employers with healthier employees will spend less on direct medical costs,



worker compensation, and disability costs, replacement costs for those who are ill or absent, and costs for recruiting and training new workers (CDC, 2013).

### 2.9.3 Influencing positive behaviour

People who drink alcohol may find it hard to stop or to reduce their alcohol intake. People will change their behaviour if they see the new behaviour as easy, rewarding, and normal. For a behaviour to be rewarding, a person must feel that the change in their behaviour will have results valuable to them. It will be important to educate people on the benefits of stopping alcohol use, and on how harmful use of alcohol could be detrimental to their health (Ford Health, 2009). The Prochaska and DiClemente model (Figure 2 below) recognizes that change does not happen in one step, but that people tend to progress through stages on their way to successful behaviour change. Each person progresses at his/her own rate, and this depends largely on the support and motivation offered.

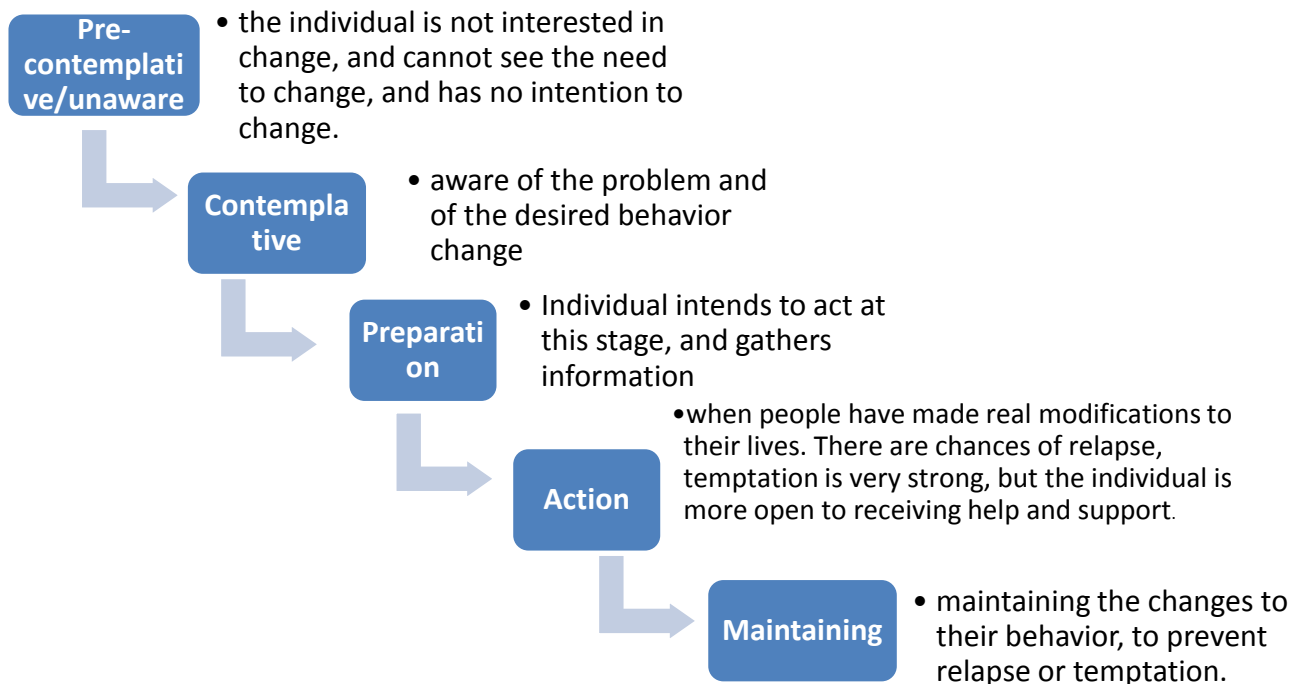


Figure 2: Stages of behaviour change

Source: *Stages of behavior change* (Queensland Hospital, 2007)

## 2.10 Chapter summary

This chapter details the burden of NCD strategies that have been implemented in an attempt to reduce the prevalence of these diseases both in South Africa and globally. Harmful use of alcohol is one of the risk factors of NCDs and alcohol use also presents social and economic effects. There are causal relationships between harmful use of alcohol and incidence of both NCDs and infectious diseases such as TB, pneumonia and HIV/AIDS. The strategies to reduce harmful use of alcohol globally and in South Africa, as well as the various strategies implemented to combat this problem, include national policies and educational interventions including health promotion. Work-related alcohol use incorporates alcohol-related harm that can impact the workplace and staff for example increased accident risk, reduced workplace productivity due to intoxication, hangover effects resulting from drinking at work or outside of work and drinking that is informed or influenced by workplace factors. Alcohol-related harm refers to both the short-term and long-term negative consequences of alcohol use. Workplace programs to prevent and reduce alcohol-related problems among employees have considerable potential. Workplace health promotion can benefit both the employees and the organization if implemented successfully, tailoring these projects to be culturally sensitive and contextually appropriate for the target population. Participation among employers play a key part in these workplace alcohol programmes. One of the chief problems in combating alcohol abuse in the workplace and in society, lies in the widespread acceptance of the social consumption of alcohol. As a domain for alcohol-problem prevention, the workplace holds great promise.

### 3 RESEARCH METHOD

This chapter describes the research design, data collection, and data analysis procedures applied during this study to address the research questions stated in Chapter 1. The sample selection criteria and ethical considerations of the project are also outlined. Practical procedures, as well as the theoretical foundations guiding them, will be discussed too.

#### 3.1 Theoretical framework

A theoretical framework is a conceptual group of ideas that establishes a sense of structure and that guides the research. The theoretical framework consists of the selected theory that supports the concepts and definitions that are relevant to your topic (Grant & Osanloo, 2015). There are various ways to conduct research, and a theoretical framework helps to focus it in the desired direction, and to link theories to practice (Gray, 2009). The CDC Workplace Health Model was used to guide this study.

##### 3.1.1 The Centres for Disease Control and Prevention Workplace Health Model

Workplace health promotion programs are more likely to be successful if occupational safety and health is considered in their design and execution. The Centres for Disease Control and Prevention (CDC) Workplace Health Model integrates and coordinates health with health promotion to increase program participation and effectiveness which may also benefit the broader context of work organization and environment (Sorensen G, Stoddard AM, LaMontagne AD et al). The model seeks to create cultures of health that lead to more opportunities to improve health for workers inside their organizations and within their community environments. The model also recognizes that the size and scope of an individual workplace health program may be influenced by and tailored to the company's size, resources, work sector, employee demographics, and location (CDC, 2018). This model provided a step by step summary of factors to consider when designing, implementing and evaluating the workplace health promotion programme for this research.

Ideally, workplace health projects contain a combination of individual- and organization-level strategies and interventions to influence health (CDC 2009). These include health-related programs such as health education and counselling, health-related policies, health benefits, and environmental supports designed to encourage the health, safety, and well-being of all employees (Koffman D, Lang E, Choosewood L 2013). This comprehensive approach addresses alcohol as a risk factor to harmful use of alcohol and health conditions simultaneously to influence the organization at multiple levels, including its culture and the worksite environment, all with the ultimate idea of producing behavior change among the employees (CDC, 2018b). The CDC workplace health model defines culture as "the creation of a working environment in which employee health and safety is valued, supported, and promoted through workplace health programs, policies, benefits, and environmental supports" (CDC, 2016).

The CDC Workplace Health Model is a systematic and stepwise process of building a workplace health promotion program that emphasises four main steps:

1. **Assessment** to define employee health risks and concerns and describe current health promotion activities, capacity and need.

2. **Planning** process to develop the components of a workplace health programme including goal determination and selecting priority interventions.
- **Programme implementation** involving all the steps needed to put health promotion strategies and interventions into place and making them available to employees.
  - **Evaluation** of efforts to systematically investigate the quality, worth, effectiveness, and significance of an organised health promotion action/activity (CDC, 2013; Guazzi et al., 2014).

Table 8 below details how constructs of the model were applied to this study.

**Table 8: Application of the CDC workplace health promotion model in current research**

<b>Construct of the model</b>	<b>Application in the study</b>
<b>Assessment</b>	Workplace Health Assessment: Obtaining information from RU Human Resources Department based on the current alcohol health promotion policies and interventions at Rhodes University SSIs will be performed on key stakeholders, who may include representatives from the Human Resources Office at Rhodes University; researchers in Rhodes University working on the responsible use of alcohol; head nurse at health care centre; representative managers of support staff; HIV/AIDS officer and others. These interviews will be conducted to acquire information to help identify factors that help and restrict alcohol use by support staff and also health promotion.
<b>Planning and management</b>	The wellness specialist was recruited to help coordinate the project and engage the peer educators, the goal was identified, to implement a workplace health promotion programme
<b>Programme implementation</b>	Designing 3 health pamphlet topics related to alcohol consumption for use by peer educators. Conducting SSIs, FGDs and workshops
<b>Evaluation</b>	Evaluate the facilitating and constraining factors of the alcohol workplace health promotion programme

### 3.1.2 Study setting

This study was conducted at Rhodes University in Grahamstown, which is in the Eastern Cape Province of South Africa (Figure X). The Eastern Cape has a Gini coefficient of 0.70 being one of the poorest provinces in South Africa (HSRC, 2012). The first language of the majority of the Grahamstown population is isiXhosa followed by Afrikaans.

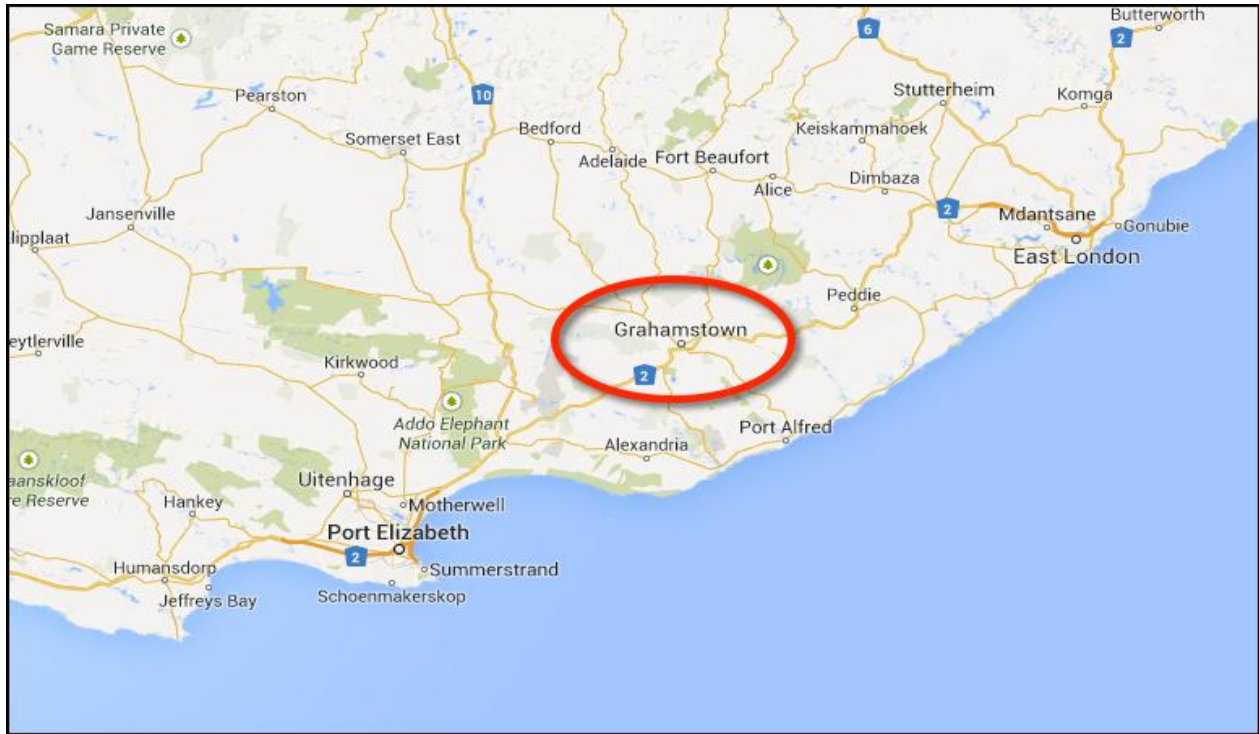


Figure 3: Map showing Grahamstown location in the Eastern Cape

Rhodes University is a tertiary education institution with 1500 support staff. The university's staff are graded into levels from grade 1 through to 25 with 1 being the lowest and 25 the highest. The participants in this study were mainly the lower level support staff (grade 1 to 5) working in Food Services, Residential Operations, Central Cleaning, Building and Maintenance, Grounds and Gardens, Engineering, and the Campus Protection Unit.

Head of divisions and managers were also included in the study to learn of management's views on WHP and the facilitating and limiting factors.

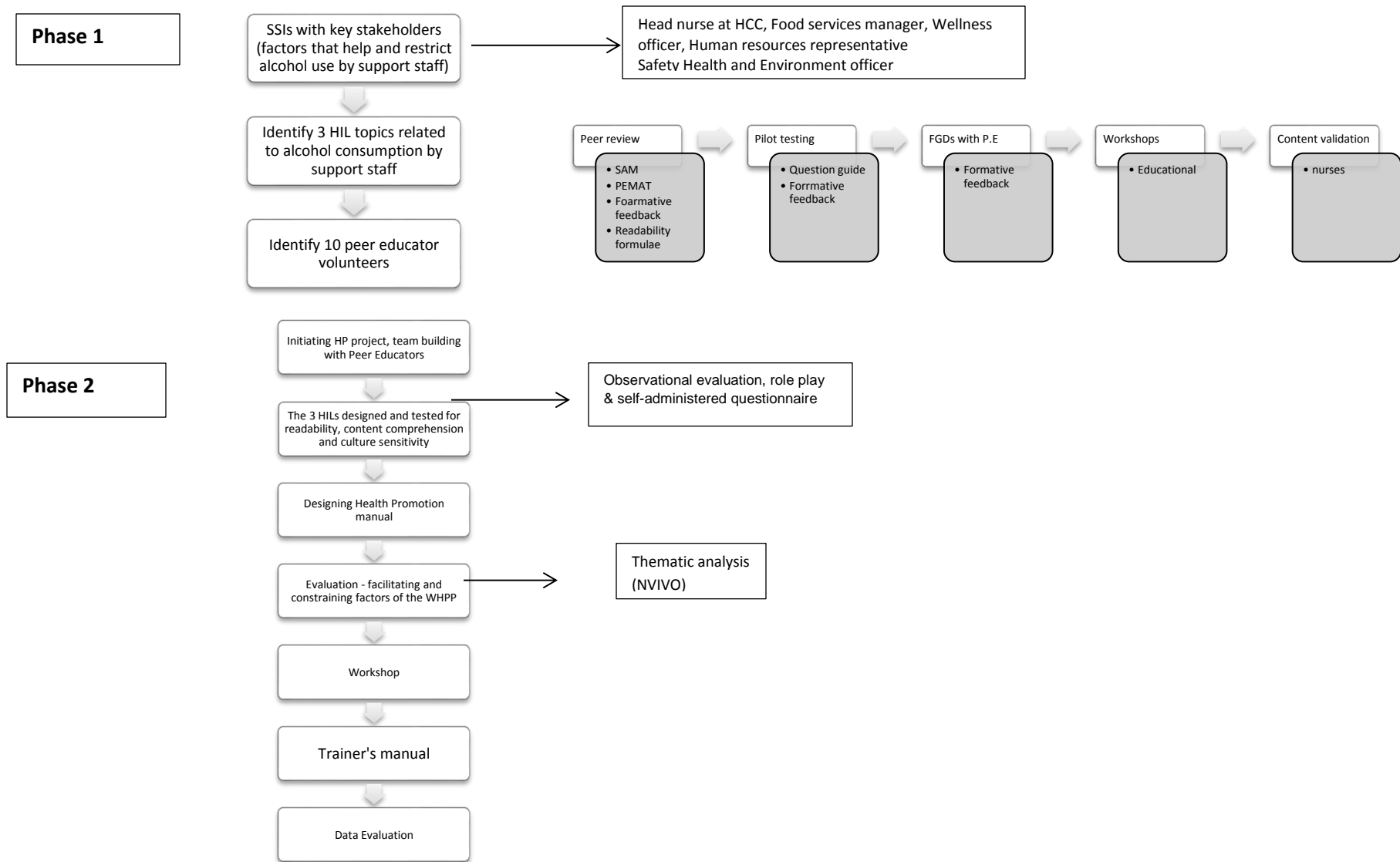


Figure 4: Flowchart of research protocol

### 3.1.3 Research design

#### 3.1.3.1 Mixed methods research

This represents research that involves collecting, analysing, and interpreting quantitative and qualitative data in a single study (Cameron, 2015). The mixed methods research main principle is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone (Creswell & Clark, 2012). Qualitative data consists of open-ended information that the researcher usually gathers through interviews, focus groups and observations. Quantitative data includes close-ended information such as that found to measure attitudes, behaviours, and performance instruments (Resource centre, 2016). This was a mixed methods research. It was predominantly qualitative with some quantitative data. See Table 9 below.

**Table 9: Table showing where qualitative and quantitative data was used at different phases of the research**

	Qualitative	Quantitative
Phase 1	The past and current health promotion policies at the university and the factors affecting the implementation at Rhodes University collected during SSIs and FGDs and identifying codes and themes.	Collection of volunteering peer educators in the alcohol project demographics.
Phase 2	To gather qualitative data for improvement to the HILs and Trainer's manual	Collection of pilot study participants and workshop participants demographics
	Feedback and emerging themes on the learning activities including collaboration with the Drama Department and the workshop	Data was gathered using readability tests, the Suitability Assessment of Materials (SAM) tool, and the Patient Education Material Assessment Tool (PEMAT).
		Workshop knowledge assessment of pre- and post- intervention results

Mixed methods were used in this research to overcome limitations of using a single research method to improve understanding of and to further explore the research questions.

#### 3.1.4 Translational action research

Translational research is defined as “the process of applying ideas, insights, and discoveries generated through basic scientific inquiry to the treatment or prevention of human disease” (NINDS, 2002). Translational research seeks to improve health care by promoting action and change in real-world health care settings (Green, 2008). A traditional investigator-driven approach to research that fails to adequately engage patients, clinicians, and other key stakeholders within health care systems is a known barrier to translating research into practice, often leading to interventions that are not sustainable in real-world environments (Schmittiel, Grumbach, & Selby, 2010). Translational research makes engagement with practitioners and the wider community its priority (Mitchell, 2016). Community-based participatory research (CBPR) is a conceptually

rich alternative to traditional research paradigms that emphasises partnership with community members in all phases of research activity.

### **3.1.5 Community-based participatory research**

The researcher worked collaboratively and in participatory ways with the peer educators throughout the research period which was an interactive process. The peer educators gave feedback during the development of the HILs and Trainer's manual, they also shared their current knowledge, views and perceptions to improve the health education and make it more tailored for the target audience. The FGDs and workshops encouraged collaborative learning by sharing experiences and views, allowing relationships to form between the peer educators and the researchers and a sense of ownership for the project to develop. The process stressed the importance of community participation in harmful use of alcohol and the importance of communication skills.

## **3.2 Ethical considerations**

Ethics are the norms or standards for conduct that distinguish between right and wrong. They help to determine the difference between acceptable and unacceptable behaviours (CIRT, 2017). Human research may be conducted only with ethical approval, and institutions may have ethical bodies for ethical review (Australian government, NHMRC, 2014).

The majority of ethical guidelines require beneficence, that informed consent is obtained and that anonymity, privacy and confidentiality are maintained (Marianna, 2011). This research included human intervention. The researcher interacted extensively with the participants, accessing information that is not in the public domain, thus entering their personal domains of values, thoughts, and opinions to collect data. For this reason, the researcher was obliged to respect the rights, values, and desires of the participants (Webster, Lewis, & Brown, 2013).

Ethical considerations made for this research were as follows:

### **3.2.1 Approvals**

Prior to starting the study, the research proposal was presented in front of, and approved by, the Higher Degrees Committee, Faculty of Pharmacy - Rhodes University (Appendix 1). Ethical approval (Appendix 2) was obtained from the Faculty of Pharmacy Ethics Committee - Rhodes University.

### **3.2.2 Informed consent**

Informed consent is one of the methods to protect a patient's right to autonomy (Clark, 1991). Individuals can make informed decisions to participate in research voluntarily only if they have information on the possible risks and benefits of the research (Ford & Reutter, 1990). The aims and objectives of the study were explained to the participants through invitation letters (Appendix 3). Participants were notified that participation was voluntary and they could withdraw from the study at any point. Written consent was obtained from all participants before participating in the study in the format presented in Appendix 4.



### 3.2.3 Non-maleficence

Non-maleficence involves an ethical and legal duty to avoid harming others (Morrison, 2009). The researcher ensured that the participants would not be harmed in any way by participating in the study. Oral consent was obtained at different stages of the research and participants were encouraged and reminded that they could withdraw at any point and to communicate if they were not comfortable with the research procedures at any stage. To avoid scheduling conflict all meetings were discussed with all participants before the meeting date and the meeting venues were scheduled to be convenient.

### 3.2.4 Privacy and confidentiality

The ethical duty of confidentiality includes obligations to protect information from unauthorized access, use, disclosure, modification, loss or theft. Fulfilling the ethical duty of confidentiality is essential to the trust relationship between researcher and participant, and to the integrity of the research project (Government of Canada, 2016). The use of study codes is an effective method for protecting the confidentiality of research participants (Virginia Tech, 2010). Anonymity in this study was ensured by assigning a study code (participant number) to each participant. Participants were guaranteed confidentiality which was stated in the participant invitation letter and collecting information only relevant to the study.

## 3.3 Collaborators

### Academic researchers

Academic researchers who conducted this study have a health background. Both the principal supervisor and the researcher are pharmacists by training and are based in the Faculty of Pharmacy at Rhodes University. The 1<sup>st</sup> co-supervisor is a researcher in epidemiology of cardiovascular disease and associated risk factors in the United Kingdom who also has a particular interest in the determinants of obesity, health promotion in schools and community interventions, and has developed a number of research programmes in these areas. The second co-supervisor has a background in human resource management and industrial psychology and is currently based in the Rhodes Business School.

### Institutional wellness

The research was conducted in collaboration with the Institutional Wellness Specialist who introduced the researchers to the peer educators who became part of the research and the key stakeholders who were interviewed and became part of the facilitators at the workshop.

### Business School

The researchers partnered with lecturers from the Rhodes Business School with one being a co-supervisor for the research.

### Community engagement

Collaboration involved people from the Community Engagement Office including the Director.

### Drama Department

The collaboration with the Drama Department involved 5 Honours students and their supervisor. This collaboration was mainly for using drama to raise awareness on the harmful use of alcohol.

### **Human Kinetics and Ergonomics (HKE) Department**

It was important to include this department as lack of physical activity is one of the risk factors of NCDs. The lecturers collaborated in the project by providing information on physical activity and diet.

#### **Participants**

The study participants were:

- Support staff - these are non-academic staff members employed by the University. The study was aimed at the support staff.
- Peer educators – a group of support staff which was formed mainly to give staff access to information, including education about HIV and AIDS in general, information about systems and policies at Rhodes related to HIV/AIDS, and information about resources in Grahamstown. The role of the peer educators is to:
  - Provide information when approached by staff members, or refer them to an appropriate contact person or organization.
  - To attend follow-up support, training and discussion meetings. These meetings provide the peer educators with an opportunity to raise questions they are unsure about, as well as to discuss what problems need addressing. Ongoing training sessions are organised based on the issues that are being raised by staff.
  - Raise awareness of HIV and AIDS issues, through participating in and giving input into the Awareness Weeks, distribute pamphlets in agreed upon areas, and help monitor the condom distribution system.
  - Initiate further activities that are identified by the group as being needed.

The researcher used an already existing system to implement the workplace health promotion project.

- Key stakeholders - these are mainly head of departments and managers who supervise the support staff. These also include other personnel who are involved in organisational and staff related wellness.

### **3.4 Participant recruitment and sampling methods**

Purposive sampling was the first sampling technique used in the study to identify key stakeholders based on the objectives of the study. In this sampling technique the researcher selects people based on the particular purpose of the experiment (Palys, 2008). Snowball sampling/chain sampling was also used to identify key stakeholders; this is when interviewees refer people they know to the researcher for inclusion in the sample (Dudovskiy, 2017). A total of 5 key stakeholders were recruited using these two sampling methods.

Convenience sampling was used to recruit support staff during the pilot study. In convenience sampling, researchers rely on the most readily available participants. Available support staff were approached and asked to participate in the pilot study. Volunteer sampling was also used in the study; this is when participants volunteer to be part of the study (Angel, 2015). Ten out of a total of 40 peer educators volunteered to participate in this project.

### 3.5 Communicating with the participants

All key stakeholders were proficient in the English language; therefore, all SSIs were conducted in the English language. The support staff were not first language speakers, and some found it difficult to communicate in the language, but understood basic English when spoken to. An interpreter was not available during the FGDs, but the peer educators were encouraged to communicate in a language that they were comfortable in. Other colleagues in the discussion would interpret to the researchers who were not first language speakers. The researcher used simple language and avoided medical jargon to enhance understanding. A translator was available for the workshop who would translate for both the facilitators and the peer educators.

### 3.6 Data collection techniques and procedures

Information was gathered from different sources. Data collection techniques allow for data collection which is the process of gathering and measuring information on variables of interest in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. Techniques used and the tools used for data collection are summarized in the table below.

**Table 10: Techniques employed and the tools used for data collection**

	Data collection technique	Data collection tool
Phase 1		
Exploratory phase	Semi-structured interview Focus group discussions	Question guide Voice recorder Note-taking
Educational health promotion phase	Focus group discussions Workshops	Health information leaflet Feedback questionnaires Voice recorder Note-taking
Phase 2		

Implementation phase	Workshops	Feedback questionnaire Voice recorder Note-taking
Phase 2: Evaluation phase	Focus group discussions	Voice recorder Observation

The research process was divided into two main phases. The first phase was a needs assessment to identify existing gaps and exploratory as well to determine the best research design, data-collection method and selection of subjects. The second phase was the educational intervention directed by the data collected in Phase 1. The intervention phase consisted of developing and designing health information leaflets and a trainer’s manual.

**3.6.1 Phase 1: Exploratory needs assessment**

The researcher intended to identify current and previous WHP activities initiated at RU, especially those targeted at harmful use of alcohol. Facilitating and limiting factors for such a project were also explored including suggestions on how to initiate and improve the project.

**3.6.2 Participant demographics**

Demographic details of all participants were collected before the interviews and discussions started. The data included: sex, age, highest level of education, home language and their role at Rhodes University.

**3.6.3 Semi-structured interviews**

The semi structured interview was a useful tool that was used in the exploratory phase of the project to gather information. In semi-structured interviews, the interviewer sets up a general structure by deciding in advance the ground to be covered and the main questions to be asked. The detailed structure is left to be worked out during the interview, and the person being interviewed has a fair degree of freedom in what to talk about, how much to say, and how to express it (RWJF, 2008b). Semi-structured interviewing is a very flexible technique for small-scale research and allows informants the freedom to express their views on their own terms (Drever, 1995). The interviewer follows the guide, but can follow topical routes in the conversation that may stray from the guide when he or she feels this is appropriate to gain insight and clarity on the topics being discussed that would not emerge with predetermined questions (Rubin, Rubin, & Haridakis, 2009). This approach includes the use of open-ended questions and training of interviewers to follow relevant topics that may stray from the interview guide (Keller & Conradin, 2017); however, it still provides the opportunity for identifying new ways of seeing and understanding the topic at hand and allowing discovery of new knowledge that may not have been considered by the researcher (McIntosh & Morse, 2015; Stuckey, 2013).

The interviewer has a paper-based interview guide that he or she follows. Since semi-structured interviews often contain open-ended questions and discussions may diverge from the interview guide. In this study the interviewer tape-recorded the interviews for transcription and analysis. SSIs were chosen because of the key stakeholders' busy schedules as the interviews were to be conducted once. It was a difficult to organise the schedules of all key stakeholders for a focus group discussion, so the researcher organised separate meetings with the stakeholders at times that suited them.

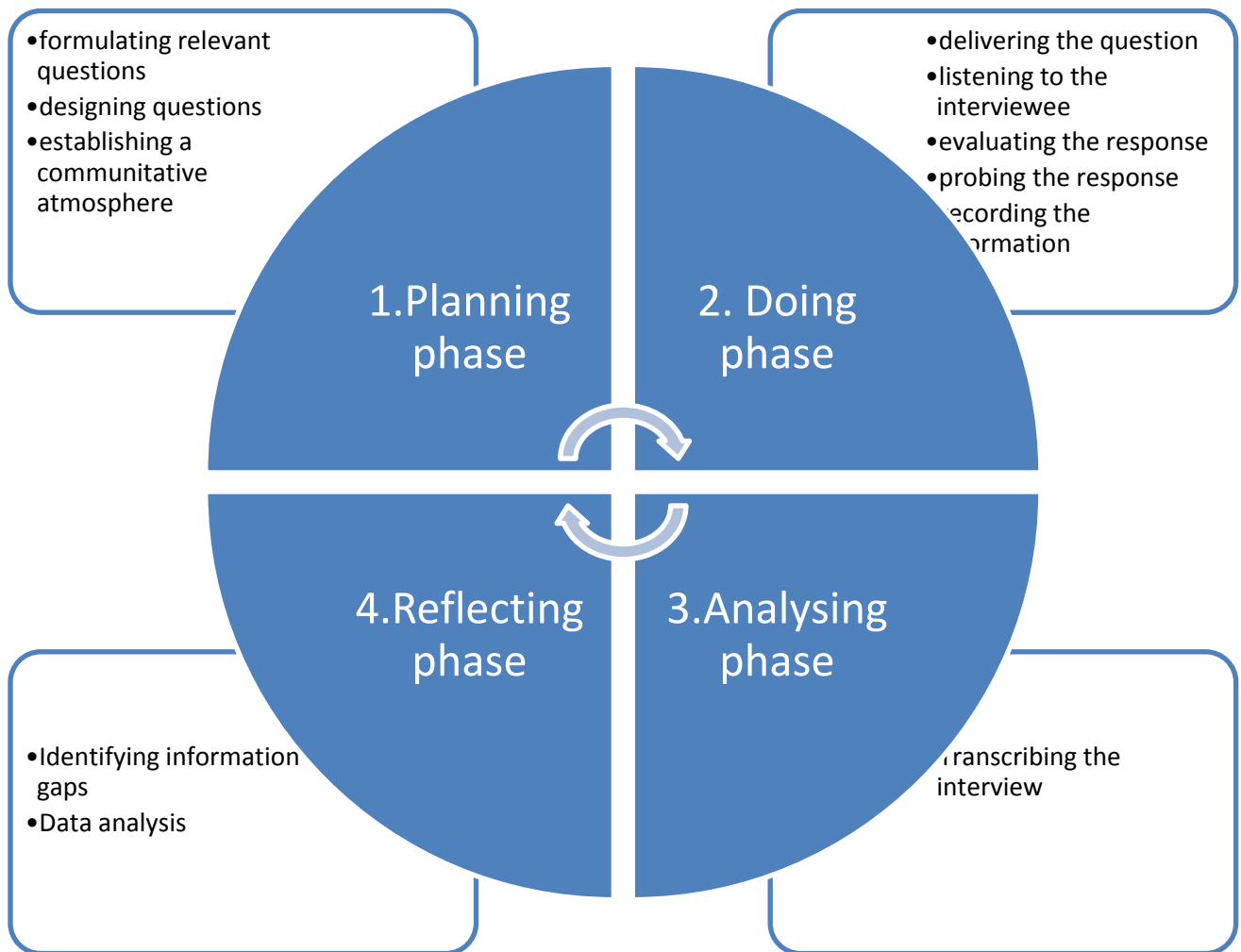


Figure 5: Stages of conducting a SSI

Source : *Semi-structured interviews (van Teijlingen, 2014)*

### 3.6.3.1 *Semi-structured interviews with key stakeholders*

We used semi-structured interviews to gather focused, qualitative textual and comparable data with a pre-determined set of open questions that provided the opportunity for the interviewer to explore particular themes or responses further. The interview schedule was prepared ahead of time using key themes arising from issues prevalent in current research literature.

The key stakeholders were emailed requesting a meeting to provide them with the research proposal and the participant invitation letter (Appendix 3), the aim of the meeting and a brief overview of the study. The scheduling of a time to meet that suited the interviewees and venues were communicated via email with all the interviewees opting to meet in their offices as this was convenient and comfortable for them.

On meeting each key stakeholder, the researcher introduced herself as she was not known to the interviewees and thanked them for agreeing to meet for the interview. Consent for participation and tape recording was obtained before each interview. The interviewer explained the issue of confidentiality and provided a summary of the research and the purpose of the study. The participants were given a copy of the participant invitation letter, and they were asked to sign a consent form (Appendix 4). Participants were encouraged to talk freely and honestly about whatever would come out of the interview and to ask questions for clarification or better understanding when needed.

The researcher sat across from the interviewee and posed introductory questions by asking about the role of the participant at Rhodes University to make the participant feel comfortable, before asking more abstract questions later. All the interviews were initiated with the same question: 'What is workplace health promotion and what does this mean to you?' Following this general question, the researcher asked the participant about his/her opinion of what workplace health promotion was and what it involves gaining understanding of his/her impression of workplace health promotion and to know more about the participant's perceived role in promoting healthy behaviours at the workplace. The role of the researcher was to moderate the discussion, encouraging participants to talk, prompting the discussion in appropriate directions to ensure all issues were covered, and changing the direction of the discussion when a point was felt to have been sufficiently covered. She also used probing questions to verify her interpretations of answers. The following open-ended questions allowed detailed enquiry of previous workplace health promotion programmes, their facilitating and limiting factors, and suggestions for future initiatives. The duration of the interviews varied between 8 and 25 minutes, and they were tape recorded and transcribed verbatim.

#### 3.6.3.1.1 *Semi-structured interview questions*

The SSIs were structured around 8 main questions (Appendix 5). Literature also showed the need to consult both key stakeholders and the staff at the workplace in order to design successful health promotion interventions at the workplace (Griffiths, Maggs, & George, 2007). It was expected that participants of the SSIs and FGDs would reflect their personal opinions on workplace health promotion and on how to improve these initiatives. The participants were asked at the end if they had any other comments or suggestions.

This question gave participants the opportunity to speak up if they did not get a chance to speak during the interviews or discussions. It was also intended to accommodate any after-thoughts.

### **3.6.4 Focus group discussions**

A focus group involves a group discussion of a certain topic or issue that is the 'focus' of the conversation. Focus groups, unlike individual interviews, provide the added dimension of the interactions among members (KENPRO, 2012). Focus group discussions are frequently used to obtain knowledge, perspectives and attitudes of people about issues, and seek explanations for behaviours in a way that would be less easily accessible in responses to direct questions, as in one-to-one interviews, and have the potential to allow a wide range of responses to be collected (McLafferty, 2004). The contemporary focus group interview generally involves 8 to 12 individuals who discuss a particular topic under the direction of a professional moderator, who uses a moderator guide to lead the discussion (Pickering & Watts, 2016) and promotes interaction and assures that the discussion remains on the topic of interest (Stewart & Shamdasani, 1998). Comments of one participant can generate comments from other participants. Ideas and opinions can be developed and explored more so than in individual interviews (ERNWACA, 2017). The group should not be so large as to preclude adequate participation by most members nor should it be so small that it fails to provide significantly greater coverage than that of an individual interview (Wong, 2008). The facilitator must ensure even participation, careful wording of the key questions, maintaining a neutral attitude and appearance, and summarising the session to reflect the opinions evenly and fairly (Krueger, 2003).

Group members in a focus group may be homogeneous along some dimensions, and heterogeneous along others. Some diversity in the composition of the group may enhance discussion. However, a very heterogeneous group can be threatening to participants and can inhibit disclosure. On the other hand, homogeneity within the group may help to capitalize on the participants' shared experiences, as they are more likely to talk freely and share experiences if they feel they have a lot in common (Wong, 2008). The ideal is, therefore, a point of balance between the two extremes of heterogeneity and homogeneity (Morgan, 1997).

#### **3.6.4.1 Focus group discussions with peer educators**

After identifying the peer educators, they were conducted via telephone with the researcher introducing herself and providing information on the purpose of the call. Scheduling of meeting time and venue was discussed over the phone with the peer educators opting to meet during their lunch time and agreed to meet in the central part of campus.

When the meeting was conducted, the researcher introduced herself by providing information on what she was doing at Rhodes University and provided a brief overview of the study. She also handed out participant invitation letters and consent forms. The peer educators were thanked for coming and the researcher reviewed the purpose of the group and the goals of the meeting and the project by outlining its objectives and its purposes. The researcher explained again the contents of the invitation letter and that information provided will remain confidential. She also explained that participation in the project was voluntary and not forced and participants were free to pull out of the study if they were uncomfortable at any point. The participants were then asked to sign the consent forms.

The researcher encouraged open participation and discussed how the meeting will proceed and promoted honesty by telling the peer educators that all opinions will be respected and not judged even if they opposed others. Participants were told that they were free to ask any questions if needed and the participants were made aware that the FGDs were being recorded. General ground rules were set that included giving each speaker a fair chance to participate in the discussion and to not have people speaking over each other. A question guide (Appendix 6) was used as a guide and when the discussion changed course and went off topic, the researcher politely steered participants back on topic. The researcher asked broad questions to elicit responses and generate discussion among the participants. To make sure that all opinions on that question had a chance to be heard, the researcher would summarize what she thought had been said and asked if the group agreed. She also phrased the same question differently at times, asked follow-up questions and also probed those who would not have participated.

### **3.6.5 Effective interviewer strategies**

Specific strategies for success in interviews emerged in three overarching thematic areas: 1) cultivating rapport and maintaining connection, 2) demonstrating responsiveness to interviewee content and concerns, and 3) communicating regard for the interviewees and their contributions (Drabble, Trocki, Salcedo, Walker, & Korcha, 2016).

#### **3.6.5.1 Cultivating rapport and maintaining connection**

This was critical to engaging interviewees and to maintaining a productive interviewer-interviewee relationship. Specific strategies identified in this general area included being friendly and personable through informal conversational exchanges, providing orienting statements to help guide the participants through the interview, and providing occasional reciprocal information.

Informal conversational exchanges - this included small talk before the start of the interview to put the interviewee at ease, friendly conversational exchanges, and the use of humour (light comments, laughter, and joking exchanges).

#### **3.6.5.2 Demonstrating responsiveness to interviewee content and concerns**

These strategies were also important to create a safe and empathetic interview environment. Specific strategies in this area included active listening, supportive vocalizations, and validation and clarification exchanges.

Active listening - this strategy included using of reflective and summary statements as well as follow-up questions specific to interviewee content. For example, the following reflective statement was followed by an interviewee-specific probe:

Supportive vocalizations - these vocalizations included encouraging tones, encouraging words, and non-language encouragement such as the following: “sure,” “right,” “yeah,” “I know what you mean,” “mm-hmm,” “wow,” “okay” “I see,” and “interesting.”



Validation and clarification exchanges - these exchanges involved the interviewer checking to ensure accuracy and understanding, responding to interviewee requests for clarification about questions, and reassuring interviewees about the content and quality of their responses.

### **3.6.5.3 Communicating regard for the interviewee and her contribution**

This involved *acknowledgement of disclosure* and *statements of appreciation*. For example, interviewers frequently expressed appreciation for disclosure of personal information, particularly in response to sensitive questions, exemplified by the following exchange. Interviewers also demonstrated *respectful attention* by maintaining an accepting, non-judgmental tone. Respect and positive regard were often communicated through simple affirming statements.

## **3.6.6 Phase 2: Educational Phase**

### **3.6.6.1 Development of the HILs**

Internet searches were used to identify already existing HILs on the harmful use of alcohol. HILs applicable to the harmful use of alcohol and were available in English were selected, considering copyright notices and disclaimers. The resources (Alcohol.org.nz, 2017; Drabble et al., 2016; GHNHSFT, 2017; NHS, 2012, g9graphics, 2014; Pacific adolescent health and development, 2011) found were used to design the first drafts of three HILs also guided by the WHO factsheet on alcohol (WHO, 2015a). The HILs underwent a series of evaluations for readability, suitability, and acceptability. More in-depth information on the development, design, and evaluation processes of the HILs is in Chapter 4.

### **3.6.6.2 Implementation phase**

The educational intervention was where the peer educators were provided with more information on the harmful use of alcohol, followed by the development and design of the HILs. In this phase of the study, the intervention was implemented through workshops, where peer educators were trained on selected topics using the draft HILs and Trainer's manuals. The researcher recorded the workshop proceedings, took down key notes when able to do so and also directly observed the participants during the workshops.

## **3.6.7 Workshops**

A workshop is a single, short educational programme designed to teach or introduce to participants practical skills, techniques, or ideas which they can then use in their work or their daily lives (Community tool box, 2017). Workshops provide opportunities for discussion and interaction, often in smaller groups, sometimes from a few hours to days; they are structured to produce active participation in learning. They can permit the use of interactive teaching methods (e.g. student presentations, small group work, role-play) to help participants to develop their knowledge and skills and get feedback (Tiberius & Silver, 2001).

A workshop was chosen for use in this project because it provides a way to create an intensive educational experience in a short amount of time. It was difficult to get all the peer educators at a time convenient for them because they may be working, or they may be too far apart to gather together regularly. A workshop was done before the university term opened and after being given permission by their supervisors and head of department. A workshop was also conducted to help create a sense of community.

A series of workshops was conducted as part of the training for the peer educators. Workshops were used as a participatory and interactive teaching and learning platform. The purpose of the workshops was to further stress the written information presented in the HILs and Training manual as well as to demonstrate to the peer educators and to mentor them on how to convey this health information to the rest of the support staff members. The workshops also served as a platform where feedback on these learning sessions was obtained.

In preparation for the workshops, the relevant facilitators were contacted before the workshop, dates were agreed on and times set, and the details were confirmed before each workshop. The researcher also booked and secured venues for the inauguration and where the workshop was to be conducted. All members of the peer educators were then notified of the workshop date and the venue. Reminders were also sent to the participants via text message the day before the workshop. The day before the workshop, the researcher made sure that the necessary resources were prepared and ready, for instance, printing the health information leaflets, availability of stationery and paper for note taking, badges, paper boards and white board sheets. The researcher arrived at the venue timeously in order to arrange to lay out the materials required for each session and check if the projector and computer were working.

The supervisor organised for top management and key stakeholder support for participation in the 4-day workshop. This also allowed for the peer educators to get time off work to attend the workshop. The workshop was inaugurated by the Vice Chancellor and was attended by the majority of the support staff, more than 1000 of the entire 1500 that exist at Rhodes University. The four-day health promotion programme workshop was conducted to improve the end-user suitability, information retention and recall and also application of the information when engaging with the rest of the support staff.

**Table 11: Workshop programme**

Day	Time, Facilitator and Topic		
	AM1	AM2	PM
<b>Monday</b>	Inauguration by the Vice chancellor, Pharmacy Dean, Head of Catering, Business School lecturer, Wellness officer, researcher (supervisor)	Retired nurse DoH– <i>Overview of NCDs</i>	Lecturer (Rhodes Business School) – <i>Culture, myths, stigma and awareness.</i>
<b>Tuesday</b>	Researcher (Tobacco project)	Role play + discussion	Human resources manager – <i>Staff wellness</i> Community Engagement Director – <i>The Golden circle</i>
<b>Wednesday</b>	Counselling psychologist – <i>Alcohol abuse</i>	Researcher presentation, role play + discussion – <i>Harmful use of alcohol</i>	Residential operations manager – <i>Finding your purpose</i>

<b>Thursday</b>	Health suite representative – <i>Healthy diet and physical activity</i> . HKE	Retired nurse DoH – <i>Physical activity and heart healthy diet</i>	Head nurse from HCC, Business School lecturer, Wellness officer
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The Vice chancellor (VC) opened the workshop with over 200 support staff attending the inauguration. The VC opened with a Xhosa cultural song and the support staff joined in engaging the audience. The workshop was held over four days with two morning sessions (AM1 and AM2) with a tea break in between and an afternoon session (PM2) that was done after lunch.

Before the workshops began, a questionnaire: pre-, post- and post-post intervention questionnaire (Appendix 7) was given to participants to complete. The questionnaire was given before (Pre-intervention) the workshop began, immediately after the workshop (Post-intervention) and three months (Post-post-intervention) after the workshop was conducted. The purpose of the questionnaire was to determine the knowledge and understanding of the harmful use of alcohol and its effects before the intervention had been carried out. The questionnaire contained open-ended questions, closed-ended questions, in the form of multiple choice, and true/false questions and a translator was present who translated the questions into isiXhosa and answered any questions for the convenience of the peer educators. The purpose of the questionnaire was explained to the participants. The same questionnaire was given to the peer educators after the workshops had been completed to allow a direct comparison of performance before and after the intervention. A paired student t-test was conducted using the online tool available on <https://www.mathportal.org/calculators/statistics-calculator/t-test-calculator.php> to compare the before and after scores.

Workshops were conducted in a flexible manner. Everyone was seated most of the time whilst the facilitator was standing. The participants were given the facilitator’s manual before the workshops began. The facilitators ensured that everyone participated in the discussion as much as possible, so as to allow for everyone’s opinions and ideas to be heard. Participatory learning methods were used during the workshops, such as role plays (e.g. communication skills section), demonstrations (e.g. what happens when a person drinks), scenario discussions, videos and reflections. All questions that participants may have had were answered. A few minutes were put aside for some teach-back sessions amongst peers.

**3.6.7.1 Sessions**

**3.6.7.1.1 Overview of NCDs**

This session was run by the retired nurse from the Department of Health who presented an overview of the NCDs and risk factors (use of alcohol, tobacco, unhealthy diets and lack of physical activity). As this was introductory, general rules and expectations were laid down. The specific focus of this session was on disease prevention, anatomy of the body and showing that people are responsible for their own health. The nurse used illustrations to make the session more interactive and more memorable. She used an example of the body as a car (for example servicing a car being going for check-ups regularly, engine as the heart, petrol or diesel as a choice of what you eat and drink) as a way of message delivery which was more relatable. The facilitator used a question and answer method which kept the discussion interactive.

#### 3.6.7.1.2 Culture, myths, stigma and awareness

A lecturer from the Rhodes Business School facilitated this session. She used pictures and illustrations and invited small groups of about five people each to write and discuss their opinions and feelings when they saw the slide, and if it was culturally acceptable. After this, a discussion with all the participants was carried out. The aim of this session was for the participants to know when it is a myth or stereotype, realize the role of culture in unhealthy practices and ways of breaking barriers (age, cultural).

#### 3.6.7.1.3 Tobacco project

The researcher running a parallel tobacco project facilitated this session. It included the organs affected by tobacco, and the health effects of smoking including a video showing an experiment on the effect of tar on the airways. The facilitator also encouraged breaking barriers in interventions and identifying root problems that may lead to people smoking. An intervention role play was done in groups of five each and discussions followed after that.

#### 3.6.7.1.4 Staff wellness

The representative from Human Resources gave a session that aimed to make the peer educators aware of the University's Wellness Strategy Framework and the wellness calendar. The facilitator expanded on the different pillars of the framework including physical, social, emotional and spiritual wellness and the different facilities, structures and programmes available to help in ensuring wellness at the university (Counselling Centre and HCC). He also covered the roles of peer educators, encouraged their work and how the Human Resources Department is ready to assist in the peer educating programme.

#### 3.6.7.1.5 The Golden circle – Simon Sinek

The community engagement director led this session. This session was interactive and showed how the Golden circle can be applied in different circumstances including how to deal with conflict, alcohol abuse and ways to tackle these problems.

#### 3.6.7.1.6 Harmful use of alcohol workshop

The counselling psychologist facilitated the first session before the tea break. He addressed some of the reasons why people drink and the underlying factors that result from alcohol abuse. The facilitator emphasised the importance of harm reduction and steps one can take to overcome addiction and alcoholism. The facilitator stressed the importance of small steps (encouraging small changes) and not to stigmatize.

This session was facilitated by the researcher. A slide show on the harmful use of alcohol was used to aid in explanation.

#### Activities

1. A volunteer was asked to write his/her name on the white board sheets available, and then the participant was turned around in circles ten times and asked to rewrite his/her name again. This was to show how coordination is affected after a person drinks alcohol.
2. A human body outline was drawn, and participants were asked to list the effects of alcohol use. This activity was to show how alcohol use can affect every organ in the body.

3. To help explain what a unit of alcohol was, the facilitator brought different wine glasses, beer cans and shot glasses to show what a unit is and recommended limits.

A video was played for the peer educators to show what happens when people drink during pregnancy and its effect. This led to a discussion.

### ***Role play***

The peer educators broke into groups of three where one person had to record what worked and what did not work during the intervention. After role play, the groups shared their findings.

### **Know your purpose**

The residential operations manager used a stick that was passed around, where each person had to say what they wished to do as peer educators. This session aimed to encourage the peer educators on the work that they are doing and for them to discover that it can help someone.

### **Healthy diet and physical activity**

This session was facilitated by a lecturer from HKE and a representative from the Health suite. The purpose of this session was to provide information on how diet and physical activity can help prevent diseases and aid in managing already existing chronic diseases. The benefits of regular physical activity were covered in this session and also a discussion on why people may not exercise.

### **Know your numbers**

The Head nurse at the HCC spoke on the importance of getting vital signs checked regularly. The nurse encouraged prevention of NCDs by addressing the risk factors and steps to take to live a healthier life. She then made a stand with other professional nurses to measure the blood pressure, blood glucose level, weight and BMI of those willing to participate in this.

### **Final session**

The wellness officer gave final remarks summarizing what had been covered in the workshop and thanked the peer educators for their participation. The peer educators provided feedback.

#### **3.6.8 Collaboration with Drama Department**

The principal supervisor approached a lecturer from the Drama Department in several meetings to work collaboratively in a workshop to address alcohol abuse, until the lecturer and five Honours students agreed to take part in the project. The three HILs were supplied and this was used to guide the main themes to come out of the workshop.

A pilot study was carried out with four pharmacy students and four support staff from the Pharmacy building and then done in two short peer educator workshops with four peer educators then six peer educators collaborating in the alcohol workplace health promotion project. The participants were informed of the

purpose of the project; potential risks or discomforts; potential benefits; confidentiality; participation and withdrawal. These workshops aimed to use drama as a mechanism to stimulate awareness and communication, and to educate the peer educators on the harmful use of alcohol. The information gained would therefore also be used when reaching out to the rest of the support staff.

## **Activities**

### **Ice breaker**

1. Participants were asked to move one leg in circular motion and try to write down their name in the air with their hand.
2. The 'name and action' game – Each participant had to say their name with an action depending on how they were feeling that day and everyone had to repeat that action. This was to get everyone to know each other. The participants could speak in whatever language they were comfortable in because two of the drama students could understand the local language.

### **Monologue**

1. A monologue done in English: A character of a 19 year old university student who is under pressure with school, life and also struggling to define herself. This student decides to turn to alcohol because of the stress she is under. She goes out each night to 'drown her sorrows' and is convinced this is a good choice for herself. She did not think she had a drinking problem because she functions properly.
2. A monologue done in IsiXhosa: A character of a single father struggling to take care of his daughter. He decides to turn to alcohol when the stress of being a single father gets too much for him. He did not think he had a drinking problem.

After these monologues participants went into discussion about the performances and were free to ask the characters any questions they might have had.

### **Poster on alcohol effects**

The group was divided into two and wrote on a poster with an outline of the human body. The two posters were brought together followed by a comparison and discussion of the answers and conditions listed.

### **Roleplay (Health and Safety meeting)**

Participants had to choose any person they wanted to be at the university. Participants chose – Professional nurse at the Health Care Centre; support staff at Rhodes University including a cook; a professor from the Drama Department; peer educator; hall representative; lecturer from Business School; Union leader representative; security guard from Campus Protection Unit (CPU).

During the Health and Safety meeting the security guard starts sleeping and the attendants notice that he is drunk. They decide to come up with ways of helping him to overcome his alcohol problem. After waking him up, and have an intervention.

### **Short play**

This play shows a drunk girl walking back to the residence and a security guard notices her. She trips and falls and then they go on pause. The facilitator asks everyone to take a moment and notice what is going on and invites the participants to place their hand on the security guard's shoulder and say what they think he was thinking at that moment.

### **Reflection**

Revisiting of the poster for reflection based on the new knowledge acquired.

The participants were free to voice what worked and what did not work in the workshop and also other additional comments.

#### **3.6.9 Evaluation**

Evaluation is a set of research methods and associated methodologies with a distinctive purpose. They provide a means to judge actions and activities in terms of values, criteria and standards (Stern, 2005). When one examines and judges accomplishments and effectiveness, one is engaged in evaluation (Rutman, 1977). When this examination of effectiveness is conducted systematically and empirically through careful data collection and thoughtful analysis, one is engaged in evaluation research (Patton, 1990). An evaluation can use quantitative or qualitative data, and this research included both.

Quantitative data provide information that can be counted to answer such questions as "How many?", "Who was involved?", "What were the outcomes?", and "How much did it cost?" Quantitative data can be collected by surveys or questionnaires, pre-tests and post-tests, observations, or review of existing documents and databases (Bakers Field College, 2017). Qualitative data answers such questions as "What is the value added?", "Who was responsible?", and "When did something happen?" Qualitative data are collected through direct or participant observation, interviews, focus groups, and case studies and from written documents. Analyses of qualitative data include examining, comparing and contrasting, and interpreting patterns (CDC, 2015a).

A final FGD, which served as the final project evaluation discussion, was conducted at the end of the project. This FGD was used as a platform for the peer educators and the researcher to evaluate the project and its usefulness in the promotion of responsible use of alcohol. Gaps were also identified, and these were used as recommendations for future research. An FGD question guide (Appendix 8) was used to guide the discussion. All participants were encouraged to share their personal reflections as well as their experiences on things that they now do as a result of this study. These reflections also aided in the evaluation of the usefulness of this study.

### **3.6.9.1 Observational evaluation**

Observational evaluation is way of gathering data by watching behaviour, events, or noting physical characteristics in their natural setting. This technique allows collection of data where and when an event or activity is occurring (CDC, 2008). Observation is an essential element in good teaching and programme development, initiation, programme activities, processes and outcomes (Powell, 1996). Observational evaluation provides contextual information needed to frame the evaluation and make sense of data collected using other methods and can provide good insights into how the different participants are behaving and interacting. Their perceived lack of importance by participants may mean that they would not be picked up by other methods that explore participant perceptions (University of Sheffield, 2017). Those who study human behaviour indicate that there is often a gap between what people say they do and what they actually do, but participants act differently because they are being observed (Krueger, 2017).

Observation was used during different phases of this project.

## **3.7 Data analysis**

The data gathered in the FGDs and SSIs was analysed through a thematic analysis method. Braun and Clarke (2006) define thematic analysis as: "A method for identifying, analysing and reporting patterns within data" (Braun & Clarke, 2006b). The purpose of thematic analysis is to identify patterns of meaning across a dataset that provides an answer to the research question being addressed (University of Auckland, 2017). A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set (Braun & Clarke, 2006a). Themes are identified by "bringing together components or fragments of ideas or experiences, which often are meaningless when viewed alone" (Aronson, 1995).



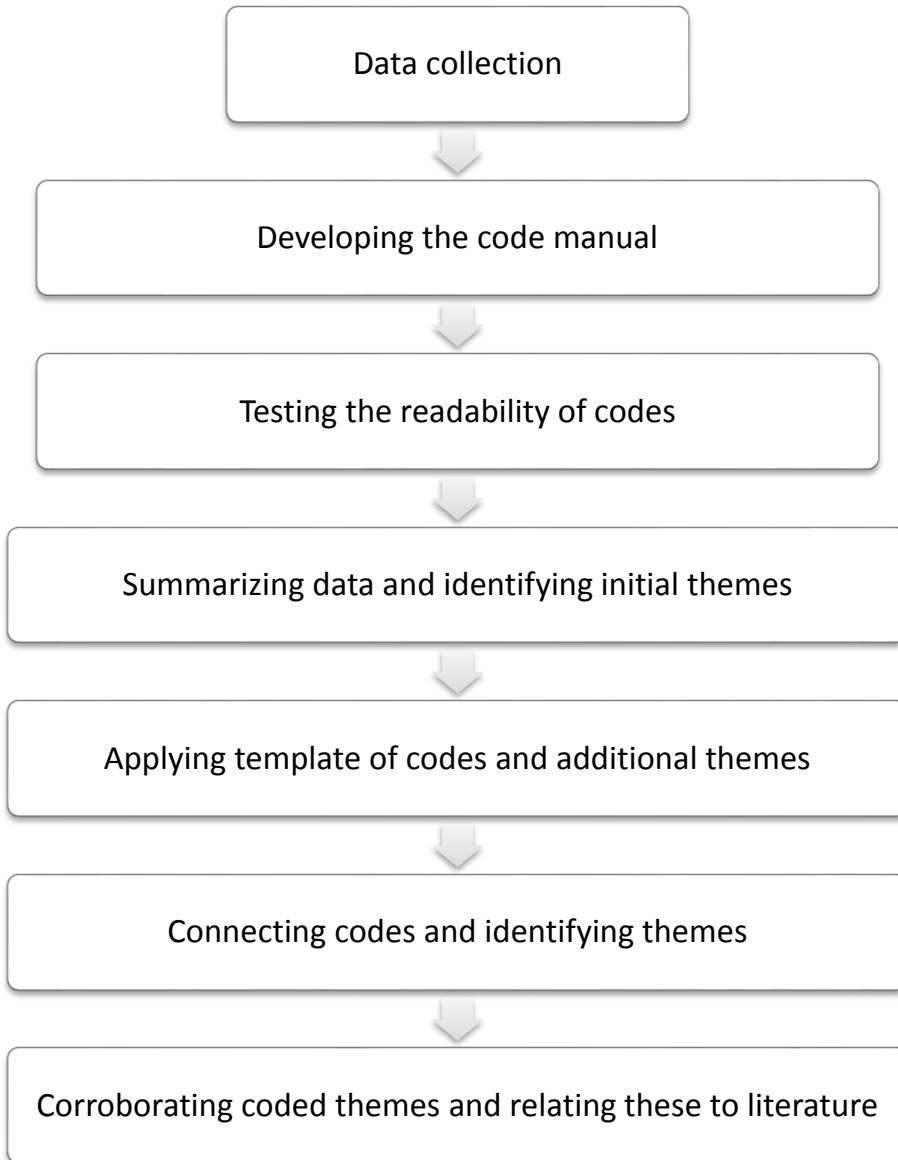


Figure 6: Diagrammatic representation of the stages undertaken to code the data

One of the aims of the FGDs and SSIs was to capture major themes or insights. The interviewer listened to all the audio recordings transcribed from the SSIs and FGDs. The transcripts were entered into QSR Nvivo ® 10, a computer software package. All data were examined line-by-line, and the main categories and themes were identified and coded using thematic analysis and constant comparison of the data. The data was coded, checked and discussed.

### **Organising and preparing data for analysis**

NVivo ® 10, data management computer software (QSR International, 2016) was used in this study. The voice recordings of the SSIs and FGDs were transcribed verbatim from audio recordings to create a textual record for the researcher. These transcriptions were imported into and saved in NVivo ® 10.

## **Developing the code manual**

The codes were developed from theory and reading the data. From the transcribed conversations, patterns of experiences can be listed. The choice of a code manual for the study was important, because it served as a data management tool for organising segments of similar or related text to assist in interpretation. The use of a template provided a clear trail of evidence for the credibility of the study.

## **Summarizing data and identifying initial themes**

The next step was to identify all data that relate to the already classified patterns. This process involves reading, listening to, and summarizing the raw data. The researcher used this technique as a first step when analysing each transcript of the focus groups.

The researcher summarized the transcripts separately by outlining the key points made by participants (noting individual and group comments) in response to the questions asked by the facilitator. These key questions formed the framework for the semi structured interviews.

It is important to note that a content analysis was not the aim of the data analysis, and, consequently, a single comment was considered as important as those that were repeated or agreed on by others within the group. The summary for each focus group reflected the initial processing of the information by the researcher and provided the opportunity to sense and take note of potential themes in the raw data.

## **Applying template of codes and additional coding**

The next step to a thematic analysis is to combine and catalogue related patterns into sub-themes. Using the template analytic technique (Crabtree & Miller, 1992), the researcher applied the codes from the codebook to the text with the intent of identifying meaningful units of text. The transcripts and organisational documents had previously been entered as project documents into the N-Vivo computerized data management programme. The codes developed for the manual were entered as nodes, and the researcher coded the text by matching the codes with segments of data selected as representative of the code. The segments of text were then sorted, and a process of data retrieval organised the codes or clustered codes for each project document across all three sets of data.

Analysis of the text at this stage was guided, but not confined, by the preliminary codes. During the coding of transcripts, inductive codes were assigned to segments of data that described a new theme observed in the text. These additional codes were either separate from the predetermined codes or they expanded a code. Groups of coded data are referred to as nodes in NVivo ® 10 (QSR International, 2016). Examples of the initial codes were: benefits of WHP, facilitating factors and limiting factors.

## **Connecting the codes and identifying theme**

Connecting codes is the process of discovering themes and patterns in the data (Crabtree & Miller, 1992). The coding process was done through connecting the codes and identifying themes across the sets of data, clustered under headings that directly relate to the research questions.

### **Corroborating and legitimating coded themes**

The final stage illustrates the process of further clustering the themes that were previously identified from the coded text. Corroborating is the term used to describe the process of confirming the findings (Crabtree & Miller, 1992). At this stage, the previous stages were closely scrutinized to ensure that the clustered themes were representative of the initial data analysis and assigned codes. The interaction of text, codes, and themes in this study involved several iterations before the analysis proceeded to an interpretive phase in which the units were connected into an explanatory framework consistent with the text. Themes were then further clustered and were assigned succinct phrases to describe the meaning that underpinned the theme.

### **3.8 Ensuring research quality and accuracy**

Both quantitative and qualitative studies require that the work is rigorous, accurate, ethical and authentic (Leung, 2015). In quantitative studies, researchers take into consideration the reliability, objectivity and validity rather than qualitative studies where researchers consider dependability, credibility, transferability and confirmability as trustworthiness criteria for qualitative investigation (Anney, 2014). The data collected are usually then analysed by the person who collected the data, leading to the likelihood of subjectivity and bias (Muhammad & Closs, 2015). The researcher aimed to gather an authentic understanding of participants' responses. Assessing the reliability of study findings requires researchers and health professionals to make judgements about the 'soundness' of the research in relation to the application and appropriateness of the methods undertaken and the integrity of the final conclusions (Sandelowski, 1993).

Some techniques employed by the researcher to solve problems of reliability and validity include:

- Testing hypotheses in data analysis
- Using computer programmes to assist qualitative data analysis, thus ensuring systematic analysis of representative instances of data
- Recording data objectively and comprehensibly, including the use of audiotapes in the transcription of data
- 'looking reflexively back' (Fairclough, 2001) to see that we conducted our study with care and purpose and that we interpreted our data correctly. Reflexivity is an attitude of attending systematically to the context of knowledge construction, especially with regard to the effect of the researcher, at every step of the research process. In this research peer review and debriefing were used to assist the researcher to uncover assumptions. For example, the first drafts of the HILs had language that was difficult to read for our target audience. FGD with peer educators also helped to identify some cultural aspects that the researcher was not aware of.

### 3.9 Reliability and validity of the study findings in quantitative studies

The use of reliability and validity are common in quantitative research. Reliability in quantitative studies is the extent to which a research instrument consistently has the same results if used in the same situation on different occasions (Heale & Twycross, 2015). Charles (1995) adheres to the notion that consistency with which questionnaire [test] items are answered, or individual's scores remain relatively the same can be determined through the test-retest method at two different times. This attribute of the instrument is actually referred to as stability. If we are dealing with a stable measure, then the results should be similar. A high degree of stability indicates a high degree of reliability, which means the results are repeatable.

Validity is the extent to which a concept is accurately measured in quantitative studies. It refers to the strength of the conclusions that are drawn from the results. In other words, how accurate are the results? Do the results actually measure what was intended to be measured? (CIRT, 2017). There are several types of validity that are commonly examined, and they are as follows:

- Conclusion validity looks at whether or not there is a relationship between the variable and the observed outcome.
- Internal validity considers whether or not that relationship may be causal in nature.
- Construct validity refers to whether or not the operational definition of a variable actually reflects the meaning of the concept. In other words, it is an attempt to generalize the treatment and outcomes to a broader concept.
- External validity is the ability to generalize the results to another setting.

### 3.10 Credibility of the study findings in qualitative research

Trustworthiness has been divided into four categories: credibility, which corresponds roughly with the positivist concept of internal validity; dependability, which relates more to reliability; transferability, which is a form of external validity; and confirmability, which is largely an issue of presentation (Bengtsson, 2016). With such a diversity of approaches, no single method can guarantee that the study will achieve "trustworthiness" (Campbell & Machado, 2013).

#### 3.10.1 Credibility

Credibility (internal validity) is involved in establishing that the results of the **research** are believable (Trochim, 2006). Are particular findings truthful? (Hartley & Sturm, 1997). Assessing the reliability of study findings requires researchers and health professionals to make judgements about the 'soundness' of the research in relation to the application and appropriateness of the methods undertaken and the integrity of the final conclusions (Noble & Smith, 2015). This was enhanced through the following methods explained below

- Prolonged engagement – stay in the field until data saturation is reached.
- Persistent observations - is a technique which ensures depth of experience and understanding in addition to the broad scope encouraged through prolonged engagement. To be persistent, the inquirer must explore details of the phenomena under study to a deep enough level that he or she can decide what is important and what is irrelevant and focus on the most relevant aspects (Lincoln & Guba, 1985).

- Peer debriefing - Peer debriefing allows a peer to review and assess transcripts, emerging categories from those transcripts, and the final report. In addition, a peer acts as a sort of critical detective or auditor (Ritzer, 2007). In this research peer assessment was conducted to detect whether or not the researcher has over-emphasised a point, or missed a rival legitimate hypothesis, under-emphasised a point, and in general did a careful reading of the data and the final report.
- Member checks - Consensual validation may be sought through discussion with the participants at emerging, draft and final stages (Gentium Consulting, 2017). The researcher would go to the source of the information and check both the data and the interpretation at different stages of HIL design.
- Independent analysis of data by more than one analyst, and triangulation of data (documents, interviews, focus groups) will enhance credibility.
- Triangulation

### 3.10.1.1 Triangulation

Triangulation is a way of confirming new information over the course of data collection. It usually includes seeking multiple and different information sources or using different data collection techniques to obtain the information about the same phenomenon (Muhammad & Closs, 2015). Triangulation should not be seen as a tool to check the validity of data and labelling data as “true” or false” but to ascertain the validity of the inferences derived from multiple data sources (Long & Johnson, 2000). In this study; document analysis, SSIs and FGDs were used to investigate past health promotion initiatives and policies, facilitating and limiting factors of WHPPs.

### 3.10.2 Confirmability

To achieve confirmability, researchers must take steps to demonstrate that findings emerge from the data and not their own predispositions (Shenton, 2004). To ensure the confirmability the following methods were employed by the researcher:

- Including multiple investigators - data will be checked and re-checked by both researchers; and the search for negative instances and disconfirming examples will be incorporated into analysis (Gentium Consulting, 2017). This can foster dialogue, lead to the development of complementary as well as divergent understandings of a study situation and provide a context in which researchers' - often hidden beliefs, values, perspectives and assumptions can be revealed and contested (RWJF, 2008a). In this study emerging themes were discussed with research team members with expertise in research in an open process where assumptions could be confronted and an agreement reached.
- Availability of raw data – recorded audio tapes and field notes for the SSIs, FGDs and workshop, and transcription allow for repeated revisiting of the data to check emerging themes.
- Use of verbatim extracts to make judgements on whether the final themes are true to participants' accounts.
- Availability of an audit trail.

### 3.10.3 Transferability

Transferability (external validity): How applicable are the research findings to another setting or group? (Hartley & Sturm, 1997). To allow transferability, the researcher provides a thick description and collects

sufficiently detailed descriptions of data in context to allow judgments about transferability to be made by the reader (Shenton, 2004). The researcher provided a transparent and clear description of the research process from initial outline, through to the development of the methods and the results.

### 3.10.4 Dependability

Dependability (reliability) involves accounting for all the changing conditions in whatever is being studied as well as any changes in the design of the study that were needed to get a better understanding of the context (Brown, 2005). Dependability is established using the following strategies: an audit trail, code-recode strategy, stepwise replication and peer examination (Anney, 2014).

- An audit trail strategy involves an examination of the inquiry process and product to validate the data where a researcher accounts for all research decisions and activities to show how data were collected, recorded and analysed (Bowen, 2009). The following documents should be kept for cross-checking the inquiry process: raw data, interview and observational notes, documents and records collected from the field, test scores and others (Lincoln & Guba, 1982).
- Stepwise replication is a qualitative research data evaluation procedure where two or multiple researchers analyse the same data separately and compare the results (Chilisa & Preece, 2005).
- Code-recode strategy - the researcher codes the same data twice by giving at least one or two weeks' gestation period between each coding. The results from the two codings are compared to see if the results are the same or different (Chilisa & Preece, 2005).

### 3.11 Applicability of research

Application of findings to other contexts

- The peer educators can take the knowledge that they acquire during the research period to reach the 1500 support staff and apply this in their communities.
- HILs and charts to be placed at different places around campus including the Health Care Centre so that the information can be accessible.
- A trainer's manual was designed to ensure sustainability of the project even after the researcher has left the University.

### 3.12 Chapter summary

#### Phase 1

- |        |   |
|--------|---|
| Step 1 | Workplace Health Assessment: Obtaining information from RU Human Resources Department based on the current alcohol health promotion policies and interventions at Rhodes University |
| Step 2 | Semi-structured Interviews (SSI) question guide pilot tested. The information collected can be used to make changes to and to improve the questionnaire.                            |

Step 3 SSIs performed on key stakeholders, including representatives from the Human Resources Office at Rhodes University; researchers in Rhodes University working on the responsible use of alcohol; head nurse at Health Care Centre; representative managers of support staff; HIV/AIDS officer and others. These interviews were conducted to acquire information to help identify factors that help and restrict alcohol use by support staff and health promotion.

Step 4 A question guide was designed for use in the focus group discussions in Step 5.

Step 5

- Identified three health pamphlet topics related to alcohol consumption.

Step 6 Ten volunteering staff formed the core group of health promoters identified

## Phase 2

Step 1 Initiating health promotion project by building a team with volunteering peer educators.

Step 2 2a. Three health pamphlets collaboratively designed and tested for readability, content comprehension and culture sensitivity with the support staff and peer educators on the health effects of alcohol consumption. 2b. Translation of the health promotion materials into Afrikaans and isiXhosa.

Step 3 Conducting health promotion workshops using an inclusive approach with the peer educators and support staff

Step 4 A trainer's manual that includes the tested pamphlets was designed collaboratively with the peer educators, which can be used by them in the future when they are interacting with support staff

Step 5 Evaluated the facilitating and constraining factors of the alcohol workplace health promotion programme

## 4 METHOD: Design and evaluation of health information material

### 4.1 Design and evaluation of health information leaflets

#### 4.1.1 Introduction

This chapter gives a background on the use of health information leaflets (HILs) and why they are used in this study. A description on the methods used in designing and evaluating the leaflets is provided. The participants that took part in this WHPP, along with their roles and contributions, are also described.

#### 4.1.2 Background

A HIL was developed to make relevant health material available, accessible, and acceptable to its audience. End user testing of health information ensures that the user can understand the information and make behavioural changes (Sherwood, 2011.). This Community-Based Participatory Research (CBPR) aimed to initiate a culturally sensitive and contextually appropriate workplace health promotion intervention on alcohol abuse for the support staff at Rhodes University by working collaboratively with Rhodes University peer educators.

##### 4.1.2.1 Background of study

The use of HILs was decided in Phase 1, where key stakeholders suggested the use of HILs for communicating health messages. As suggested by Gal and Prigat (2004), initiators (who suggest the development of an HIL) maintain a sense of ownership and can exert some influence over the content of HILs they initiated. The content of the HILs was based on literature and this changed during different stages of leaflet development and making changes based on feedback from the support staff, peer educators and health professionals.

##### 4.1.2.2 Users and contexts of use

The content of HILs is affected by the target audiences and the environment where HILs are deployed. The targets for the HILs were the support staff and in turn their families and people around their community. Their information needs are met in different contexts of use: direct distribution (HILs are designed to be picked by support staff), mediated distribution (HILs are designed to be handed to support staff only after a discussion with a peer educator or a health professional), and distribution within a health campaign (a HIL is one of several education tools to be used, in addition to workshops or community lectures) (Gal & Prigat, 2004).

##### 4.1.2.3 Role players

###### **The researcher's peers**

The peers that took part in this study are colleagues who are also Master of Pharmacy candidates working on similar health promotion projects under the same supervisor. They evaluated the HILs by providing formative feedback during their development. The researcher's peers helped improve clarity and helped the researcher to identify errors she may have overlook as well as offered ideas on how to improve the HILs to make them more readable and suitable to the target audience.

###### **Other health professionals**



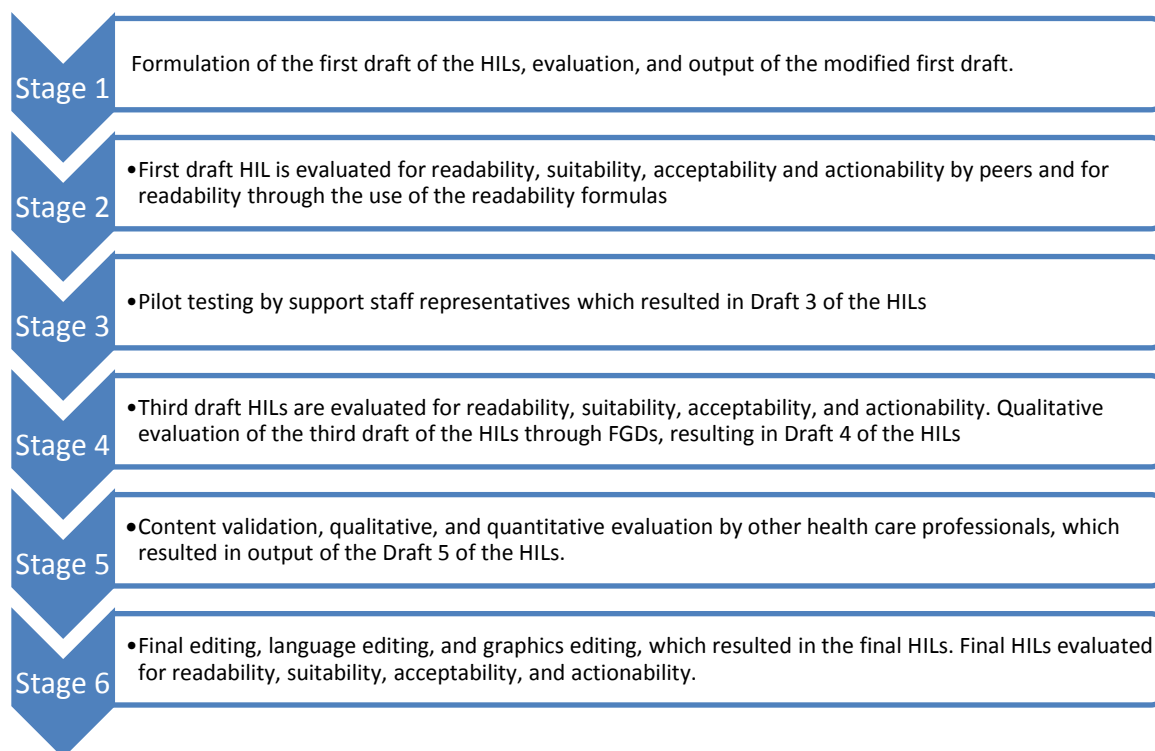
Nurses at HCC and a research associate in the National Drug Institute provided feedback on the HILs to reduce medical errors, provide feedback on the accuracy of the information and if the material provided was current.

### Language editor

The HILs were also language edited to check for grammar, punctuation and spelling to ensure the work was written in correct English.

## 4.2 Brief overview of the study

The educational health promotion phase of the study consisted of four main stages.



## 4.3 Conceptualisation of the HILs

### 4.3.1 Work flow and content decisions

The development progresses through two general stages, i.e. initial planning and drafting followed by revision of preliminary drafts, and requires many choices regarding parameters such as the topics to be covered, writing style (e.g. factual, appeal to fear) or the balance of text, graphical and pictorial elements.

### 4.3.2 Users and contexts of use

The eventual length and content of the HIL emerged through a dynamic process that required resolution of tensions between multiple inputs (e.g. existing materials, and suggestions from support staff, experts, managers, collaborating peer educators), and available time and resources. The developer needs to be able

to negotiate conflicting demands and consolidate the various inputs into a coherent whole through the revision stages (Gal & Prigat, 2004).

#### 4.3.3 Readability-related considerations

Documents created must be readable, keep leaflets reasonably short, avoid heavy technical jargon, or use logical text organisation or a question and answer structure to maintain readers' interest, help navigation and improve recall. Informants referred to the need to be sensitive to cultural aspects of specific populations.

#### 4.3.4 Formulation of the HILs

One of the objectives of Phase 2 of this study was to design and evaluate three HILs containing information on harmful use of alcohol. Guidelines for designing health related information were obtained from the literature review and were referred to at all stages of designing the HILs. The initial design of the HILs was formulated by the researcher using templates in Microsoft® Publisher software. HILs were designed in English and were to be later translated into Afrikaans and IsiXhosa.

#### 4.3.5 Literature based sources

Internet searches were used to identify existing HILs (g9graphics, 2014; Pacific adolescent health and development, 2011) on the harmful use of alcohol. Available HILs in English pertaining to the harmful use of alcohol were selected and copyright notices and disclaimers were taken into consideration. These resources together with the WHO factsheet on alcohol were used to design the first draft of three HILs (WHO, 2016c).

#### 4.3.6 Content of HILs

The HILs contained information on alcohol abuse and the effects. The HILs were entitled *The Health Consequences of Alcohol Abuse*, *Harmful Use of Alcohol* and *Alcohol in pregnancy and Foetal Alcohol Syndrome*. The table below shows the headings that were included in the HILs

**Table 12: The textual information for each HIL is summarized below**

Title of leaflet	Content summary
Health consequences of alcohol abuse	<ul style="list-style-type: none"> <li>• Alcohol abuse?</li> <li>• Causes of alcohol abuse</li> <li>• Signs and symptoms of alcohol abuse</li> <li>• Short term effects of alcohol</li> <li>• Long term effects of alcohol abuse</li> <li>• A word game at the back of the leaflet to assist in recall of key information.</li> <li>• Information on a national helpline and contacts people to meet for further assistance and support.</li> </ul>
Harmful Use of Alcohol	<ul style="list-style-type: none"> <li>• Effects of alcohol</li> <li>• Health effects of high use of alcohol</li> <li>• Social effects of alcohol</li> <li>• Economic effects of alcohol</li> </ul>

	<ul style="list-style-type: none"> <li>• 'Did you know' section with information on why people drink alcohol, how drinking can affect the drinker's behaviour and also advice to reduce alcohol use.</li> <li>• A word game at the back of the leaflet to assist in recall of key information.</li> <li>• Information on a national helpline and contacts people to meet for further assistance and support.</li> </ul>
Alcohol in pregnancy and foetal alcohol syndrome.	<ul style="list-style-type: none"> <li>• Why do people drink?</li> <li>• Why do some women drink?</li> <li>• Why is drinking alcohol dangerous during pregnancy?</li> <li>• Effects of alcohol on the baby</li> <li>• Foetal alcohol syndrome</li> <li>• Prevent foetal alcohol syndrome (FAS)</li> <li>• A word game at the back of the leaflet to assist in recall of key information.</li> <li>• Information on a national helpline and contacts people to meet for further assistance and support.</li> </ul>

The HILs also included pictures and photographs to augment and highlight the written text.

**4.3.7 Format and languages used in the HILs**

The format of the HILs is a double-sided, A4 size paper, three-fold brochure (six columns in total) in the landscape orientation. The cover panel consisted of the title and cover art of the HIL. The main information was on the four inside panels, including the folded over back panel. The back panel consisted of an activity related to the HIL information, and acknowledgements. For *The Health Consequences of Alcohol Abuse* HIL, the headings were in bold font and Rockwell condensed font size 22. The accompanying information was in Rockwell font size 12. For the *Harmful Use of Alcohol* HIL the headings were in bold font and century schoolbook font size 14. The accompanying information was in century schoolbook font size 14. The *Alcohol in pregnancy and Foetal Alcohol Syndrome* HIL the headings were in bold font and Tw Cen MT font size 14. The accompanying information was in Verdana font size 12.

**4.4 Evaluation of the HILs**

Readability and suitability tools were used to evaluate the HILs, which included the use of design assessment tools, readability tests, pilot testing and FGDs. Different evaluation tools are important, but they have both strengths and limitations, and it is often recommended that more than one method be used for evaluation in order to increase the validity of the results (Badarudeen & Sabharwal, 2010b).

#### 4.4.1 Evaluation of the design and layout of the HILs

The HILs went through a series of design and layout evaluation by the researcher and other postgraduate peers. Formal evaluations through pilot testing using a self-administered questionnaire to a small sample of the support staff and focus group discussions were carried out with the peer educators. Formative feedback was also received from healthcare professionals. During these processes, participants were encouraged to share both the positive and negative aspects of the HILs' design and layout for the researcher to improve and make changes to the HILs, so that they were more suitable and readable for the end users.

##### 4.4.1.1 Suitability tests

Suitability is a literacy tool designed to evaluate the appropriateness of written material and measures how well the material can be understood and accepted by the reader. The Suitability Assessment of Materials (SAM) (Appendix 9) and the Patient Education Materials Assessment Tool (PEMAT) (Appendix 10) were used to evaluate the suitability in this study. The SAM instrument offers a systematic method to objectively assess the suitability of health information materials for a particular audience in a short time (University of Maryland, n.d.). The SAM can be used to identify specific shortcomings that reduce the suitability of materials by allowing rating on factors affecting readability and comprehension of materials being developed (Harvard T.H. Chan School of Public Health, 2010). The SAM considers 20 characteristics that represent five factors: the content of the resource, literacy demand, graphics, layout and typography, learning stimulation and motivation. Each characteristic is given a score of 0 (not suitable), 1 (adequate) or 2 (superior) and factors not relevant to the material being assessed are noted down as N/A (non-applicable) (Vallance, Taylor, & Lavalley, 2008). The SAM score is recorded as a percentage which is calculated by dividing the total SAM score by the total possible score. Percent scores are then grouped into ratings as follows: 0–39% = inadequate; 40–69% = adequate, and 70–100% = superior (Vallance et al., 2008; Weintraub, Maliski, Fink, Choe, & Litwin, 2004).

The Patient Education Materials Assessment Tool (PEMAT) is a systematic method to evaluate and compare the understandability and actionability of patient education materials based on content; word choice and style; use of numbers; organisation; layout and design; use of visual aids (Balakrishnan, Chandy, Hseih, Bui, & Verma, 2016; Shoemaker, Wolf, & Brach, 2014). It is a validated method that helps determine if the target population will be able to understand and act on information (Brega et al., 2015; U.S. Department of Health & Human Services, 2013). There were 36 understandability items (6 topics with 17 items), and 7 actionability items. The final score for understandability and actionability was calculated by dividing the total points with the total possible points, and multiplying the result by 100 giving a percentage value. A high score was interpreted to be easier to understand than a lower score (Balakrishnan et al., 2016). Reading difficulty has been associated with poorer understanding and comprehension of health education material (Davis et al., 2006; Shoemaker et al., 2014).

Suggestions and comments on how to improve the HIL were given: and textual and imagery changes were made to the leaflet to develop the second draft. The PEMAT and SAM do not assess readability; a readability assessment was therefore conducted.

#### **4.4.1.2 Readability tests**

The readability of the HIL was determined using an online readability calculator (available at: <http://www.webpagefx.com/tools/read-able/> ) which performed the following readability tests: Flesch-Kincaid Reading Ease score; Flesch-Kincaid Grade level; Gunning-Fog Score; Coleman-Liau Index; SMOG Index; Automated Readability Index; and the Linsear Write formula. These tests use formulas with variables such as sentence length, number of words, and number of syllables to estimate the average reading grade level required to comprehend the text. The Flesch-Kincaid Reading Ease gave a number between 0 and 100, with a higher score showing that the material was easier to read (Badarudeen & Sabharwal, 2010, 2010b; Graesser, McNamara, Louwerse, & Cai, 2004). The various readability formulas differ considerably, which can lead to significant differences in the reported reading grade level of materials (Wang et al., 2013). Each paragraph was selected and the text was appropriately formatted with bulleted lists, tables and figures removed. The formatted text was then entered into the readability tool, which calculated reading grade level estimates for each formula. The seven readability tests used formulae with variables such as sentence length, the number of words, and the number of syllables to estimate the average reading grade-level required to comprehend the text. These measures each produced a grade-level score indicating the grade at which a person would have to read to comprehend a given document (Brega et al., 2015).

### **4.5 Modifications made to the health information leaflets**

The HILs went through a four-stage process of modification. Each stage and the main role players and/or types of evaluations performed are detailed below:

#### **4.5.1 Pre-testing study**

After conceptualisation of the first draft HILs, changes were made to the first draft of all leaflets following personal observation and peer scrutiny. These changes resulted in the output of the modified first draft HILs, which were used in Stage 2 of the design and development process.

#### **4.5.2 Pilot study**

Convenience sampling was used by approaching five support staff to take part in pilot testing. Support staff volunteers at Rhodes University were approached and given a participant information sheet. The information was worded to motivate participation by explaining the purpose of the study and mentioning that confidentiality and the anonymity of the participants would be observed. The interviewer also explained that the intelligence of the respondent was not being tested and that there were no 'Right' or 'Wrong' answers. Five volunteers signed the consent form to participate in the pilot study. Participants were required to read the HILs and circle any words that they either did not understand or considered difficult for other support staff to understand. The participants responded to a self-administered questionnaire (Appendix 11) to provide demographic details and to rate the acceptability of the information in the HILs in terms of cultural sensitivity. The researcher also captured body language and tone of voice.

After reading the leaflet, structured questions were used to obtain information from the participants regarding their views on and understanding of the text and pictures in the leaflet. The questions which sought to identify the problems associated with the written information are listed below:

**Have the materials been understood?**

**Is there anything offensive or unacceptable in the materials?**

**Comments or suggestions**

**Invitation to respondents to ask any questions**

The pictures were tested one at a time for recognition, familiarity and relevance. The answers provided were analysed. Parts of the leaflet that needed revision were identified, and changes were made to the second draft to produce the third draft.

#### **4.5.3 Group interviews with peer educators**

The HILs were then tested with peer educators to identify problems and find solutions. The third draft of the HILs were given to the peer educators, and they also circled any words that they did not understand or that they thought other support staff might not understand. Hour-long group interviews were conducted with the peer educators during their lunch break. These group discussions were facilitated by the researchers and the responses were noted. Participants sat in a circular arrangement to encourage a free-flowing discussion, as people are unobstructed and can talk directly to each other, with no designated 'leader' position (decreased power relations). The group discussions were led using probing, open-ended questions to encourage full and meaningful responses. The discussions aimed to obtain insights about the peer educators' concerns, beliefs and reactions to the information provided in the HIL and detailed notes were taken for review and analysis including coding and content analysis.

#### **4.5.4 Content validation**

The modified draft HILs were assessed for validity of their content. The nurses were consulted to assess all three HILs. Upon receiving formative feedback from these health professionals, relevant feedback was incorporated into each HIL.

#### **4.5.5 Development of the final leaflet**

The draft HILs were language edited by a professional language editor. Minor grammatical issues were corrected at this stage. The drafts were then sent to a graphic designer, who fixed spatial issues on all HILs. These changes were incorporated and resulted in the final HILs.

Readability, suitability, acceptability, and actionability of the final HILs were evaluated the same way by the reviewers. The results obtained from the online readability tests, PEMAT and SAM checklists were then compared to see if the HILs had improved with regards to readability, suitability, acceptability, and actionability.

Readability tests were done on the final draft of the HILs.

All these processes were carried out to produce a tailored and customized HIL for the target population, the Rhodes University support staff.

**Table 13: Evaluation of the HILs at each stage of development**

<b>Stage</b>	<b>HIL development</b>	<b>HIL evaluation</b>
<b>1</b>	Designing of HILs to form the first draft	Peer review using SAM and PEMAT checklists
<b>2</b>	Second draft	Pilot testing using a self-administered questionnaire
<b>3</b>	Third draft	FGDs with peer educators for formative feedback
<b>4</b>	Fourth draft	Content validation and formative feedback from a drug and substance abuse expert
<b>5</b>	Fifth draft	Language editing Design alterations by graphic designer
<b>6</b>	Final HILs	SAM and PEMAT checklists Readability testing
	Translated HILs	Translation into IsiXhosa and Afrikaans

#### **4.5.6 Document formatting**

Document formatting is another important factor to consider when evaluating the results of a readability formula. With the exception of planned comparisons between formatted and unformatted documents, all samples used in our calculations were unformatted, by removing bulleted lists, headings, titles, figures, and tables. There were differences of up to 4-6 grade levels between unformatted documents and documents (Ham & Allen, 2007).

Bulleted lists provide an example of how formatting may influence readability calculations. When a long list includes many 1-word bullets, it requires decisions to determine whether each bulleted statement (1) should be considered a sentence or if all bulleted items are a part of one sentence, (2) should even be included in sentence counts, and/or (3) should be included in the word counts for calculating reading grade levels. If each bulleted item contains a complete sentence, then questions arise as to whether it should even be used as part of a bulleted list. This is an area open to interpretation and can have major influence (Wang et al., 2013).

## **4.6 Design of the training manual**

### **4.6.1 Evidence-based literature sources**

Literature based sources on alcohol from organisations like WHO, UNICEF and NGOS were gathered. These sources were useful in identifying the kind of information the peer educators may require and finding out how to structure the current alcohol trainer’s manual. Information used included journal articles, internet websites, case-report forms, and books.

#### **4.6.2 Modification of the facilitator's manual**

The draft training manual was given to the peer educators asking them to circle any difficult words, sentences or photos that might be difficult to understand and also to insert any feedback or suggestions in the manual. A FGD was conducted a week after distribution to discuss what changes can be made to improve it. The researcher went through the trainer's manual page by page discussing the content with the peer educators.

Modification of the facilitator's manual was an ongoing process. However, because of the nature of the manual being a health promotion entity, the level of readability of the manual was of utmost importance.

#### **4.6.3 Implementation**

The trainer's manual was used during workshops and the trainer's manual will be printed in colour and distributed to the peer educators.

#### **4.7 Poster**

A poster was designed for distribution around campus using information from the three HILs that had already been tested for readability and suitability.



## 5 RESULTS

### 5.1 Introduction

This chapter summarises the results that were obtained from the SSIs, FGDs, formative feedback, and the workshops detailed in the methodology chapters above. The results are grouped according to the objectives of the study, which are presented in two separate sections: Phase 1 and Phase 2 outcomes. The first phase will present the findings generated from the SSIs and FGDs during the exploratory phase. The reader will then be presented with an analysis of the HILs and trainers' manual development and workshops during the implementation phase.

When the SSIs, FGDs and workshops were carried out, probes were used to solicit responses and discover more information. When more than one question was asked, or when probes were used, the researcher merged the responses. Some of the responses given below have been rephrased to suit the phrasing of the question to provide the reader with a perspective of the answer given. Table 14 is an extract from one of the transcripts.

**Table 14: Extract from a SSI**

R: So what Health Promotion activities have you been part of?

P: We do have workshops with staff members, particularly grade 1-5, and this initiative started by the department of social development. I think one day you recall we had sort of a day whereby they came? But the attendance was so poor.

R: It was. Are there other initiatives?

P: We also started an initiative where we go to each department whereby we talk about alcohol abuse which tends to be a problem at RU.

This will be presented as follows

*"We have had some Health Promotion workshops with staff members, particularly grade 1-5. One of the initiatives was started by the Department of Social Development. Another initiative we started is going to each department and talk about alcohol abuse which is a problem at Rhodes University."* SSI 5 (amended)

### 5.2 Results for Phase 1

#### 5.2.1 Demographics

The demographics of all participants were collected before the commencement of the SSIs and FGDs. These are detailed in the following sub-sections below:

##### 5.2.1.1 Key stakeholders

A total of five key stakeholders were interviewed. Of the five key stakeholders, two were females and three males. All were first language English speakers, except for one, who was a first language IsiXhosa speaker. All held either a diploma, bachelor's degree, or higher qualification.

##### 5.2.1.2 Peer educators for FGDs

A total of ten peer educators participated in the alcohol project (see Table 15 for the demographic characteristics of the sample). Participants ranged in age between 32 and 50. Most participants were first

language English speakers. The level of educational attainment was higher than expected; 50% had completed their Grade 12, with 20% having attended a course. All respondents were Grade 1 to 5 support staff at Rhodes University.

**Table 15: Demographics of peer educators who volunteered for the WHP alcohol project**

	Gender	Age	Role at Rhodes University	Grade
1	Male	42	Cleaner	12
2	Female	42	Cleaner	12
3	Female	50	Cleaner	10
4	Female	49	Sister room attendant	12
5	Female	52	Caterer	11
6	Male	59	Cleaner	10
7	Female	32	Administrative assistant at HCC	12
8	Female	34	Administrative assistant at HCC	12 + National certificate
9	Female	45	Administrative assistant at Residential operations	12 + course
10	Female	48	Grounds and garden	12

### 5.2.2 Themes arising from qualitative data

Themes and specific strategies that emerged in each of these thematic areas are summarized in Table 16 and described with illustrations below. Themes were related to effective interviewer strategies for collection of narrative data

**Table 16: Themes arising from the SSIs and FGDs**

	Codes	Sub-themes	Themes
1.	Overall health and well-being	Staff centred views	View on Workplace Health Promotion
	Taking care of staff members		
	Proactive approach		

	Encouraging behaviour change		
	Empowering staff		
	Healthy workforce	University centred view	
	Cost-benefit		
2.	Health and safety policy	Occupational wellness	Health promotion policies at Rhodes
	Occupational Health and Safety Act		
	Smoking policy	Individual wellness	
	HIV/AIDS policy		
3.	Staff awareness of university policies		Alcohol policy at Rhodes University
	Procedure in alcohol abuse at the workplace		
4.	Human Resources and Counselling Centre	Past initiatives	Availability of any HP projects
	Wellness Department	Current initiatives	
	Health Care Centre		
	Counselling Centre		
	Referrals		
	Interventions by the Human Kinetics and Ergonomics (HKE)		
5.	Increase in productivity	Work centred benefits	Benefits of WHP
	Cost saving		
	Reduced absenteeism		
	Raising awareness	Staff centred benefits	
	Improvement of employees health		
6.	Educate	Increase in knowledge	Suggested approaches for the WHP initiative
	Use of posters		
7.	Empowerment	Staff based approach	Facilitating factors in WHP
	Context specificity		
	Incentives	Facilitator based approach	
	Sensitivity		
	Multi sectoral action	Community based approach	
8.	Frequency of initiatives	Time constraints	Limiting factors to WHP
	Effect of University strikes		
	Denial in alcoholism	Participant limitations	
	Poor attendance		
	Interventions not advertised sufficiently	Facilitators limitations	
9.	Influences from relations and peer pressure	Social factors	Reasons for harmful use of alcohol
	Advertisement		

	Role of culture		
	Practices, myths and beliefs		
	Poverty stricken environments	Economic factors	
	Unemployment		
	Education	Socio-economic factors	
10.	Decreased productivity at the workplace	Economic consequences	Consequences of harmful use of alcohol
	Costs		
	Increased accidents at work		
	Unemployment		
	Losing relations	Social consequences	
	Affects family		
	Diseases	Physical consequences	
	Non-adherence to medicines		
	Death		
11.	Individual willingness	Perceived constraining factors	Expectations of effectiveness of interventions
	Lack of time		
12.	Family		Personal stories
	Individual		

Twelve main themes arose from the SSIs and FGDs. A question guide was used that consisted of open ended questions.

**5.2.2.1 View on workplace health promotion**

Since there are many views of what workplace health promotion entails, it was essential to explore and understand the participants’ understanding of its importance to them and what it should involve. Below are some responses from the participants:

**1. Staff centred view**

**Overall health and well-being**

Workplace health promotion was seen as a concept that looked at engaging and developing the whole person and therefore involved providing information on diseases and disease prevention.

*“We need to promote awareness and speak to people about their health.... Observations with regard to blood pressure, sugar levels, cholesterol, weight, anything to do with health.” SSI2*

**Taking care of staff members**

When describing their understanding of workplace health promotion, the key stakeholders showed the importance for the support staff to maintain their health.

*“My understanding of HP is basically to make sure the welfare and the physical abilities of the staff are maintained...” SSI1*

### **Proactive approach**

*“For me, it means taking a more proactive approach. So instead of waiting until a person is ill, you actually start putting in information and resources out there to help people look after their health, prevent them from getting ill or unwell.” SSI3*

### **Encouraging behaviour change**

Another way of understanding workplace health promotion that emerged from discussions was that it encourages behavioural change in the workplace.

*“They are promotions because you are trying to promote the right way of doing something from something that is wrong. So you are trying to promote to them that.” SSI1*

### **Empowering staff**

The key holders demonstrated that workplace health promotion should provide staff members with the ability and information that in the end empowers them to take care of their own health:

*“The staff members should know about their health and I tend to think that it also helps our employees to stay healthy and become productive in the workplace.” SSI4*

## **2. University centred view**

### **Healthy workforce**

Another opinion that surfaced focused on the productivity at the university. One of the participants mentioned that workplace health promotion would result in healthier employees and therefore higher productivity:

*“At Rhodes specifically, I think it is establishing a healthy workforce that would lead to happier, comfortable and a more productive workforce.” SSI5*

### **Cost benefit**

*“Workplace health promotion can reduce absence due to sickness, therefore this is cost saving because we do not have to get and pay replacements or have a less efficient team.” SSI3*

#### **5.2.2.2 Health promotion policies at Rhodes**

The researcher intended to discover any current health promotion policies in place to learn from established protocols. Some key stakeholders were not aware of any existing health related policies at the university. The participants mentioned a few policies;

### **1. Occupational wellness**

## **Health and Safety policy**

*“In terms of Health promotion, I’m not sure we do have any specific policies promoting health. Certainly, from my perspective we have the health and safety policy, which is still in draft form. That is the response to the occupational health and safety act. So, it’s not specifically focused on health promotion.” SSI3*

## **Occupational Health and Safety Act**

In efforts to provide for the health and safety of everyone at the university, including contractors and others using plant and machinery on campus, and protecting everyone against health and safety hazards that may arise out of work, research and teaching and learning activities, Rhodes University has the OHS Act (Occupational Health and Safety Act, No. 85 of 1993).

*“I run health and safety meetings with the different sub committees at Rhodes University. It’s a requirement of the Occupational Health and Safety Act to have meetings at least every 3 months... I always make it a point of providing a slot for discussion on wellness and health promotion, drawing to the fact that the shift is away from looking at specific illnesses and thinking more in terms of general wellbeing and health promotion.” SSI3*

## **2. Individual wellness**

### **HIV/AIDS policy**

The majority of the patients mentioned the HIV/AIDS policy. There was an HIV/AIDS officer who had been working at the university on issues surrounding HIV/AIDS but from 1 April 2017 the title was changed to Institutional Wellness Officer to cover other health related aspects such as NCDs;

*“...the wellness programme, then there is the HIV/AIDS policy then there is another policy, your health and occupational diseases.” SSI3*

### **Smoking policy**

*“There is a smoking policy.” SSI5*

#### **5.2.2.3 Alcohol policy at Rhodes University**

The respondents stated that an alcohol policy existed for the staff at Rhodes University.

### **Staff awareness of university policies**

One participant mentioned that the majority of the support staff were not aware of these policies;

*“They are policies around alcohol but mostly around students. Among staff as well but I do not think they know much about it.” SSI4*

- **Procedure in alcohol abuse at the workplace**

It was revealed that there was a protocol that was followed by the department managers in alcohol use at work. The key stakeholders revealed a willingness to help the support staff with alcohol issues to try and help before they have to take extreme measures like suspension or firing the individual.

*“At the University we have a procedure which we follow, and we continuously get the same people who are repeating the same issues they go for counselling.” SSI1.*

*“...at Rhodes University, when they find out that you are drunk, they will call the Campus Protection Unit for breathalyzer, the results should read as 0.00 and if it is not you have to go for disciplinary hearing.” SSI4*

#### **5.2.2.4 Availability of any HP projects**

Health promotion initiatives and intervention tools past and currently running were recognized to find out what the initiatives the university had been involved in. According to the key stakeholders, there had been and was currently a short project running that focused on wellness and substance abuse, but there was currently no project focusing explicitly on harmful use of alcohol.

##### **1. Past initiatives**

*“Human resources and a few other counselling centres have done a few other occasions, initiatives and talks to the support staff on wellness, on alcohol abuse, substance abuse...” SSI1*

##### **2. Current initiatives**

#### **Wellness Department**

*“We currently have one initiative at the moment whereby we are getting our staff to be addressed on alcohol and substance abuse...These have been done in all kitchens and I believe housekeeping as well.” SSI1*

*“I can say that the wellness department is doing a lot with regards to substance abuse. The wellness officer does a lot of outreach campaigns, going around telling people about alcohol abuse, alcohol use.” SSI2*

*“We do have workshops with the staff members particularly grade 1-5 around alcohol and substance abuse and these initiatives started by the Department Of Social Development... We also started an initiative whereby we go to each department and talk to the staff members around alcohol abuse, which tends to be a problem at Rhodes University.” SSI4*

#### **Health Care Centre**

*“We are advising people on a yearly basis to go to their doctors to do check-ups, if they can't afford medical doctors to go to any clinic, or they come to us (Rhodes Health Care Centre) to know what their observations are... We do promote that on a daily basis.” SSI2*

*“I know that we as a Health Care Centre we do campaigns around drug abuse. We also do drug testing here at the HCC, were we check for things like cannabis, tac and such, there are 5 drugs we are testing for. And*

*obviously we do get people who have problem, they have to admit to the problem and be willing and then we can refer them to Fort England.” SSI2*

### **Counselling centre**

Counselling centre was the most frequently mentioned intervention facility identified by the participants.

*“We discipline, we counsel, we do workshops...” SSI1*

*“The counselling centres do talks in the residences or workshops they are having.” SSI2*

*“A lot of them also end up at the counselling centre.” SSI4*

### **Referrals**

The participants showed that at times the university does not have many tools for handling specific alcohol problems, the available people may not be trained to manage these alcohol problems or confidentiality can be a problem. The staff were worried about privacy issues;

*“We encourage people to visit the counselling centre or go to the HCC and those who are not comfortable with the counselling centre we see them to private people who can help them.” SSI5*

*“We refer to Alcoholic Anonymous, we had two staff members attending towards last year.” SSI5*

### **Interventions by the Human Kinetics and Ergonomics (HKE)**

*“We often have students coming from the HKE centre wanting to do tests on our staff in terms of their blood pressure, heart rate and stuff like that and also inform them on the correct way to eat. What the HKE is trying to make them aware is that once you get home, make a balanced meal and that will also make a healthy work environment for themselves.” SSI1*

#### **5.2.2.5 Benefits of WHP**

The majority of the participants indicated the importance of healthy staff in the workplace. The reasons mentioned were an increase in productivity, cost saving, and a decrease in absenteeism.

##### **1. Work-centred benefits**

#### **Increase in productivity**

Increase in productivity was the most frequently mentioned outcome of workplace health promotion.

*“I am really getting staff from staff, managers and supervisors, they think this programme will help improve productivity in the workplace and also reduce accidents that may be caused by someone who is intoxicated.” SSI4*

*“If you are healthy your work is of higher standard, I think that at the end of the day you increase productivity.”*



## **Cost saving**

Staff who abuse alcohol were seen to be more likely to take sick days or to carry out their duties slowly due to a hangover, which costs the institution money as other workers may have to be hired to make up:

*"It's a way of cost saving, in terms of sick leave, in terms of medical aid, sick leave." SS15*

## **Reduced absenteeism**

Staff absenteeism was reported as one of the major challenges by departments at the university. This had a negative influence on the workplace:

*"People are being absent, people drinking on pay day and not coming to work the following day." SS14*

### **2. Staff – centred benefits**

#### **Raising awareness**

It was noted that the majority of the support staff lacked access to health information and therefore knowledge of health-related aspects were believed to be helpful resources at the workplace.

*"The lower income group might not understand health information or lack access to the information, therefore they might someone to go to them and make them aware of alcohol abuse." SS14*

#### **Improvement of health**

It was noted that the WHPP were conducted to prevent diseases and to have healthier outcomes.

*"These projects are for the support staff, to provide them with information that they can use for disease prevention and help them improve their health." SS15*

#### **5.2.2.6 Suggested approaches for the WHP initiative**

Participants were keen to suggest approaches that can be considered during the implementation of the workplace health promotion initiative. Many participants suggested the use of pamphlets and posters as a means of communicating health messages, as these are convenient. Below are some of the other suggested improvements:

##### **1. Increase in knowledge**

#### **Educate**

*"I think you have to address the issue, being clear on the consequences if they do abuse in particular cases of alcohol and substance abuse." SS11*

#### **Use of posters and HILs**

*“I think one has to continuously push it in terms of posters. I think posters; visible advertising is something that will make you aware. If it’s in your face all the time that will make you realise...I think you have to have advertising in your face.” SSI1*

*“It would be nice to have leaflets that the support staff are able to read, because some of the leaflets available in the community are difficult to read.” FGD1*

### **5.2.2.7 Facilitating factors in WHP**

Participants mentioned factors that can help achieve a successful workplace health promotion initiative based on previous experiences.

#### **1. Staff based**

##### **Empowerment**

The participants identified the need to empower staff to take control of their own health as change has to come from an individual;

*“I think to reach to the potential that lies in each one of us to have a better life and to encourage people to start drawing on their own inner strength and wanting to live a better life.” SSI5*

##### **Perceptions on health**

The participants also identified that sometimes staff do not attend health promotion projects because they think they do not apply to them;

*“When we have these projects the support staff may not attend because they are healthy and well, health initiatives are not targeted at them.” FGD2*

#### **2. Facilitator based approach**

##### **Sensitivity**

Addressing the harmful use of alcohol was seen as a more sensitive issue. The harm done by alcohol could also be seen as self-inflicted.

*“When addressing this to avoid the blame culture but ask what can we do to help reduce alcohol consumption.” SSI5*

*“I think it is good to be very authentic and genuine with people and not patronize them.” SSI3*

##### **Incentives**

Incentives were mentioned as a success factor. Participants believed that incentives increased attendance and participation in workplace health promotion initiatives:

*“Staff wants incentives, we got bags from the department of health and the turnout was good...” SSI4*

### **3. Community based approach**

#### **Multi sectoral action**

Some participants mentioned the importance of working collaboratively together in response to the health burden by involving different departments and sectors in achieving positive health outcomes for the community.

*“We are still struggling so nothing has worked as yet, but the effort is a combined effort, from the nurses’ to the psychology perspective, to the community to the government. Everyone should work together as a community... So as a country, as a community, we need to work together, because this is just not a problem for Rhodes University, it’s a community problem, it’s a social problem. So we have to work together to get these systems in place.” SSI2*

#### **5.2.2.8 Limiting factors to WHP**

There were limiting factors in previous WHP initiatives even though they were facilitating factors. These included interventions being done once off and not consistently, the denial that comes with individuals suffering from alcoholism, poor attendance to initiatives being done and also disruptions like the university strikes that were occurring:

##### **1. Time constraints**

#### **Frequency of initiatives**

*“If you are going to have someone who will come talk to you every second or third year, then you will forget about it.” SSI1*

*“I think it requires ongoing effort.” SSI3*

#### **Effect of university strikes**

They were initiatives that were disrupted by the strikes that were taking place at the university. This resulted in cancelling or rescheduling of some initiatives.

*“We were supposed to have a big workshop for awareness but on the day there was unrest, students were protesting as a result we could not have it.” SSI4*

##### **2. Participant limitations**

#### **Denial in alcoholism**

*“People are in denial when they do have the problem of being an alcoholic or being a drug abuser, they are in denial. Or they will just say sorry or lie about it, and when we do the urine test, it shows the person is abusing. So that is the main challenge, people are in denial.” SSI2*

#### **Poor attendance**

Participants pointed out that there were workshops done but attendance had been poor. The main reason was that the initiatives were being carried out at inconvenient times, usually during work hours and lack of communication of the HP projects.

*"We had a workshop, but the attendance was very poor." SSI4*

*"Sometimes we cannot attend these meetings because on certain days the other staff is off and we have to work the whole day and we do not have the time." FGD2*

*"We find out about the meetings after they have been done already because we are not told about them, therefore we do not attend." FGD2*

### **3. Facilitators limitations**

#### **Interventions not advertised properly**

The support staff indicated that there were times when initiatives were done but these were not communicated to them, therefore they did not attend.

*"We are not told about some of these meetings, so we do not go..." FGD1*

#### **Privacy and confidentiality issues**

"As peer educators it is hard for some of our peers to talk to us because we are people they know, so they fear judgement and us sharing this information with other people, even though confidentiality is assured". FGD2

#### **5.2.2.9 *Reasons for harmful use of alcohol***

It was important to identify the staff's beliefs on the factors that influence lifestyle risk factors in order to plan the direction the intervention would take. These social, economic and personal factors needed to be investigated in detail and then clarified in the intervention in order to promote health as well as provide the target group with accurate health information. Some of the topics that were raised are detailed below:

##### **1. Social factors**

The participants identified social factors associated with alcohol use. Peer pressure, culture, myths and beliefs were mentioned as factors influencing drinking patterns;

#### **Influences from relations and peer pressure**

Relations and peer involvement was identified as a major risk factor to alcohol abuse. Participants mentioned that this was one major challenge that contributed to harmful use of alcohol.

*"One can talk to the staff in terms of making them aware but unfortunately once they leave the workplace, they get involved in their social groups outside the workplace and is no longer within our control..." SSI1*

*“...a lot of peer pressure is put on our staff, specifically around pay days and this following of friends leads to indulges...” SS11*

### **Role of culture**

Cultural influences on alcohol use were identified in the contexts and environments where people live and interact.

*“As a Xhosa person, people do not want to drink 1 glass of red wine, they want to drink the whole bottle.” SS14*

*“At traditional ceremonies, traditional beers are prepared and these are taken by everyone there.” FGD1*

The above-mentioned sentence led to further discussions, which showed that drinking is acceptable in the IsiXhosa culture and is part of their tradition. The participants reported that the leaflet was informative, culturally sensitive and couched in easily understandable language.

### **Practices, myths and beliefs**

The key stakeholders responded that there were beliefs that alcohol use was beneficial to health. These relations play a central role in teaching these alcohol norms and behaviours.

*“Wine tends to help one’s heart...” SS14*

### **Advertisement**

One key stakeholder mentioned the role advertising has on unhealthy behaviours.

*“Advertising is also a factor, they use packaging that is attractive and billboards with good looking women to try and lure customers to try their products.” SS11*

## **2. Economic factors**

The participants also identified economic factors that contribute to alcohol use. The main economic factor mentioned was that alcohol use at times was a result of poverty. One key stakeholder mentioned the relationship between poverty and alcohol use:

### **Poverty stricken environments**

*“There is a lot of challenges among the support staff, they are abusing alcohol or drugs because they say that they are suffering. Suffering means that they are poor, have marital problems, social circumstances are not ideal or financial challenges. So now they go into this series of bad choices.” SS12*

### **Unemployment**

*“Grahamstown has such a huge unemployment rate of 70%, our staff have an income which attracts the non-working people. Obviously, this creates a friendship and a lot of peer pressure is put on our staff, specifically around pay days.” SSI1*

## **Socio-economic factors**

### **Education**

*“...new staff coming in and now are getting a salary they are not used to and obviously need to be made aware of how to spend it, they are not aware of the effects alcohol on their health...” SSI1*

#### **5.2.2.10 Consequences of harmful use of alcohol**

The respondents mostly identified long term effects of alcohol; all effects mentioned were negative:

##### **1. Economic consequences**

#### **Decreased productivity at the workplace**

*“The impact of alcohol on productivity at the institution because sometimes when people have been drinking the day before, they will be having a hangover, it’s either someone might be slow at the workplace or might stay at home and not come to work which tends to impact productivity.” SSI4*

#### **Costs**

*“With use of alcohol there can be damage to property.” SSI1*

#### **Increased accidents at work**

*“Drinking at work may put other staff in danger as well.” SSI4*

*“It is dangerous in the workplace, for other staff members as well, one specific case is related to the car accident of Rhodes vehicle, so there was a loss of cost.” SSI1*

#### **Unemployment**

*“Ultimately they will be found out and they will possibly lose their job...You have people who lost their jobs because of unnecessary behaviour.” SSI1*

##### **2. Social consequences**

#### **Losing relations**

*“...those friends you had during your pay weekends will not be your friends when you do not have a job.” SSI1*

#### **Affects family**

*“The side effects of alcohol abuse is not just the individual himself but it is the family, the loss of income.”*  
SSI5

### **3. Physical consequences**

Respondents mentioned that alcoholism had negative comorbid health issues including a number of chronic diseases:

#### **Diseases**

*“They choose to forget about their problems, they use these things because they think tomorrow the problem will disappear, but when you ask them what happened to your problems? They always say it is increasing, because with the financial burden or the social burden, now the poverty comes and now physical problems. Because we know what these alcohol and drugs do to the body. The liver can be affected, the brain, the kidney, the heart because we put poisons in our blood...”* SSI2

*“If you consume too much alcohol it is going to affect your pregnancy and it will affect your child after birth because we see a lot of grownups affected by alcoholism while the mother was pregnant.”* FGD3

#### **Non-adherence to medicines**

*“The issue of adherence is a real problem, because they do not take their pills according to the Doctor’s prescription, because of alcohol. They tend to forget when they are supposed to take them, which brings drug resistance.”* SSI5

#### **Death**

*“Almost every month, we receive invitations attend a memorial service, and you find out we have decided to change focus from HIV/AIDS. People are not dying from HIV/AIDS they are dying of other diseases; the root cause might be alcohol.”* SSI4

#### **5.2.2.11 Expectations of effectiveness of interventions**

Participants encouraged the implementation of this workplace health promotion project. However, they mentioned individuals’ denial of alcohol problems as an obstacle for behavioural change;

#### **Individual willingness**

*“We can do as much as we can on campus, but unfortunately once they get into own social environments we are no longer responsible for their activity... besides taking them by the hand and everything, more unfortunately for some people, that is the way they prefer to live, so be it.”* SSI1

*“There is this saying that you can take a horse to the river but you cannot force it to drink, they tend to be arrogant and ignorant, sometimes they tend to be defensive around accepting that they do have a problem.”* SSI5

#### **Lack of time**

Some considered lack of time to be an important obstacle. There were so many other tasks to perform during a consultation that doctors felt unable to take on any extra workload.

#### **5.2.2.12 Personal experiences**

Group interviews also shed light on how alcohol continues to be a problem in society and how it has impacted on the participants' lives.

One participant shared a personal experience:

*"My mother had lung cancer, and I watched her suffer before she finally died because of alcohol..."* FGD1

Another participant, who used to drink, said:

*"I remember this day, I fell and pulled a muscle, and I could not walk or do anything else for days."* FGD1

### **5.3 Results from Phase 2**

#### **5.3.1 Development of the HIL**

Three HILs were designed;

HIL 1 – Health consequences of harmful use of alcohol

HIL 2 – Harmful use of alcohol – health, economic and social effects

HIL 3 – Alcohol in pregnancy and foetal alcohol syndrome

##### **5.3.1.1 Stage 1: Peer review - formative feedback from peers**



The quality and suitability of the first draft of the health information leaflets were analysed by the supervisor, four post-graduate students, and two colleagues at Rhodes University. The peers were from the Health Promotion team in the Faculty of Pharmacy. The changes made to the HILs at this stage included:



- Fixing grammatical errors and changing the wording of the information so it is more readable for our target audience.
- Fixing the position and alignment of graphics and paragraphs and replacing photographs that were unclear, difficult to understand or inappropriate for our target.
- Ensuring font size was readable and fonts were consistent
- Ensuring all graphics were captioned, appropriate and of good quality

All the three leaflets were subjected to a content change at this stage. This is tabulated below





Table 17: Changes made from draft 1 to draft 2 of HIL 1



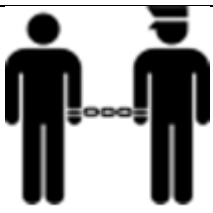
	Draft 1	Draft 2	Reason for alteration according to feedback
Panel 1	"Faculty of Pharmacy"	Deleted	Moved to the back of the HIL
	"Health Information Leaflet"	Deleted	Unnecessary information
	"Health Consequences of Alcohol" title	Title changed to, "Health Consequences of Alcohol Use"	Suggested alternative title
		Picture on the cover page to be replaced 	Original picture suggested promotion of alcohol use
Panel 2	"What is Alcoholism and Alcohol Abuse"	Heading divided into two separate headings; "What is Alcoholism?" as one heading and "What is Alcohol Abuse?" as a second heading	To make a clearer distinction between the two terms
	"Which could have medical, legal, educational, and/or social effects on a person's life"	Rephrased to, "It could have negative medical, legal, educational, and social effects on a person's life"	Alcohol use can cause all the effects mentioned, therefore 'or' removed
	"However, these effects do not stop the person from drinking more alcohol"	Deleted	N/A
Panel 3	"Loss of control over amount of alcohol consumed"	Rephrased to, "Not being able to control the amount of alcohol you drink"	Language more simpler for the target group.
	"Not paying attention to family and professional duties regularly"	Rephrased to, "Not paying attention to family and not going to work"	
	"Dangerous behaviours which may risk the health of alcohol abusers and others"	Rephrased to, "Dangerous behaviours such as abuse, drinking and driving"	
	"Insomnia, which may be followed by oversleeping"	Rephrased to, "Not being able to sleep at times and then oversleeping"	
	Picture caption "Insomnia"	Picture caption changed to, "Not being able to sleep"	
	"Delayed reflexes"	Rephrased to, "Late reactions"	

Panel 4	“Harmful use of alcohol is one of the world’s leading risk factors for disability and death”	Rephrased to, “Harmful use of alcohol is one of the world’s leading risk factors for long-term diseases”	
	“Impotence in men and infertility in women”	Rephrased to, “Unable to have children” in the diagram of the body	
	“Causes and Prevention of Health Consequences of Alcohol” heading to be divided into two separate headings	“Causes of Alcohol Abuse” as one heading and “Prevention of Alcohol-Related Problems” as the second heading	Information was split into 2 different sections to avoid confusing the reader
	“Individuals usually drink alcohol because of stress or peer-pressure”	Rephrased to, “People usually drink a lot of alcohol because of stress or peer-pressure”	Language more simpler for the target group.
		Picture added under “Causes of Alcohol Abuse” heading: 	More pictures were needed on back panel aid in explanation
Panel 5	“Alcohol abuse should be stopped by reducing the amount of alcohol one drinks”	Rephrased to, “Drinkers could stop alcohol abuse by reducing the amount of alcohol they drink and by seeking help”	Language more simpler for the target group.
	“See a specialist in order to know the recommended daily limits of alcohol, and for any further information”	Rephrased to, “See a doctor of an expert in order to know the recommended daily limits of alcohol, and for any further information”	
	Add more information under “Prevention of Health Consequences of Alcohol” heading	Instead of drinking alcohol, try to drink juice or water. Ask people close to you to encourage you to not drink alcohol, and to rather do other activities with you”	Not sufficient information had been added
Panel 6	“Student Number: G13S4930” to be deleted	Deleted	Unnecessary information
	Logo to be replaced or deleted: 	Deleted	Not the logo for Rhodes University


**Table 18: Changes made from draft 1 to draft 2 of HIL 2**

	<b>Draft 1</b>	<b>Draft 2</b>	<b>Reason for alteration according to feedback provided</b>
Panel 1	"Faculty of Pharmacy" on cover page	Deleted	Only to be placed at the back of the leaflet
	Title "Harmful use of Alcohol" on cover page	Title was made bold and centred	To highlight the title to make it more eye catching
	"Health Information Leaflet" on cover page	Deleted	N/A
		"Health, Social and Economic Effects" added	To provide reader with more information on the contents of the HIL.
Panel 2	Heading "Harmful use of Alcohol"	Heading changed to "Health, social and Economic effects of Alcohol" in bold.	Mentioned the sub-topics to be covered.
	"Alcohol can damage nearly every organ in the body. It can cause high blood pressure, liver disease and cancer."	"Heart diseases" added and the information was put in bullet form were added "Alcohol can damage nearly every organ in the body. It can cause:  · High blood pressure  · Liver diseases  · Heart diseases  · Cancer"	Information put in bullet form to make it easier to read.
	Drinking too much alcohol can cause harm to the drinker, people close to the drinker and society as a whole.	"Drinkers earnings" was added and the information was put in bullet form "Drinking a lot of alcohol often can cause harm to:  · Drinker  · Drinker's earnings  · People close to the drinker	Information put in bullet form to make it easier to read.


		· Society as a whole”	
	“Harmful use of alcohol can also affect people’s health and budget.”	Deleted	Information was addressed above
	 <p>Alcohol affects society as a whole</p> <hr/> <p>Picture removed</p>		Picture did not represent an affected society.
		 <p>Harmful use of alcohol</p> <hr/> <p>Picture added</p>	Suggested use of more pictures in the HIL
Panel 3	Heading “Social Impact of Alcohol”	Heading changed to “Social Effects of Alcohol”	‘Effects’ considered a more common word
	“Drinking alcohol results in changes that affect people’s social behaviour, and how they interact with partners and other family members. Social impacts of alcohol include:”	Changed to “Drinking alcohol can change the way people act and how they treat their family and friends. Social effects of alcohol include:”	
	“Poor work performance”	“Not doing work well”	
	“Absence from work or school”	“Not going to work or school”	
	“No attention given to children or household”	“Not taking care of children and households well”	


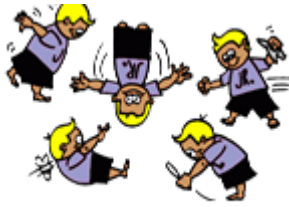
	“Aggression and violence against others”	“Being aggressive and violent to other people”	
	“Child and/or spouse abuse”	“Abusing children and family members”	
	“Arrests for legal problems”	“Getting arrested for breaking the law”	
	“Increased road accidents due to drinking and driving”	“Increased road accidents because of drinking and driving”	
	 <p><u>Aggression/violence</u></p>	 <p><u>Being violent</u></p> <p>Caption for picture changed</p>	
		 <p><u>Getting arrested</u></p> <p>Picture added</p>	Input of more pictures was suggested
Panel 4	Heading “Economic Impact of alcohol”	Heading changed to “Economic Effects of alcohol”	‘Effects’ considered a more common word
	“Alcohol carries a large economic burden worldwide.”	Deleted	Sentence was too complex.
	“The economic impact of alcohol can be severe, mainly for the poor.”	“The effect of alcohol on the economy can be severe, especially for the poor.”	Sentence simplified.
	“Heavy drinkers may face some economic impacts including:”	“Heavy alcohol drinking can financially affect families in the following ways:”	
	“Lower wages”	“Getting paid less money (due to not working well)”	

	"Lost employment chances"	"Losing jobs"	
	"Increased medical and legal expenses"	"Spending more money on medical treatment"	
	"Alcohol's effect on family and economy"	"Effects of alcohol on drinker's family and earnings"	Language more simpler for the target group.
		<p>Picture changed to F</p>	Link between alcohol use and debt explained better. Complex terms simplified.
Panel 5	Picture caption "Causes of harmful use of alcohol"	Caption changed to "Results of harmful use of alcohol"	The picture showed the effects of harmful use of alcohol
		Flow diagram changed to	Sentence is more simplified.
	Heading "Conclusion"	Changed to "Did You Know..."	To make the title more interesting
	"Most people abuse alcohol because it makes them feel better"	"Many people abuse alcohol because it makes them feel better about themselves or to relieve stress."	Preferred sentence construction



	about themselves or to relieve stress.”		
	“However, harmful use of alcohol may have a bad impact on the drinker’s behaviour and daily way of living.”	“However, the harmful use of alcohol can have a bad effect on the drinker’s behaviour and daily routine.”	Difficult words replaced with simpler ones
	“The use of alcohol should be reduced to prevent negative health, social and economic impacts.”	“You should reduce the use of alcohol to one drink a day, and keep reducing further to prevent negative effects on your health, working life and the people around you.”	The sentence was expanded, making it clearer
		Changed to “Rhodes University”	Logo used was not for Rhodes University

**Table 19: Changes made from draft 1 to draft 2 of HIL 3**

	Draft 1	Draft 2	Reason for change
Panel 2	Heading “Effect of Alcohol on Men and Women”	Heading changed to “Effects of Alcohol on People”	Preferred sentence construction
	“Conversing with others”	Changed to “Talking with others”	Sentence simplified.
	“Trying to move past an emotional or difficult time.”	Changed to “Dealing with emotional problems.”	
		Picture added  <u>Depression</u>	The peers suggested more pictures be added
	Men are likely to drink more alcohol than women, but women:	Deleted	This was removed to focus on the health effects of alcohol

	<ul style="list-style-type: none"> <li>· Absorb more alcohol</li> <li>· Take longer to break it down</li> <li>· Take longer to remove it from their bodies</li> </ul>		
	“Alcohol needs to be broken down and removed to prevent alcohol-related problems, such as liver diseases and cancer.”	Changed to “After drinking alcohol the body needs to remove it from the body to prevent alcohol-related problems such as liver diseases and cancer.”	Sentence simplified.
Panel 3	Heading, “Why Alcohol is Dangerous in Pregnancy”	Heading changed to, “Why is Alcohol Dangerous in Pregnancy?”	Preferred sentence construction
	“If you drink alcohol during pregnancy, the alcohol can reach the baby by passing through your blood and into the placenta (an organ which provides the baby with nutrients and oxygen and gets rid of wastes from the baby’s blood).”	<p>Changed to “· If you drink alcohol during pregnancy, the alcohol can reach the baby by passing through your blood and into the placenta</p> <ul style="list-style-type: none"> <li>· The placenta is an organ which provides the baby with nutrients and oxygen, and gets rid of wastes from the baby’s blood”</li> </ul>	Explanation of placenta separated to make it clearer to the reader
	“Baby dying from Sudden Infant Death Syndrome”	Deleted	Inappropriate information
	“Child having problems with speech”	“Child might have problems talking”	Language more simpler for the target group.
	 <p><u>Child being too active</u></p>	<p>Picture changed</p>  <p><u>Child being too active</u></p>	The picture was confusing.
	“Child may be aggressive”	“Child may be violent”	Language more simpler for the target group.



	 <p>Aggressive child</p>	<p>Picture and caption changed to</p>  <p>Violent children</p>	<p>Picture was considered difficult to understand and caption more simplified.</p>
Panel 4	“Small in size”	“Small body size”	Language more simpler for the target group.
Panel 5	“If you have already been drinking alcohol during pregnancy, stop drinking completely for the rest of your pregnancy.”	“If you are pregnant and have already been drinking alcohol, stop drinking completely for the rest of your pregnancy.”	Sentence restructured to make it more readable.
	“Remember, stopping alcohol can reduce the chances of your child being harmed.”	“Remember, not drinking alcohol can reduce the chances of your child being harmed.”	Alcohol not recommended during pregnancy and when trying to get pregnant, therefore sentence was rephrased.

### 5.3.1.2 Stage 2: Pilot study results

#### 5.3.1.2.1 Pilot testing demographics

Three pilot tests were carried out for each HIL. 10 participants (support staff) participated in the pilot study with 5 participants taking part in a HIL. 50% of the participants that took part in the pilot study were female and 50% were male. The age range was from 29 to 59 years with a mean age of 47.5. The majority of participants (90%) were black, first language IsiXhosa speakers, while 10% were coloured, first language Afrikaans speakers.

**Table 20: Support staff demographics**

Participant number	Gender	Age	Highest education level	Occupation
1	Male	29	Grade 10	Lab assistant
2	Male	58	Grade 12	Lab assistant

3	Female	30	Grade 12	Cleaner
4	Female	44	Grade 11	Cleaner
5	Female	58	Grade 10	Cleaner
6	Male	52	Grade 12	Security
7	Male	29	Grade 11	Security
8	Female	58	Grade 10	Cleaner
9	Female	59	Grade 12 + course	Senior lab assistant
10	Male	58	Grade 12	Technician

The mean age of the participants was 47.5 with a median of 44.


#### 5.3.1.2.2 Changes made to the Draft 2




Feedback obtained from the pilot study with these five participants is presented below. Information was collected using a self-administered questionnaire and was used to modify the second draft of the HIL to produce the third draft.


#### 5.3.1.2.3 Health consequences of alcohol

The responses given for HIL 1 were generally positive, with some changes being requested by the support staff to enhance its design and content.

**Table 21: Changes made from draft 2 to draft 3 of the HIL 1**

	<b>Change Required</b>	<b>Change Made</b>	<b>Reason for alteration due to feedback</b>
Panel 2	“Signs and Symptoms of Alcohol Abuse” heading	Picture added under “Signs and Symptoms of Alcohol Abuse” heading:  No drunk-driving	Adding more pictures required
	“Numbness and trembling hands”	Rephrased to, “Shaking and lack of feeling in hands” in the diagram of the body	Information rephrased to make it more readable
	“Drinkers could stop alcohol abuse by reducing the amount of alcohol they drink and by seeking help”	Rephrased to, “To meet the need for alcohol, to feel better and relaxed, to reduce stress, peer pressure”	

	<p>“Ask people close to you to encourage you to not drink alcohol, and to rather do other activities with you”</p>	<p>Rephrased to, “Family members and friends can encourage drinkers to stop drinking alcohol” as one bullet point and “Do other activities which you enjoy and will help to reduce stress” as a second bullet point</p>	
		<p>Picture added under “Prevention of Alcohol-Related Health Problems” heading:</p>  <p>Encourage not to drink</p>	<p>Addition of more pictures under “Prevention of Alcohol-Related Health Problems” heading was required to aid the text.</p>
		<p>Picture added under “Prevention of Alcohol-Related Health Problems” heading:</p>  <p>Watching TV</p>	
		<p>Picture added under “Prevention of Alcohol-Related Health Problems” heading:</p>  <p>Gardening</p>	
		<p>Picture added under “Prevention of Alcohol-Related Health Problems” heading:</p>	

		 Juice	
	“See a doctor or an expert in order to know the recommended daily limits of alcohol, and for any further information”	Rephrased to, “Do not drink more than the recommended daily limits of alcohol” as one bullet point and “For more information see a nurse, pharmacist, doctor or an expert” as a separate note	Rephrased to expand more on the health professionals that a person can see
		Personal details on the back panel of the leaflet deleted	N/A

Draft two was modified to draft three after pilot testing. Eleven changes, including both textual and imagery changes, were made. Five of the eleven changes were imagery changes. Five images were added to the leaflet to better illustrate the text. Six textual changes were made to make the HIL more readable. One of the four respondents stated that “the pictures helped to explain the text.” However, the fifth respondent did not understand any of the pictures illustrated and stated that “the one picture requires you to know the body of the human being.”



Written information was said to be easily understood by most respondents. All respondents found the font legible and the amount of text in the leaflet to be “just right.” Most respondents found the language easy to understand, except one of the five, who did not understand all the words in the leaflet. One respondent commented, “I think the text was simple,” while another remarked that “it is in a language I use daily.” All five respondents found the HIL very helpful. One respondent said, “You should make leaflets on alcohol often so that people can stay away from these things.” Another respondent suggested, “More of these leaflets should be displayed and practically demonstrated in our environment because most of the people are not well educated or informed about what dangers they put themselves under when they abuse alcohol.”

5.3.1.2.4 The harmful use of alcohol – health, social and economic effects

The majority of responses for HIL 2 were positive. Some of the positive feedback received is detailed below and the changes made to the HIL are detailed in Tables 22, 23 and 24.

**Table 22: Changes made from draft 2 to 3 in HIL 2**

	<b>Draft 2</b>	<b>Draft 3</b>	<b>Reason for alteration</b>
Panel 3	“Being aggressive and violent to other people”	“Being violent to other people”	1/5 people did not understand the word ‘aggressive’.

	 <p>Getting arrested</p>	<p>Picture and caption changed to</p>  <p>Being arrested</p>	<p>2/5 people did not understand the first picture.</p>
Panel 4	<p>“The effect of alcohol on the economy can be severe, especially for the poor.”</p>	<p>“Alcohol can have very bad effects on the economy, especially on the poor.”</p>	<p>1/5 people did not understand the word ‘severe’.</p>
Panel 5	<p>“However, the harmful use of alcohol can have a bad effect on the drinker’s behaviour and daily routine.”</p>	<p>“However, the dangerous use of alcohol can have a bad effect on the drinker’s behaviour and daily routine.”</p>	<p>1/5 people did not understand the word ‘harmful’</p>
Panel 6		<p>Added “For more information, see a nurse, pharmacist, doctor or an expert.”</p>	<p>It was important for users to know where they can get extra help</p>

Three of the five participants understood all the pictures and words in the leaflet. Two participants did not understand some of the pictures in the leaflet, and changes were made accordingly to Draft 3.

All of the participants found the leaflet very helpful. One participant said:

*“More of these should be displayed and practically demonstrated to our communities because people abuse alcohol and it affects their living conditions.”* PT1

Another participant commented:

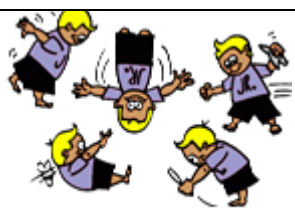
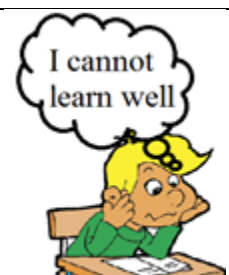
*“To do more interventions like these so that people can learn that alcohol is dangerous.”* PT2

Participants responded well to the word game incorporated at the back of the HIL and reported that this was a great motivator to read the information. All participants played the game and tried to find all of the words.

#### 5.3.1.2.5 Alcohol in pregnancy and foetal alcohol syndrome

The responses for HIL 3 were also generally positive. Some of the responses are provided below, and the suggested changes are detailed in Table 23.

**Table 23: Changes made from draft 2 to 3 HIL 3**

	Draft 2	Draft 3	
Panel 3	 <p>Child being too active</p>	Picture removed	5/5 people did not understand the picture.
		 <p>Child cannot learn</p>	5/5 people preferred if more pictures were added in the HIL.

Three of the five participants understood all the pictures and words in the leaflet. Two participants did not understand some of the pictures in the leaflet, and changes were made accordingly to Draft 3, as shown below. All of the participants found the leaflet very helpful. One participant said:

*“More of these programmes should be done more often so that we can learn and others who are not aware of the dangers of alcohol can learn as well.” PT3*

Another participant said,

*“I wish every parent would know the risk of alcohol to their children.” PT4*

Participants responded well to the word game incorporated at the back of the HIL and reported that this was a great motivator to read the information. All participants played the game and tried to find all of the words. Feedback obtained was used to modify the second draft of the HIL to produce the third draft. Below is a summary of results obtained from the pilot study.

**Table 24: Summary of results obtained from pilot study**

	Percentage (%)		
	HIL 1	HIL 2	HIL 3
Understood all the pictures	100	80	20

Found the pictures helpful	100	100	100
Would prefer more pictures to be added	100	60	100
Did not find any of the pictures culturally offensive	100	100	100
Found the information easy to understand	60	100	100
Found the font size easy to read	100	100	100
Amount of text in the leaflet was sufficient	100	100	100
Understood all the words	80	80	60

### 5.3.1.3 Stage 3: Focus group discussion results



Evaluative questions used in the question guide were adopted from the SAM and PEMAT tools. The main evaluation sections were: content; literacy demand; graphics; layout and typography; learning stimulation; culture appropriateness; and relevance of the activity. Below are the resultant changes made to the HILs:

#### 5.3.1.3.1 Health consequences of alcohol use

The responses given for the HIL 3 were generally positive, with a few changes being requested by peer educators including additional information to enhance its design and content. Below are some of the responses to the HILs:

**Table 25: Changes made from draft 3 to draft 4 of HIL 1**

	<b>Draft 3</b>	<b>Draft 4</b>	<b>Reason for alteration due to feedback obtained</b>
Panel 2	"To meet the need for alcohol"	"To meet the need for alcohol (addiction)"	Suggested adding 'addiction'
		"To avoid facing problems" added under "Causes of Alcohol Abuse" heading	This point was raised by the peer educators
	"To reduce stress"	"To feel less stress"	Language more simpler for the target group.
Panel 5	"Do not drink more than the recommended daily limits of alcohol"	"Do not drink more than the recommended limit of 140 mL (about half a cup) of alcohol per week"	Question on what the recommended limit is; therefore, more information was added.

		<p>Picture replaced under "Prevention of Alcohol-Related Health Problems" heading:</p> 	<p>This picture was not clear to the peer educators.</p>
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Draft three was modified to draft four after a focus group discussion. Four textual changes were made. Recommended limits of alcohol were added to the leaflet. Peer educators also identified some of the information as unclear in the HIL. One asked, "What does 'To meet the need for alcohol' mean?" As a response, the sentence was changed to 'To meet the need for alcohol (addiction)'.

Another asked, "Do not drink more than the recommended daily limits of alcohol' – What is the limit?" Information regarding the recommended daily limit was thus added.

#### 5.3.1.3.2 Harmful use of alcohol – health, social and economic effects

Again, the majority of responses for HIL 2 were positive and the changes made to the HIL are detailed in Table 26.

**Table 26: Changes made from draft 3 to draft 4 of HIL 2**

	Draft 3	Draft 4	Reason for alteration based on feedback
Panel 3		<p>Picture changed to</p> 	<p>Picture was not clear.</p>

Group interviews provided in-depth information to identify the relevant changes required when designing the HIL. All participants were first language IsiXhosa speakers, and helped researchers understand IsiXhosa cultural perspectives related to the use of alcohol. For example, one participant mentioned that:

*"At traditional ceremonies, traditional beers are prepared, and these are taken by everyone there."* FGD2



This comment led to further discussion, which showed that drinking is an acceptable practice in the IsiXhosa culture, and forms part of their traditional celebrations. Participants reported that the leaflet was informative, culturally sensitive, and couched in easily understandable language.

Participants identified information that other support staff might not have been able to understand. An example of an image that was changed is shown above in Table 26. Group interviews also shed light on how alcohol continues to be a problem in society, and how it has impacted on the participants' lives.

One participant shared a personal experience:

*“My mother had lung cancer, and I watched her suffer before she finally died because of alcohol...”* FGD3

Another participant, who used to drink, said:

*“I remember this day, I fell and pulled a muscle, and I could not walk or do anything else for days.”* FGD3

The findings from these discussions showed that the harmful use of alcohol is not only a problem on campus, but also in the community, as different individuals in the group shared their experiences on the short and long-term effects they have either personally experienced or witnessed happening to others.

**Table 27: Changes made from draft 3 to draft 4 of HIL 3**

	<b>Draft 3</b>	<b>Draft 4</b>	<b>Reason for alteration based on feedback</b>
Panel 2		Heading added 'Why do women drink?'	Peer educators suggested separating the reason why people drink and making it more focused on women.
	'Stressed'	'Feeling stressed'	N/A
		Added "Premature birth"	Suggested by peer educator as one of the effects of drinking alcohol whilst pregnant.
		Added 'Disability'	Suggested by peer educator as one of the effects of drinking alcohol whilst pregnant.

	'Alcohol use can lead to alcohol-related problems, such as liver diseases and cancer.'	Removed	This information was covered in previous HILs.
Panel 3		Added 'Domestic violence (can cause harm to the baby)'	Peer educators suggested inputting the additional information.
		Added 'Premature (early) birth'	
Panel 5	'You can prevent FAS by not drinking alcohol intake while you are pregnant. If you have already been drinking alcohol during pregnancy, stop for the rest of your pregnancy. It is not safe to drink at any time during pregnancy.  Remember, not drinking alcohol can reduce the chances of your child being harmed.'	Bullets added	Shorter sentences and bullet points used to ensure readability.
Panel 6		Added 'For more information, discuss with a nurse, pharmacist or doctor.  National Helpline: 0861 HELP AA (435-722)'	

According to the feedback and data collected, appropriate changes were made to the leaflet at each stage until the fourth draft was compiled.

#### 5.3.1.4 Stage 4: Content validation

The nurses consulted in this study assessed the validity of the content in the second draft HILs. Feedback received from these health professionals was mostly positive, with all information being scientifically sound and valid. The results obtained are tabulated and shown below.

#### **Health consequences of alcohol**

##### **Is the information contained in the HIL accurate?**

*"Yes, also the information and terminology is relevant and easy to understand. The colourful leaflet attracts attention and interest."*

*"Yes, it is accurate."*

**Is the information suitable for the target population (RU support staff)?**

*“Yes. The information is suitable because a lot of support staff is affected by alcohol (sometimes due to family members that are abusing alcohol).”*

**Would you consider the information contained in the HIL to be biased?**

*“No. According to this information alcohol abuse affects both males and females.”*

**Would you consider the information in the HIL current or up to date?**

*“Yes. The information is up to date and relevant. Terminology used is easy to grasp and understand.”*

**Does the information in the HIL adequately cover the topic?**

*“Yes. Especially the pictures and colourful leaflet speaks to the client or patient.”*

*“Yes. It covers the topic.”*

### **The harmful use of alcohol**

**Is the information contained in the HIL accurate?**

*“Yes. The information is self-explanatory and easy to understand.”*

**Is the information suitable for the target population (RU support staff)?**

*“Yes. Very relevant because of the current situation at RU where so many staff members abuse alcohol.”*

**Would you consider the information contained in the HIL to be biased?**

*“No. The information is for both males and females.”*

**Would you consider the information in the HIL current or up to date?**

*“Yes. It is up to date and current.”*

### **Alcohol in pregnancy and foetal alcohol syndrome**

**Is the information suitable for the target population (RU support staff)?**

*“Yes. Specifically female staff.”*

**Would you consider the information contained in the HIL to be biased?**

*“No, the leaflet is specifically for females but it will also empower males regarding FAS.”*

**Does the information in the HIL adequately cover the topic?**

*“Under ‘Effects of alcohol on people’ some more information may be needed.”*

### Additional general comments

*“Good and relevant information”*

**Table 28: Results obtained from the professional nurses**

HIL title	Health consequences of alcohol use		The harmful use of alcohol		Alcohol in pregnancy and FAS	
	Yes	No	Yes	No	Yes	No
Is the information contained in the HIL accurate?	100%	0%	100%	0%	100%	0%
Is the information suitable for the target population (RU support staff)?	100%	0%	100%	0%	100%	0%
Would you consider the information contained in the HIL to be biased?	0%	100%	0%	100%	0%	100%
Would you consider the information in the HIL current or up to date?	100%	0%	100%	0%	100%	0%
Does the information in the HIL adequately cover the topic?	100%	0%	100%	0%	75%	25%
Total number of participants	4					

### 5.3.2 Suitability results

#### 5.3.2.1 SAM results

The SAM tool was used to evaluate the suitability of the HILs. First drafts and the final versions of all three HILs were assessed using the SAM tool. Percentage ratings of the first drafts of all leaflets fell between 60 and 87.5%, representing adequate material. These results showed that the draft HILs were satisfactory, although there was room for improvement. The SAM scores for all the final HILs showed significant improvements in their overall suitability. All three scores fell within the acceptable range of 70-100%, representing superior material. From these results, the HIL content was found to be of a suitable reading level, design and layout were of superior quality, and the information provided allowed for learning stimulation and motivation. The graphics in the HILs were relevant and were appropriately placed. Table 29 below shows, in detail, the SAM results of the second and final drafts of the HILs, as assessed by the five reviewers.

**Table 29: Comparison of SAM results in draft 1 and final draft of HILs**

Reviewer	Health consequences of alcohol use		The harmful use of alcohol		Alcohol in pregnancy and FAS	
	Draft 1	Final Draft	Draft 1	Final Draft	Draft 1	Final Draft
1	60	65	75	100	87.5	100
2	80	95	72.5	100	65	83
3	77.5	97,5	72.5	87.5	87.5	100
4	72.5	87.5	60	72.5	84	95
5	70	90	60	92.5	72.5	87.5
Mean %	72	87.9	68	90.5	79.3	93.1

**5.3.2.2 PEMAT results**

On the PEMAT score sheet, the HILs were rated for their understandability and actionability. The second and final drafts of the HILs were rated by a panel of five individuals. These two sets of results were compared to assess any changes in understandability and actionability of the HILs after the series of changes. The understandability and actionability results improved for all HILs.

A comparison of understandability results for second draft HILs and final draft HILs is shown below:

**Table 30: Comparison of understandability PEMAT results in draft 1 and final draft of HILs**

Reviewer	Health Consequences of Alcohol Use		The Harmful Use of Alcohol		Alcohol in Pregnancy and FAS	
	Draft 1	Final Draft	Draft 1	Final Draft	Draft 1	Final Draft
1	93	100	86	100	86.7	100
2	78.6	100	86	100	100	80
3	78.6	100	82.4	100	82	100
4	80	100	71.4	100	94	100
5	80	100	71.4	100	79	100
Mean	82.5	100	79.4	100	88.3	96.7

A comparison of actionability results for second draft HILs and final draft HILs is shown below:

**Table 31: Comparison of Actionability PEMAT results in Draft 1 and Final Draft HIL 1**

Reviewer	Health consequences of alcohol use		The harmful use of alcohol		Alcohol in pregnancy and FAS	
	Draft 1	Final Draft	Draft 1	Final Draft	Draft 1	Final Draft

1	60	100		40	100		83.3	100	
2	40	100		40	100		80	100	
3	40	100		0	83.3		71.4	100	
4	60	100		33.3	100		66	100	
5	40	100		33.3	100		100	100	
Mean	48	100		29.3	96.6		80.1	100	

### 5.3.3 Readability results

The readability results as published by the website selected in section 4.4.1.2 are presented in Table 32. In each table, the results for the first draft and the final HIL are presented. Based on these results, those of the CLI were significantly higher than the other readability test results.

**Table 32: Readability tests of the three HILs**

<b>Health consequences of alcohol use</b>							
	SMOG Index	Flesch-Kincaid	Gunning-Fog	Automated Readability Index	Coleman-Liau Index	Flesch-Kincaid reading ease	Average Grade level
Draft 1 Score	11.2	12	13.6	11.2	10	46.6	11.6
Interpretation	Grade 11	Grade 12	Hard to read	15 – 17 years old	10 <sup>th</sup> grade	Difficult to read	Easily understood by 16 to 17-year olds.
Final Draft	5.9	6	8	4.7	12.6	64.6	7
Interpretation	Grade 5-6.	Grade 6	8 <sup>th</sup> grade	Understood by 8-10-year olds. 3 <sup>rd</sup> to 4 <sup>th</sup> grade.	Understood by 12 <sup>th</sup> to 13 <sup>th</sup> grade.	8 <sup>th</sup> & 9 <sup>th</sup> grade. Easily understood by 13- to 15-year-old students.	13 – 14 year olds
<b>The harmful use of alcohol</b>							
Draft 1 Score	11.35	12	15.8	13.9	11.25	43.4	12.9
Interpretation	Grade 11	Grade 12	College		Understood by 11 <sup>th</sup> grade.	Difficult to read.	Easily understood by 17 to 18-year olds.
Final Draft	7.1	7.3	9.8	6.6	13.4	59.3	9
Interpretation	Grade 7	Grade 7	High school	5 <sup>th</sup> to 6 <sup>th</sup> grade. 10 – 12 yr olds.	Understood by 13 <sup>th</sup> grade.	10 <sup>th</sup> to 12 <sup>th</sup> grade. Fairly	Easily understood

			junior and senior			difficult to read.	by 14 to 15-year olds.
<b>Alcohol in pregnancy and FAS</b>							
Draft 1 Score	11.7	14.6	16.5	17	12.6	46.3	14
Interpretation	Grade 11-12.	Grade 14 to 15.	College senior to graduate	College. Difficult to read	Understood by 12th to 13th grade.	College. Difficult to read.	easily understood by 19 to 20-year olds,
Final Draft	6.3	5.4	7.6	5.5	12.4	71.6	7
Interpretation	Grade 6	Grade 5	7 <sup>th</sup> to 8 <sup>th</sup> grade	4 <sup>th</sup> to 5 <sup>th</sup> grade. Understood by 9-11 yr olds.	Understood by 12 <sup>th</sup> grade.	7 <sup>th</sup> grade. Fairly easy to read.	easily understood by 12 to 13-year olds.

**5.3.3.1 Overall mean readability scores**

Table 32 shows a direct comparison of the overall document readability between the first drafts and the final HILs. The table also shows the actual scores and their interpretations, and the improvement in readability results. The readability level for all the first draft HIL 1, 2 and 3 was Grade 11.6, 12.9 and 14, the readability level decreased to Grade 7, 9 and 7 in the final HILs respectively. These materials are therefore readable at middle school level.

**5.3.4 Final HIL**

Three dual-purpose HILs were designed to be used for both educating and informing support staff on a series of leaflets based on the theme topic ‘Harmful use of alcohol’. All leaflets were designed to have a unified ‘look and feel’ and showcases harmful use of alcohol concerns.

**5.3.5 Translation**

Translation of the HIL into isiXhosa and Afrikaans which are the two main local languages has been initiated. The HILs will be distributed to all 40 peer educators to use in reaching out to the 1500 members of the support staff in the Workplace Health Promotion Programme on Alcohol, as a part of institution’s wellness strategy for employees, mainly the support staff.

**5.4 Collaboration with Drama Department**

**5.4.1 Ice breaker**

People got to know each other, engaged and comfortably interacted with each other.

**5.4.2 Monologue**

The participants identified the following key points from the monologue:

## **People will turn to alcohol when they are under stress**

*“When people cannot cope with stress they will turn to alcohol, and it seems like it is an ongoing thing.” CDD2*

*“The man in the scene drinks alcohol because of the stress he is under raising his daughter.” CDD3*

The participants were allowed to ask questions to get an insight into the characters

## **People who drink alcohol may be in denial**

Q1. *Do you think that you have a drinking problem? – CDD3*

Man replies, *“No, I do not have a drinking problem I drink once or twice.”*

Girl replies, *“I function well so I do not think so.”*

## **Use of alcohol does not help when**

Q2. *Why choose alcohol as a way of dealing with these issues? CDD2*

Man replies, *“I believe that alcohol will always be there for me and will not let me down.”*

Q3. *“But does it help?” CDD3*

Man replies, *“It’s not helping to be honest, at work things are falling apart, even at home.”*

## **Alcohol effects on body**

Q3. *So, what does the alcohol do to your body? CDD2*

Man replies, *“Every Monday it is difficult to get up for work.”*

Girl, *“I always have a headache.”*

### **5.4.3 Poster on alcohol effects**

Effects of alcohol listed by participants were: Cancer; ulcers; loss of balance; damage to liver; brain damage; bad breath; yellowing of teeth; weight gain; withdrawal symptoms if they do not drink alcohol; body tired; diabetes; hearing impaired.

### **5.4.4 Role play (Health and safety meeting)**

Interventions proposed by the group:

- Referral to the Counselling Centre at the institution
- Referral to the Alcoholic Anonymous (AA)
- Reach out as colleagues to make him aware of consequences including suspension and risk of losing his job and how that will affect his family.



- Notifying management so they can try get him help and make him aware of the consequences of drinking alcohol at work and also how the university spends money during the days he is absent.

#### 5.4.5 Short play

The peer educators provided responses below on what they thought the man with the alcohol abuse problem character was thinking after seeing the girl who was drunk:

*“Is this how I am when I am drunk?” CDD2*

*“When I am drunk I always fall like this?” CDD2*

*“How does this affect her family?” CDD3*

*“Think about your children.” CDD3*

*“Think about your future.” CDD3*

*“I think maybe my colleagues were right.” CDD3*

#### 5.4.6 Reflection

Participants now identified that alcohol has more than health effects, including economic and social effects. The effects further identified include absenteeism at work which can result in suspension and eventually loss of a job, which can affect the family.

#### Additional comments

Participants found the workshop helpful and educative. They suggested that this be used as a tool to reach out to a larger group and can also help others.

The 2<sup>nd</sup> workshop with the peer educators demonstrated more knowledge on the alcohol topic since they had been collaborating with the researchers.

### 5.5 Intervention workshop

#### 5.5.1 Workshop demographics

The entire peer educator group were invited to attend the 4-day workshop. Table 33 below summarises the demographics of the participants. 33 peer educators attended the workshop, 28 were female and 5 male. Their ages ranged from 29 to 64 years of age. 32 participants were first language isiXhosa speakers and 1 an Afrikaans speaker. Their highest educational level ranged from Grade 8 to a tertiary diploma. All members were employees at Rhodes University at the time of data collection.

**Table 33: Demographics of peer educators who participated in the four day workshop**

Demographic Parameter		Participants, n(%)
Gender	Male	5 (15.2)
	Female	28 (84.8)

<b>Age (years)</b>	<b>&lt;30</b>	0 (0.0)
	<b>20 – 30</b>	1 (3.0)
	<b>31 - 40</b>	8 (24.2)
	<b>41 – 50</b>	16 (48.5)
	<b>51-60</b>	7 (21.2)
	<b>&gt;60</b>	1 (3.0)
<b>Race</b>	<b>Black</b>	32 (97.0)
	<b>White</b>	0 (0.0)
	<b>Coloured</b>	1 (3.0)
	<b>Other</b>	N/A
<b>First (home) language</b>	English	0 (0.0)
	Afrikaans	1 (3.0)
	IsiXhosa	32 (97.0)
<b>Highest level of education</b>	No education	0 (0.0)
	Grade 1-7	0 (0.0)
	Grade 8-12	27 (81.8)
	Additional/ formal courses attended	6 (18.2)
<b>Total number of participants</b>		33 (100)

### 5.5.2 Participant knowledge on alcohol use

The peer educators were given a questionnaire to determine their knowledge of harmful use of alcohol practices before and after the workshop. 23 peer educators of the 33 who attended the workshop, responded to the questionnaire. The results are shown in Table 34 below. The questionnaire was also given to them to complete immediately after the workshop had been completed and also three months after workshop had been completed for knowledge retention.

**Table 34: Peer educators knowledge scores**

Question	Frequency (%) [n%]											
	Answered Yes						Answered No					
General												
Are you aware of any services/organisations/agencies that offer advice/support on alcohol related issues?	21						2					
What is the legal age to drink alcohol in South Africa?	19						4					
Have you seen any health information on alcohol in the last three months?	12						11					
	Answered correctly n (%)			Answered Wrongly			Answered Do not know			Did not answer		
	<i>Pre-intervention</i>	<i>Post-intervention</i>	<i>P- Post intervention</i>	<i>Pre-intervention</i>	<i>Post-intervention</i>	<i>P- Post intervention</i>	<i>Pre-intervention</i>	<i>Post-intervention</i>	<i>P- Post intervention</i>	<i>Pre-intervention</i>	<i>Post-intervention</i>	<i>P- Post intervention</i>
Which organ is the site of the greatest absorption of alcohol?	1 (4.3)	1 (4.3)	1 (6.3)	21	22	15	1					
Drinking milk before drinking an alcoholic beverage will slow the absorption of alcohol into the body.	6 (2.6)	10 (43.5)	6 (37.5)	4	9	4	12	2	5	1	2	1
Drinking of alcoholic beverages is a commonly accepted drinking pattern in this country.	10 (43.5)	10 (43.5)	9 (56.3)	7	12	3	3	1	2	3		2
Alcohol is not a drug.	18 (78.3)	20 (87.0)	15 (93.8)	4	3	2	1					
Some fatal highway accidents are alcohol related.	19 (82.6)	23 (100)	15 (93.8)	2		1	2					

Liquor diluted (with drink or juice) will affect you faster than liquor drunk undiluted.	8 (34.7)	14 (60.9)	8	7	6	3	7	2	5	1	1		
A person cannot become an alcoholic by just drinking beer.	15 (65.2)	16 (70.0)	11	6	5	4	2	1	1		1		
Moderate consumption of alcoholic beverages is generally not harmful to the body.	7 (30.4)	8 (34.7)	9 (56.3)	13	13	3	3	2	4				
Eating while drinking will have no effect on slowing down the absorption of alcohol in the body.	12 (52.2)	15 (65.2)	8 (50.0)	6	7	7	4	1	1	1		1	
Drinking coffee or taking a cold shower can be an effective way of sobering up.	8 (34.8)	12 (52.2)	6 (37.5)	9	11	7	6		3				
Alcohol has the same effect on everyone.	10 (43.5)	10 (43.5)	4 (25.0)	12	13	12	1						
<b>Questions on Leaflet 1 'Health consequences of alcohol use'</b>													
What areas of the body are affected by alcohol consumption?	20 (87.0)	22 (95.7)	14 (87.5)	3	1	1						1	
Which of these is <b>NOT</b> a long term effect of alcohol abuse?	10 (43.5)	13 (56.5)	2 (12.5)	11	9	11			2	2	1		
Which one is <b>NOT</b> a sign or symptom of alcohol abuse?	15 (65.2)	18 (78.2)	10 (62.5)	6	4	4			1	2	1		
Which organ is affected when alcohol misuse causes cirrhosis?	10 (43.5)	17 (74.0)	10 (62.5)	12	4	5	1		1		2		
How can one help prevent alcohol related problems?	18 (78.3)	19 (82.6)	12 (75.0)	5	4	3						1	
How do you think drinking alcohol regularly affects the following?	Risk of heart disease	18 (78.3)	22 (95.7)	14 (87.5)	1	2	1	2			2	2	
	Blood pressure levels	19 (82.6)	21 (91.3)	11 (68.8)	2	1		1			1	1	5
	Risk of cancer	17 (73.9)	21 (91.3)	10 (62.5)	2	1	1	2			2	1	5
Many people drink to escape from problems, loneliness and depression.	21 (91.3)	23 (100.0)	13 (81.3)	1						1		2	

Many people drink for social acceptance, because of peer group pressures, and to gain adult status.	21 (91.3)	23 (100.0)	11 (68.8)	1		2	1					2
Slurred speech, nausea and vomiting are short term effects of alcohol.	18 (78.3)	21 (91.3)	10 (62.5)	2	1	3	2	1		1		3
<b>Questions on Leaflet 2 'The harmful use of alcohol'</b>												
Drinking alcohol can affect	20 (87.0)	21 (91.3)	13 (81.3)	2	2	2				1		1
Select illnesses which are commonly contracted by the chronic drinker.	13 (56.5)	22 (95.7)	9 (56.3)	6	1	6	1			3		1
<b>Harmful use of alcohol...</b>	Does <b>NOT</b> increase accidental injuries	16 (70.0)	21 (91.3)	12 (75.0)	4	1	2			3	1	2
	Does negatively affect your job	17 (74.0)	21 (91.3)	12 (75.0)	2	1	2			4	1	2
	Can lead to abuse of children and family members	20 (87.0)	23 (100.0)	13 (81.3)			1			3		2
	Does <b>NOT</b> affect road accidents because of drinking and driving	16 (70.0)	21 (91.3)	12 (75.0)	2	1	2	1		4	1	2
	Can negatively affect families and earning	19 (82.6)	22 (95.7)	13 (81.3)			1			4	1	2
<b>Questions on Leaflet 3 'Alcohol in pregnancy and foetal alcohol syndrome (FAS)'</b>												
What are the signs and symptoms of foetal alcohol syndrome (FAS)	19 (82.6)	19 (82.6)	10 (62.5)	3	4	5	1					2
<b>If a person drinks alcohol during pregnancy</b>	the alcohol can reach the baby	17 (74.0)	23 (100.0)	14 (87.5)	4		1			2		2
	The child may be born early (premature)	20 (87.0)	22 (95.7)	14 (87.5)	2			1			1	3
	It will <b>NOT</b> affect the baby	19(82.6)	22 (95.7)	12 (75.0)	1		2	1		2	1	3
What should a person do if they have been drinking alcohol during pregnancy?	19 (82.6)	20 (87.0)	13 (81.3)	2	3	2				1		2
Mean	15.2 (66.1)	18.1 (78.8)	10.5 (65.6)									

The results from the paired student t test are shown in Table 35 below.

**Table 35: Student t test results from the workshop**

T test for dependant samples Marked differences are significant at $p < 0.0500$ Null hypothesis ( $H_0 : \mu_d = 0$ ) vs alternative hypothesis ( $H_1 : \mu_d \neq 0$ )		
	Variable	
	Variable 1 (pre-intervention)	Variable 2 (post-intervention)
<b>Mean</b>	15.1765	18.1176
<b>Variance</b>	26.3316	29.2585
<b>Standard deviation</b>	5.1314	5.4091
<b>N</b>		34
<b>Critical value</b>		2
<b>Standard deviation diff</b>		3.7749
<b>T</b>		-2.3002
<b>df</b>		66

At 66 degrees of freedom, an absolute value of the calculated t exceeds the critical value ( $2.3002 > 2$ ), hence we reject  $H_0$  and conclude that the intervention (workshops) had an effect (since the means are significantly different at  $p < 0.05$ ) and made a difference at the 5% (the 0.05 alpha level) level of significant.

#### 5.5.2.1 Participant knowledge on referral information

The participants demonstrated knowledge on structures available for referral in alcohol use issues. Table 36 below shows the increase in knowledge on the services/organisations, agencies that offer support on alcohol related issues.

**Table 36: Pre- and Post- responses for available referrals**

<b>Response given</b>	<b>Families South Africa FAMSA</b>	<b>Fort England Psychiatric hospital</b>	<b>Alcoholics Anonymous (AA)</b>	<b>Rhodes Counselling centre</b>	<b>Wellness specialist</b>	<b>Substance Abuse Treatment unit SATU</b>	<b>Psychology Office</b>	<b>Peer educators</b>
Pre-intervention <b>n=30</b>	15	8	10	3	3	1	3	1
Post-intervention <b>n=26</b>	16	9	13	2	3	2	1	
Post-post intervention <b>n=16</b>	5	3	4	1	2	1		

### 5.5.3 Other themes arising from the workshops

#### 5.5.3.1 Role of culture in alcohol use

From the discussions it was evident that culture played an important role in drinking alcohol. The participants who were predominantly isiXhosa highlighted that drinking is more acceptable in the elderly than in younger people.

*“Young woman drinking in Xhosa is unacceptable, but on the old women we were raised into thinking it is acceptable.” WSD1-3*

*“As an old woman, you earn the right to drink at a certain age. Rewarding in your older age, you have earned the status.” WSD1-3*

*“Culture makes us comfortable – makes it okay for us to think that are culturally okay are right.”*

*“At certain cultural events we make and drink traditional beers that are supposed to be drunk by everyone traditionally.”*

After these issues were raised, the facilitator probed the participants by asking how to confront these cultural norms, and the following were suggested.

*“We can educate them to explain the consequences of alcohol use, the importance of health more than status.” WSD1-3*

*“We can help eliminate stereotypes, find a way to break barriers like age and cultural barriers.” WSD1-3*

*“Get other people involved like older people who can address these issues.” WSD1-3*

#### 5.5.3.2 Drinking alcohol during pregnancy

The peer educators when showed a picture of a pregnant woman drinking alcohol mentioned the effects that it will have on the baby. The peer educators responded showing sensitivity to the matter and showed knowledge of the effects of alcohol use during pregnancy:

*“This is abuse because the child has no choice for the baby.” WSD1-3*

*“Child with foetal alcohol syndrome has to go to special school. They did not have a choice.” WSD1-3*

#### 5.5.3.3 Confidentiality in peer education

A key concern that came up from the workshops was the issue of confidentiality. This was one of the reasons why some staff do not attend some of the health promotion initiatives. A key stakeholder highlighted the importance of maintaining confidentiality of information:

*“Every matter is confidential, once that trust is broke, it will be difficult to get back.” WSD3-3*



#### 5.5.3.4 Time constraints

“Boss said you cannot go, what about your job? Therefore, will not be able to attend some meetings.” WSD3-3

#### 5.5.4 Role play

The peer educators assumed different roles, and below are some role plays that were acted out:

##### Roleplay based on HIL 2

A man came to work under the influence of alcohol, a PE approaches him and takes him aside to talk to him and first tries to find out why he drinks and the risks of alcohol (domestic violence, absenteeism, dismissal, affects the family because they are a the bread winner). When doing a follow up, he finds he is still abusing alcohol. I refer them to FAMSA or Alcoholic Anonymous.

##### Role play based on HIL 3

1. PE saw a pregnant woman drinking, educated the woman on the dangers of alcohol to both the foetus and the mother. PE suggested counselling.
2. PE approaches a pregnant woman wanting to know the reasons for drinking and also if she has been visiting the clinic. But the pregnant woman is very defensive about her drinking problem, and not ready to acknowledge the problem. PE attempts to find the underlying cause and also provides information on the dangers of drinking during pregnancy. PE is not judgmental and listens to the pregnant woman; offers help, introduces the pamphlet and also suggests referrals.

From the role plays it can be seen that the peer educators used techniques based on previous experience in the HIV/AIDS programme. Below are some key points to consider during an intervention:

- Do not judge how the other person is feeling  
*“Avoid making it seem like, I am good because I do not drink, and you are a bad person because you do.” WSD2-2*
- Listening and not assuming  
*“It is important to listen to what the person is saying and not judge them, I have seen that this helps a person to open up more about their situation and for me to understand their situation better so I can help.” WSD2-2*
- Importance of having a knowledge base  
*“It is nice to know information before an intervention that is why this workshop, the manual and leaflets are important.” WSD3-3*
- Be approachable  
*“Work on approach, build communication, communication should be from both sides.” WSD2-1*
- Follow up  
*“You should follow up on the person because sometimes you cannot do everything in one day.” WSD2-2*
- Use of health education material

*“Start by conversing and introduce the leaflet later.” WSD2-2*

- Know root cause leading to alcohol abuse  
*“Know about the person is it stress, relationship or financial?” WSD2-2*
- Providing options for the person and involving them in the process  
*“Ask questions like; What can we do or what can you do? What do you think? Did you know?”*
- A key stakeholder suggested referrals and use of available structures during peer educator work.  
*“If a situation is beyond you or requires professional help we can refer to the wellness officer, counselling centre for psychological problems, Health care centre for health related issues and FAMSAs for social related problems.” WSD3-3*
- Culture sensitivity  
*“Be sensitive to other people’s cultures, do not try to impose your culture on other people, this can cause conflict.” WSD4-2*

The participants were also keen to take the programme back to the society:

*“People back in the community lack awareness, so it is important to popularize these programmes and networking. Going back to the society and not just focusing on Rhodes.” WSD2-2*

#### **5.5.5 Language editing and graphic fix ups**

After language editing and fixing up of the graphics and any other spatial issues, the final HILs were produced. The three HILs are Appendices 12, 13 and 14 in the Appendices section. The poster designed from the HILs and the trainer’s manual is shown in Appendix 15.

### **5.6 Training manual**

During the FGDs one of the key points that came out of this was that the peer educators wanted to gain more knowledge on intervention methods.

*“Since we already talked about the diseases that can be caused by alcohol, I think if we can have suggestions on how people can stop drinking and how we can help?” FGD2*

In response to this a training manual was designed and a workshop was done.

#### **5.6.1 Feedback received**

##### **Use of clip art**

The peer educators preferred the use of real people as images to clip art as clip art was not clear.

*“I think pictures with real people will be more attractive than these icons...it does not really relay the message.” PE1*

*“When I saw the picture, I thought this must be a picture of a foetus in the womb, but it was not clear, so I had to go and read to understand it was a pregnant lady.” PE2*

##### **Contents page**

The peer educators suggested a contents page, which had been overlooked by the researcher, so that tells the peer educators what the manual is about.

*"It would be nice to have a contents page, so I know what is in this manual and also, so I can easily find information." PE3*

### **Use of tables and illustrations**

The peer educators encouraged the use of illustrations, saying that they helped them to understand and they found them easier to read.

*"Rather than having dry reading with a lot of information that would make a person lose interest. But if it is phased like this in columns, I have also liked the cycles, the arrows, the up and downs... they allow you to notice things easily and easier to learn. When you look at it, then you do not look so bored. And the pictures as well, they make you interested to see what is going on." PE2*

*"I really like the use of the cycles and pictures, it is really attractive." PE5*

### **Expectations of what participants will learn in a chapter**

The peer educators found the introductory sentences useful that mentioned what the participants will learn.

*"I like that each chapter tells me what I will be able to understand after reading it, I find it interesting to know what I will be able to do after reading." PE4*

### **Relevance**

The peer educators shared experiences based on the content of the manual.

*"I like what they have done with the cover page, because it reinforces what we already know, have someone going through these stages so for me to understand what is going on, there is relevance.... You know that when someone has been drinking Saturday and Saturday then they miss work, so it is those things that attract you." PE4*

### **Importance of the trainer's manual**

The peer educators identified the importance of the manual as a book they would use as a reference for information.

*"When you are faced with questions or these situations you need to have answers and the facts to combat myths. So, this manual is something we will definitely need to address issues or future questions because people will ask you questions as a peer educator." PE6*

*"When faced with questions, I can use the trainers' manual to find the information rather than running to google or searching elsewhere for information." PE4*

*“It is important to have information like this, to have knowledge, facts and knowledge. At the end of the day I must have that information for reference.” PE5*

### **5.6.2 Sections covered**

The resulting facilitator’s manual (Appendix 16) was divided into ten sections, with information in each section subdivided according to points relevant to the sub-sections.

## **BACKGROUND**

The purpose of the manual was explained in this section.

### **Chapter 1**

This section explained why the training resource had been developed for the Rhodes University peer educators; the causes and health risks of alcohol abuse and also the effects of alcohol at the workplace were discussed.

### **Chapter 2**

This chapter explained the meaning of brief interventions, what happens in a brief intervention using the F.R.A.M.E.S. (Feedback, Responsibility, Advice, Menu, Empathy, and Self-efficacy) model. The stages of behaviour change and suggestions of what a peer educator can do at each stage were explained.

### **Chapter 3**

An activity was included in this chapter that would result in a discussion of the myths and stereotypes associated with alcohol and population sub-groups including different cultures. Common myths associated with alcohol use were discussed in this section providing in detail the facts related to these myths and beliefs.

### **Chapter 4**

Alcohol units were explained in terms of the different forms alcohol comes in (spirits, wine, lagers). The average drinking limits for adults were also shown and also explained using the types of alcoholic drinks. Physical, psychological, social and financial benefits that result from cutting down alcohol were listed.

### **Chapter 5**

The meaning and some signs of alcoholism and how hazardous drinking affects health were listed in this chapter. Activities were included; one required the use of the *Health consequences of alcohol* leaflet and the second was a discussion on ‘*Do people who drink irresponsibly know the consequences?*’

### **Chapter 6**

This section covered the liver functions, stages of liver damage due to alcohol use including the development of fatty liver and liver cirrhosis.

## **Chapter 7**

Harm reduction due to harmful use of alcohol was the main topic of this chapter, the harm reduction alcohol pyramid, pointers to take note of during alcohol consumption and options to reduce overall consumption were covered including drinking and driving. An activity titled 'Talking wall' was also included in this section. This activity would require the individuals to write down thoughts on particular alcohol related topics which would be stuck on a wall and grouped together and lead into a discussion.

## **Chapter 8**

This chapter was on alcohol during pregnancy, its effects on the foetus and encouraged avoiding alcohol during pregnancy.

### **Overall key learning points**

A summary of the main points was listed to help the peer educators remember what is in the manual and assist in passing on the ideas to others.

### 5.6.3 Readability tests

The readability tests for the manual are available in table 37 below

**Table 37: Interpretation of readability results from each section of the trainer’s manual**

Section	Name of test and readability score						Average level and interpretation of score
	Flesch Kincaid Reading Ease	Flesch Kincaid Grade Level	Gunning Fog Score	SMOG Index	Coleman Liau Index	Automated Readability Index	
BACKGROUND	21	15.4	20.9	14.7	16.2	14.4	16 easily understood by 21-22yr olds
1.1 Why has this training resource been developed for the Rhodes University peer educators?	27.9	15.9	19.3	14.4	15.6	16.8	16 easily understood by 21-22yr olds
1.2 Causes of alcohol abuse	53.2	6.8	9.8	5.4	14.9	5.2	8 easily understood by 13-14yr olds
1.3 Health risks of alcohol	36.9	9.9	13.9	8.8	16.7	8.3	12 easily understood by 17-18yr olds
1.4 Alcohol at the workplace	8.6	12.9	18.7	7.4	22.8	11.1	15 easily understood by 20-21yr olds
2.1 What is a brief intervention?	41.6	12.2	15.3	11.4	15	12.7	13 easily understood by 18-19yr olds
2.2 Stages of behaviour change	53.1	10.9	14	10.3	12.5	11.5	12 easily understood by 17-18yr olds

3.1 Myths associated with alcohol	48.7	10.2	13.1	9.7	13.8	9.7	11 easily understood by 16-17yr olds
4.1 What is a unit?	74.2	5.5	8	6	6.3	14	5 easily understood by 10-11yr olds
4.2 What are the drinking limits for adults?	73	6.1	8.1	6.2	8.1	3.7	6 easily understood by 11-12yr olds
4.3 Physical benefits from cutting down	60.7	6.1	7.5	5.1	12.9	4.1	7 easily understood by 12-13yr olds
4.4 Psychological, social and financial benefits	55.1	6.8	8.9	5.7	15	5.8	8 easily understood by 13-14yr olds
5.1 Alcohol dependence or alcoholism	58.4	11.6	15.8	10.8	8.3	10.9	11 easily understood by 16-17yr olds
5.2 Some signs of alcohol abuse or dependence	55.1	6.8	8.9	5.7	15	5.8	8 easily understood by 13-14yr olds
5.3 Harmful use of alcohol	36.3	11	14.2	9.8	17.5	10.9	13 easily understood by 18-19yr olds
6.1 The liver and harmful use of alcohol	61.8	7.6	10.8	7.9	13.1	7.7	9 easily understood by 14-15yr olds
7.1 Harm reduction due to harmful use of alcohol	63.3	8	10.5	8	10.6	6.8	9 easily understood by 14-15yr olds
8.1 What happens when alcohol enters the body during pregnancy?	56.1	10.4	12.7	9.2	12.6	11.3	11 easily understood by 16-17yr olds

8.2 How much alcohol should one drink during pregnancy	59	8.7	11.3	8.5	10.6	7.1	9 easily understood by 14-15yr olds
8.3 Alcohol damage to foetus	45	10.4	13.7	9.8	14.9	10.1	12 easily understood by 17-18yr olds
8.4 Facial features resulting from alcohol use during pregnancy	20.3	15.6	19.8	14.1	18.4	16.4	17 easily understood by 22-23yr olds
8.5 Behavioural problems	75.5	5.2	8	6	9.8	4	7 easily understood by 12-13yr olds
8.6 Central nervous system	53	9.6	12.2	8.9	14.2	10	11 easily understood by 16-17yr olds
Overall key learning points	68.8	6.8	9.6	7.7	10.3	5.7	8 easily understood by 13-14yr olds
Average scores	50.3 For 10th to 12th grade Fairly difficult to read.	9.6 Fairly easy to read	12.7 Fairly difficult to read	8.8 Easy to read	13.5 College	9.3 Fairly easy to read	10.6 understood by 15 to 17 year olds



Table 37 above shows the results from the trainer's manual. From the results computed for the different sections, 5 sections had a high reading level, i.e. an average grade level greater than 12. The overall document readability was fairly difficult to read, requiring at least high school level abilities.

To make the manual more easily readable, the following items were added. These were not included in the readability formulas:

- **Addition of pictures** – pictures with annotations were used to enhance visual understanding. Pictures were referred to in the accompanying text.
- **Use of bulleted sentences** - Long continuous sentences were avoided; instead bulleted and numbered, short, simple sentences were used where appropriate and also introducing one idea per sentence.
- **Use of illustrations** – lists and cycles were done where appropriate to emphasise main ideas in a more readable and sequential manner. Speech bubbles and illustrations were used to make the material more appealing and to increase reader retention.
- **Definition of difficult words** – foreseen difficult words were further explained.
- **Use of active voice** – to make the material more readable since it was for second language English speakers and also this reduced the length of the sentences.
- **Punctuation** – was used to shorten sentences, speed up reading and clarify the meaning of words and sentences.
- **Subtitles** – long passages were divided into shorter parts with subtitles in bold to allow the reader to comprehend major points and understand the material more easily.
- **Text boxes** - The number of text boxes was increased from five text boxes in the draft facilitator's manual to 15 in the final facilitator's manual.
- **Medical jargon** - The use of complicated medical terms was avoided. In instances where the words could not be avoided, a definition or detailed explanation of the meaning was given.
- **Summary given** – the important points were given in point form to allow the reader to know the key points covered in the manual.
- **White space** – text was not crowded and appropriate font size of 12 with spacing of 1.5 was used.

## 5.7 Evaluation and feedback

Overall, the initiative received positive feedback with participants describing it as useful, beneficial and empowering. The participants showed confidence with their newly acquired knowledge and skills. Some of their responses were:

*"I did not know some of the things that I learnt in the workshop." PP2*

*"I have also learnt stuff on alcohol, now if I see someone who is about to drive while drinking, I always say something, about the dangers of drinking and driving, be careful. So, I am always cautious after the workshop." PPI3*

*"I have learnt a lot, because I have a husband who drinks, so they are things that you turn a blind eye to. You now become bolder to say maybe "you are not supposed to be driving whilst drinking, so maybe let your wife drive because," now you are more aware of the effects." PPI4*

The participants also shared the lifestyle changes they had incorporated into their own lives as a result of this initiative:

*"I am now more vigilant in my health, I avoid unhealthy behaviours like second hand smoking." PPI-1*

The peer educators shared what they had learnt with other peer educators who could not attend the workshop, other support staff and in their families:

*"When you give that information it is empowering, you get the feeling that you know something that is very helpful that you can share with others. Even if they will not use it at that moment, it will shed some light because people may not know the dangers of alcohol because they think they do not drink too much, but having that information and how alcohol can affect your health." PPI3*

*"It is not easy to just tell people to stop drinking. They told me that they misuse their finances, and this affects their families and also the way they work. It is challenging but I am trying to educate them to go towards the positive side." PPI6*

*"What I have noticed is that people think they are in control of what they are doing. When you start to ask questions like do you realise the consequences and what this does to your body? It is only then when they start to be attentive." PPI 2*

*My friend also getting information on behavior when drinking also affected her drinking behavior because now she has reduced her drinking dramatically. She was defensive and now I am not the only person who was telling her, but also got the same information from others about aggression and violence, which is encouraging." PPI5*

*"In my house I have taken the HILs home so that my children can read also for themselves and to educate my children as well." PPI7*

*"It is important for us to push this further, we got a proposal to combine the dining halls and bigger audience for an hour or so for peer educators to provide information and raise awareness." PPI5*

Peer educators also highlighted the use of HILs during the intervention:

*"The pictures on the pamphlets are really helping more than the words because most people can't read, the pictures are highlighted which catches the people's attention." PPI5*

## 6 DISCUSSION

### 6.1 Introduction

This chapter is a discussion of how health promotion fits into the global agenda and demonstrates the importance of the findings in Chapter 5. It is necessary to explore why these outcomes occur and how these results compare with existing knowledge and literature with regard to workplace health promotion.

#### 6.1.1 Background

The SDG target for NCDs is based on previous UN and WHO declarations including the UN Political Declaration on NCDs that provide strategic direction. The UN Political Declaration on NCDs convened in September 2011 included strategies in advancing the implementation of interventions in order to reduce the impact of the common NCD risk factors, where appropriate, by involving all relevant sectors, including communities, by promoting and creating an enabling environment for healthy living through workplace wellness programmes (UN, 2012). Based on the UN 2011 political declaration on NCDs, South Africa set health targets in the *Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17*. In 2016, the United Nations also convened another Political Declaration on ending AIDS and has set the world on the Fast-Track to end the epidemic by 2030. Due to the quadruple burden of diseases and the prevalence of HIV/AIDS in South Africa, the staff peer educator groups were formed to give staff access to information, including education about HIV and AIDS in general. Based on the Faculty of Pharmacy's approach towards health promotion, based on the 2011 Political declaration, this project was integrated with the HIV/AIDS programme, piggy backing on the same peer educators for the HIV programme to become peer educators for the NCDs programme.

##### 6.1.1.1 Challenges

Despite evidence from the developed countries in addressing NCDs, the developing countries face challenges unique to the developing world. The fact that many countries with the lowest density of health workers suffer the highest burdens of disease is due to the massive brain drain, resulting in 54 countries having a critical shortage of HCPs, worsens the already depleted healthcare resources in poor countries and widens the gap in health inequities worldwide (Jensen, 2013; Pang, Lansang, & Haines, 2002).

Researchers and health promotion practitioners working in the area of harmful use of alcohol need to bear in mind the severe conflict of interest that exists as a considerable proportion of global marketing targets children and adolescents as well as women in developing countries to promote tobacco smoking and consumption of 'junk' food and alcohol. Therefore, the developed countries will not push with the same force for the NCD agenda like they did in HIV/AIDS because they stand to lose business. The local governments, overwhelmed by the speed of growth, are not keeping pace with ever-expanding needs for infrastructure and services and people are less likely to be protected by interventions like smoke-free laws, regulations to phase out trans-fats, protection against harmful use of alcohol, and urban planning to promote physical activity (WHO, 2017d).

NCDs also present the kind of patterning that the field of health promotion has long recognized, understood, and tried to address with limited funding and capacity (Journal of Public Health, 2011). There is a gap that

exists between policy and practice; for example, findings from a study by the WHO indicate that the price tag for scaled-up implementation of a core set of NCD “best buy” intervention strategies is comparatively low. The total cost of implementing the full set of “best buy” interventions across all LMICs from 2011 to 2025 was estimated to be US\$ 170 billion, at an average of US\$ 11.4 billion per year (World Economic Forum & WHO, 2011). However, Bloom et al. (2013) estimated that \$47 trillion in economic output would be lost due to NCDs by 2030, concluding that “inaction would likely be far costlier than interventions for NCDs (Bloom et al., 2012).

#### **6.1.1.2 Community participation in health promotion**

Community capacity building (CCB) is seen as part of a long-standing health promotion tradition involving community action in health promotion. Its common features are the concepts of capacity and empowerment; bottom-up, community-determined agendas and actions; and processes for developing competence (Raeburn, Akerman, Chuengsatiansup, Mejia, & Oladepo, 2006). Effective health promotion practice places people at the heart of all activities (Department of Health and Human Services, Tasmanian Government, 2017). Community participation is a major principle of people centred health systems, with considerable research highlighting its intrinsic value and strategic importance (George, Mehra, Scott, & Sriram, 2015). In the current study, conducted at Rhodes University, two different approaches have been adopted for health promotion among the workers on campus. The Health Care Centre and institutional Wellness Office, by agreeing to collaborate with the project, the peer educators also became part of the WHPP. The ‘bottom-up’ approach was applied by designing the project to meet the target group needs, ensuring that the strategies and methods used are culturally and socially appropriate or acceptable which has also been shown by studies by Sule (2004). The people centred theory has been applied, strengthening the bonds between the key stakeholders and putting the support staff at the centre of the intervention. By including the top down and bottom up approaches it becomes sustainable even when the project ends.

## **6.2 Workplace health promotion**

With the growing disease burden from NCDs and the associated health concerns and development issues, the South African government adopted the UN political declaration and set 10 targets to be reached by 2020. Within these are strategies to decrease harmful use of alcohol (Department of Health, SA, 2014b). The workplace provides an important entry point for health promotion programmes aimed at the prevention and control of NCDs. Therefore, this workplace health promotion project applying CBPR principles by working in collaboration ‘with’ the Rhodes University support staff and not ‘for’ them, was implemented in response to harmful use of alcohol, which is one the risk factors to NCDs.

The workplace is an important setting for health protection, health promotion and disease prevention programmes. On average, a person working full-time spends more than one-third of their day, five days per week at the workplace (CDC, 2016d). The concept that the workplace is an important arena for health campaigns of many kinds, as well as basic occupational health and safety programmes, has been adopted in this study and in different countries. In India, for example, Arogya World, a US-based non-profit organisation and the Public Health Foundation of India (PHFI), a Healthy Workplace programme, promote workplace wellness, help reduce the burden of NCDs and offer companies a competitive edge via increased talent retention and higher productivity (Arogya World, 2012). The concept of the health promoting workplace is becoming increasingly relevant as more private and public organisations recognize that future success in

a globalizing marketplace can only be achieved with a healthy, qualified and motivated workforce (WHO, 2017).

### **6.2.1 Health promotion policies at Rhodes University**

The university setting offered an ideal place for health promotion programmes because the workers spend a lot of time on the job; an established vehicle of communication already existed due to the peer educating system and Wellness Office; the capability of instituting policies, for example, the Health Promotion Policy that was still in draft form that can foster behaviour change and a healthy work environment; and they already have existing fitness and health facilities. These structures were also observed in other universities (Goetzel & Ozminkowski, 2008; Lynch, Hayes, Napolitano, & Hufnagel, 2016).

A healthy workplace culture also includes having campus policies and a supportive environment that allows for and reinforces participation in the health promotion programme. With health promotion aiming to promote the holistic wellbeing of staff and promote practices that support a safe, healthy and sustainable work environment, the key stakeholders interviewed were aware of the benefits of workplace health promotion policies at the university. Some key stakeholders were not aware of any health promotion policies available and a respondent mentioned that, although health policies may exist, most of the staff may not be aware of them. A study like that of the situation at Rhodes University showed that the lack of information was one of the reasons why workplace health promotion measures could not be implemented or remained unknown to the staff (Ulmer & Groeben, 2005).

The majority of participants in this study mentioned the HIV/AIDS policy which was the only policy that was established and involved peer education, sharing of health information and resources, and providing empathic wellness consultations and coaching for the campus staff community. They were no health promotion policies aimed at raising awareness and preventing NCDs. The results obtained from this study showed that, while there have been efforts at health promotion initiatives made at various levels, there was no set outline to guide their implementation. However, WHPP on NCDs like the current study have been implemented at the university and the HIV/AIDS officer designation has been changed to Institutional Officer to include NCDs and other health related issues. The case of Rhodes University greatly differed from other institutions at which workplace programmes are policy-based and have resulted in successful implementation and outcomes (Barclay, 2015; Després, Alméras, & Gauvin, 2014; Dooris & Hunter, 2007; J. R. Harris, Hannon, Beresford, Linnan, & McLellan, 2014; Kaspin, Gorman, & Miller, 2013; Mchunu, 2012; Scriven & Hodgins, 2011; Tryon, Bolnick, Pomeranz, Pronk, & Yach, 2014).

### **6.2.2 Demographics of peer educators**

#### **6.2.2.1 Age and participation**

Age is an important variable in research. The findings in this study strongly suggest that the age of employees predicts if individuals are most likely to engage in health promotion activities. The majority of people who participated in the health promotion projects were older people. Establishing the connection between older people and education-oriented activities is consistent with the outcomes of a large investigation by McLellan et al. (2009). The study revealed that among the 2023 employees who took part in the study, participants in

health screening assessments were disproportionately older. The probable reason for older employees participating in health education-based projects may be the greater chance of older individuals having experiences of ill health through age related chronic diseases (Shephard, 2000) making them more aware of their health status.

Younger individuals typically perceive themselves as less vulnerable, with fewer health concerns, and evidence in the current study indicates that younger employees are considerably less interested in health promotion projects. This situation has also been observed in issues surrounding HIV/AIDS where younger people feel they are not vulnerable to HIV/AIDS and it happens to someone else and not to them (Bekker & Hosek, 2015; Muula, 2008). South Africa has the highest prevalence of HIV/AIDS in the world and prevention of new HIV/AIDS infection has not been successful with 270 000 new infections in 2016 (UNAIDS, 2016). Lessons can be learnt for the NCD programmes, despite HIV/AIDS being an issue in South Africa, and from policy to practice from government level and other sectors including universities myths still exist which are barriers to health promotion projects. With NCDs being silent killers, they are not seen as serious and therefore a lot more reason why NCD related programmes will fail more than HIV related programmes. Therefore, healthcare practitioners and researchers have to pay special attention to context specific workplace health promotion.

#### **6.2.2.2 Gender and participation**

Gender was one of the variables investigated in this study and gender differences are reflected in the participation of the current health promotion initiative. Approximately 85% of the peer educators were female. Female employees had higher participation rates in health promotion activities, which was consistent with the outcomes of a number of previous studies (Lemon et al., 2009; Lewis, Huebner, & Yarborough, 1996; Petersen, Sill, Lu, Young, & Edington, 2008; Thompson, Smith, & Bybee, 2005).

Different reasons have been associated with why women are more likely to participate in health promotion projects. One author proposed that women are generally more aware of unhealthy lifestyle behaviours, and therefore likely to participate in education-based initiatives when given the opportunity (Vasianovich, van Teijlingen, Reid, & Scott, 2008). A study by Harris & Cale (2007) is an example where female respondents were more likely to participate in the health promotion project than their male counterparts, an outcome that is reflected in the current study results. This finding shows that gender can be a barrier to participation, as most men did not participate. Partially, lower health awareness was one of the reasons why men were less inclined to engage in workplace health projects in some studies (Petersen et al., 2008).

Results from a consumer analysis conducted on the South African population highlighted that women were the most receptive target group, particularly those falling in the Living Standards Measure 3-7 (Eksteen & Mungal-Singh, 2015). The Eastern Cape is one of the poorest regions in the country, and nearly 11% of households in South Africa are run by women over the age of 60. Women are identified as the gatekeepers of their households, especially in a predominantly patriarchal society in the African context, and where women are the primary caregivers to children and to the family (FSA, 2009; Stuart & Achterberg, 1995). In this study, having more women participate was taken as an advantage, keeping a gender responsive HPP (WHO, 2017i) by considering some of these gender norms, because of their circle of influence in their individual

communities. By equipping women with the knowledge and tools gained during health education, it is hoped that these techniques will also be implemented in their own households (McIntosh & Zey, 1989).

### **6.2.3 The CDC workplace health promotion model**

Health education is designed to change the knowledge and behaviour that facilitates health (Raingruber B, 2013). The CDC workplace health promotion model was used to provide support for the intervention that was likely to produce reliable outcomes. This model did not provide a step by step guideline on how to implement the project, therefore this project was run in collaboration with the end users to make the programme context specific. Glanz and Rimer 2005 emphasized that “effective practice depends on using theories and strategies that are most appropriate to a given situation”. This model suited the context of the project as the model was designed for the workplace.

### **6.2.4 Benefits of WHP**

Workplace environments supporting a culture of health are important for helping employees understand, adopt and maintain healthy lifestyles at work and at home (Aldana et al., 2012). Some of the most common reasons why workplaces implement health promotion initiatives are: to raise awareness of health related issues; to reduce the rates of absenteeism; and to increase productivity at the workplace (CDC, 2016d; Goetzel, Roemer, Liss-Levinson, & Samoly, 2008; WHO, 2017m). Findings of this study also support this theory. Positive impacts of programmes designed to improve employee health have also been reported elsewhere (Bertera, 1990; Goetzel & Ozminkowski, 2008; Noblet & LaMontagne, 2006).

### **6.2.5 Facilitating and limiting factors in WHPP**

Several studies have explored the best practices of WHPPs and how managers can successfully implement these programmes (Berry, Mirabito, & Baun, 2010; Merrill, Aldana, Ellrodt, Orsi, & Grelle-Laramee, 2009). Organisations such as The Centers for Disease Control and Prevention (CDC) and The Health Enhancement Research Organization have established guidelines and criteria to assist in conceptualizing, planning, and implementing WHPPs (CDC, 2017c; Mercer, 2012). The CDC WHPP guideline provided a template for successful implementation of this project. In this project, some key principles from the NCD National Multi-sectoral Action Plan (MAP) tool (WHO, 2018o) were also adopted. This tool was designed for the national plan and this WHPP at Rhodes has aligned itself to this national plan following the main steps of this tool that include situation assessment, stakeholder engagement, implementation, monitoring and evaluation.

Our study identified many factors that either prevent or promote the workplace health promotion project mentioned below. The overlapping themes and goals for creating a successful WHPP are synthesized in section 5.2.2 of the Results chapter.

#### **6.2.5.1 Management support**

In the CDC WHPP model and other classic models, management support at all levels is optimal to the success of workplace health promotion programming and includes participation and support from the top levels of management through middle management to the employee level (CDC, 2016d; Merrill et al., 2009). The Rhodes University setting combines many disciplines and many types of professionals. It includes maintenance staff, administrators, and faculty all grouped into unique departments. From the SSIs and FGDs

it showed that management support at different levels would be effective in implementing the project. Different key stakeholders from different departments and disciplines supported this project. Gaining the support of top management for WHP sends out a message that management understands the importance of employee health and is prepared to devote considerable time and resources to identify and address priority health issues. Employees are unlikely to become involved in, or support, organizational health-related initiatives if they feel managers are only superficially interested in the programme and are not genuine in their attempts to enhance employee health (Milner et al., 2015).

#### **6.2.5.2 Needs assessment**

The first stage of the NCD MAP tool was a situation analysis which was adopted in this study by exploring the needs of the target population before implementation of the study. WHPPs are incomplete without an assessment of the needs of the population to be served which is also a crucial step to finding out the health needs of employees, and to involve employees early in the design and development of initiatives. The participants chose personally the project they would appreciate being part of from the health promotion projects available and helped decide on which health promotion initiatives would be conducted. Involvement of representatives from the target recipients of these initiatives is necessary.

Programme planning, driven by the identified needs, determines the types of classes, educational programmes, communication and messages, activities and interventions provided by the programme (O'Donnell, 2002; Wiley, 2010). The current study suggested approaches for the WHPP included providing education which was done through the workshop and use of posters and other health education materials as a means of communicating health messages. These results are similar to the findings by Engbers, Poppel, Paw, & Mechelen (2005) who found positive effects for using strategy. Messages can be tailored for specific activities, with well-being issues targeted for specific audiences, communication must be accurate, informative, and ongoing in order to be successful in promoting behaviour change (Seaverson, Grossmeier, Miller, & Anderson, 2009). The health education material was tailored to the target population. This is discussed further in Section 6.4.

#### **6.2.5.3 Privacy and confidentiality**

Berry et al. (2010) show that a psychologically supportive environment is needed, or should be created, to allow employees to express opinions, ideas and give and receive feedback in a non-judgmental manner, as well as feel comfortable, safe and supported at work. Other studies also showed that effective alignment must also take into account how programmes are planned and implemented, keeping in mind the health literacy of employees, their cultural receptivity, and the need for privacy and confidentiality (Heikkinen, Launis, Wainwright, & Leino-Kilpi, 2006; Ishikawa, Nomura, Sato, & Yano, 2008; Williams, Mason, & Wold, 2001). These results are similar to the findings in this study as the SSIs and FGDs indicated that some staff members would not participate in the studies due to privacy and confidentiality issues. This was one of the factors that resulted in the HIV/AIDS officer being given the new designation of Institutional Wellness Specialist, because of the stigma surrounding it. This barrier was also addressed during the workshops by experts in the psychology field on how maintaining confidentiality results in the maintenance of confidence in peer education. Referrals to other available structures of help, like the Counselling Centre at the university



or FAMSA and AA off-campus, were also suggested in these situations where individuals are hesitant to share their information with peer educators due to privacy issues. The peer education programme requires peer educators to demonstrate confidentiality, and to protect the privacy, confidentiality and security of information provided to them, as some situations they come across are sensitive.

#### **6.2.5.4 Continuity of health promotion programmes**

Programmes that integrate with related human resource functions to include employee assistance programmes, workers compensation and occupational health programmes, and benefits administration can have value. According to Nutbeam (1998), it is essential to investigate the manner in which the programme is implemented. This type of investigation will allow more to be learned and understood with regard to success or failure to achieve defined outcomes. It is also important to show that the programme is meeting the needs of the employee population, as demonstrated in some studies (Berry et al., 2010; Goetzel & Ozminkowski, 2008). In this project, there was consistent monitoring and evaluation of the HPP. This was done during the implementation phase through collection of information (e.g. number of participants) and feedback on the interventions. Following up was also done after the implementation phase assessing progress towards meeting the programme's objectives.

Lack of consistency was one of the reasons why some past WHPPs were not successful in the past. To ensure consistency of the current study, the researchers integrated this project with other departments. Integrating WHPPs with the campus culture should include the alignment of like-minded services within the campus setting to provide programmes that promote healthy outcomes in the workplace (Baun, Mirabito, & Berry, 2011). In this study the integrated approaches that emerged included partnering with the HCC, HKE, Business School, Community Engagement Office, Residential Operations Office and the Psychology Department for the utilization of in-house medical departments to provide WHPP services.

#### **6.2.5.5 Work commitment and lack of time**

The accessibility and convenience of WHPPs matter to employees. The peer educators mentioned that they could not attend some of the initiatives because they clashed with their work schedules, or the venue was far from where they worked, an outcome common to several studies (Kwak, Kremers, Baak, A, & Brug, 2006; Lemon et al., 2009; Mavis, Stachnik, Gibson, & Stöffelmayr, 1992; Wilson, 1990). To overcome this barrier to participation, the researcher scheduled the health promotion project during the majority of the staffs' lunch hour period and called the peer educators on the day of the meeting to confirm the meeting and rescheduled it if there was a clash with other events. In this study, it was observed that participation increased when lunch was provided by the dining halls. In order to make the logistics feasible, to have a common time, and to make the most of the time people have for lunch, the Institutional Wellness specialist decided to use those dining halls most central to the work places of participants. Furthermore, lunch was provided by the dining halls for the FGDs or workshops. The FGD meetings were conducted at a central place on campus where they were able to walk from different parts. The researcher also went to the support staff's place of work during the pilot study to enhance participation.

The key stakeholders mentioned that some barriers to successful WHPP were at participant level. For example, a lack of motivation, commitment or willingness to change one's lifestyle. This emerged during the

SSIs. These results were different from the results gathered during the FGDs where a lack of willingness of the support staff to participate was not mentioned. Different views of supervisors versus employees have been observed in another study, where top management reported that their employees were not interested in health promotion interventions, while the employees reported the opposite (Barclay, 2015).

#### **6.2.5.6 Incentives and motivation**

Incentivizing participation is a primary tool to achieve enrolment and involvement. It is estimated that well over 70% of WHPPs use some sort of incentive system to increase employee enrolment and participation, a recommended component of successful WHPPs (Anderson, Grossmeier, Seaverson, & Snyder, 2008; Kruger, Yore, Bauer, & Kohl, 2007). Incentives are shown to be positively associated with programme involvement (Seaverson et al., 2009). Davey, Fitzpatrick, Garland, & Kilgour (2009) investigated the factors motivating New Zealand university employees to participate in on-site exercise activities. Motivators included actions performed to gain a reward or incentive. Their findings concur with the current study results which determined that incentives encouraged participation, whereas in previous projects attendance and participation increased with incentives. This was a challenge that was raised since the programmes were implemented to benefit the support staff and sometimes these incentives did not exist. Other researchers investigating the value of incentives found that incentives, particularly financial ones, are useful in securing short-term participation, but have minimal effect on long-term continued involvement in a health promotion activity or intervention (Frederick & Ryan, 1993; Seaverson et al., 2009).

#### **6.2.5.7 Benefits of WHP to the organisation**

##### **6.2.5.7.1 Return on investment**

Most organisations are interested in the financial benefits gained by offering WHPPs (McMaster University, 2018; Poole, Kumpfer, & Pett, 2001; Steffick, Fortney, Smith, & Pyne, 2006). Key stakeholders highlighted that the managers would get involved in WHPP because of the cost saving aspects of it, reflected in decreased sick leave and accidents at the workplace and increased productivity. Similar perceptions were seen in a meta-analysis of 56 studies on the economic impact of WHPPs, where 28 focused on healthcare costs, making it the most prevalent concern for businesses and the most common rationale for providing WHPPs (Chapman, Lesch, & Baun, 2007). In a study that reviewed 14 articles that assessed WHPPs, a reduction in sick leave was found in each of the 14 articles (Aldana, 2001). A meta-analysis of 62 studies found that WHPPs represent a very effective approach for reducing medical costs and absenteeism (Chapman, 2012). A decrease in sick leave is the second-most prevalent economic variable and concern to employers when measuring the value of WHPPs. This was also a benefit identified by the key stakeholders in SSIs as sick leave would result in obligations to pay the salary of absent workers or finding and paying for temporary cover.

##### **6.2.5.7.2 Productivity**

Employee engagement, health behaviour, and physical health each contribute to lower absenteeism and higher job productivity (Merrill et al., 2009). These views were shared by the key stakeholders who participated in this study, who suggested that improving workforce health and well-being will result in an increase in worker productivity. Another study looking at work-life benefits and the impact on organisational

behaviours found that providing work-life benefits in employee wellness programmes sends the message of caring for the employee's well-being, which translates into improved work performance and greater commitment to the employer (Neville, Merrill, & Kumpfer, 2011).

### **6.2.6 Factors affecting harmful use of alcohol**

Nowadays alcohol is seen as a normal part of everyday life, and today alcohol products are much more salient, and it is the third leading risk factor for poor health globally (NCDalliance, 2014). Alcohol misuse can harm people other than the drinker and can have negative consequences for society as a whole. The purpose is to avoid excessive drinking to reduce the risks associated with alcohol. Below are some of the effects associated with harmful use of alcohol.

#### **6.2.6.1 Family influence and peer pressure**

Influence from friends is evidenced in the motivation to consume alcohol, due to the need to fit into groups. Alcohol consumption is correlated with parties and celebrations, evidencing the social appeal of alcohol consumption. Out of the listed factors that influence individuals to consume alcohol, a number of the respondents attributed alcohol consumption to peer influence. These findings are similar to a study conducted among the youth by Chen, Chen, Fagot-Campagna, & Narayan (2001), who also found that peer influence is the major factor that influences alcohol consumption. This result indicates that individuals are prone to peer pressure and, for them to be accepted among their peers, they also have to consume alcohol to please them. This increases the likelihood of alcohol consumption among the individuals whose peers are drunkards. Young people are very concerned with the search for friends and identification with a group of people. The concept of group integration is noteworthy among them (Neves et al., 2015). Alcohol is considered a means to facilitate that interaction, acting as a way of socialization. Curiosity is also mentioned as an important motivational factor for alcohol consumption, as the interest is in knowing the feelings and discovering the effects of alcohol. Curiosity has been established as an important motivational factor for alcohol consumption in previous studies (Neves et al., 2015; Olayinka et al., 2016).

The participants of this study also highlighted that parents have some influence on their children, with children observing or mimicking their parents' behaviours. A study by Neeley (2005) showed that expectations develop through direct and indirect experiences with alcoholic beverage and exposure to commercials. Even before a direct experience, expectations are formed about alcohol consumption. The Social Development Model (Catalano & Hawkins, 1996; Lonczak et al., 2001) may provide a partial explanation for this finding as this model argues that young people emulate the normative social behaviours of their primary socializing unit, including drinking. Research has also found that parents who drink alcohol are more likely to exhibit permissiveness toward alcohol use in their adolescent children (Hayes et al., 2004). Parents' permissiveness regarding alcohol use appears to be influential in determining adolescent alcohol initiation and the later transition to heavier drinking. However, an inverse relationship between alcohol use and their children drinking alcohol has been demonstrated by a study by Gilligan & Kypri (2012), which showed the opposite effect of family background influence on drinking behaviours and attitudes. Several participants in the study cited parents' or grandparents' alcoholism having 'put them off', and it influenced the participants' choice to become non-drinkers or very light drinkers.

### 6.2.6.2 Community influences

Poverty stricken environments was one of the themes that emerged as a factor for harmful use of alcohol in this study and was associated with alcohol-related problems. It was mentioned that individuals living in impoverished neighbourhoods may drink alcohol more often than those in more affluent areas as a palliative escape from a stressful living environment. One study found that individuals who lived in a neighbourhood with a poorly built environment, characterized by inferior building conditions, housing, and water and sanitation indicators, were 150 percent more likely to report heavy drinking compared with those living in better built environments (Bernstein, Galea, Ahern, Tracy, & Vlahov, 2007). Another study (Onya, Tessler, Myers, & Flisher, 2012) conducted among rural adolescents in South Africa also highlighted community influences on alcohol use. The results in the study highlighted that feeling affirmed and valued by the broader community appears to protect adolescents against early alcohol use. Traditionally, the health and social behaviours of individuals within rural African communities are strongly influenced by the norms and values of the broader community (Petersen, Bhana, & McKay, 2005). In African communities, the community plays an important role in the rearing of young people and in shaping behaviours (Oheneba-Sakyi & Takyi, 2006). In this context, such as the isiXhosa community, children are viewed as belonging to the greater community rather than just the immediate nuclear family. In this socio-cultural context, feeling affirmed by the broader community potentially has a stronger influence on prosocial behaviours (such as not drinking) than in more urban and Westernized communities where the nuclear family has more of an influence on individual behaviours (Lowe, Foxcroft, & Sibley, 1993).

### 6.2.6.3 Culture

Cultural norms and beliefs are strong predictors of both current drinking and frequent heavy drinking (Brooks-Russell, Simons-Morton, Haynie, Farhat, & Wang, 2014; Caetano & Clark, 1999; O'Grady, Cullum, Tennen, & Armeli, 2011). The results of this study are similar to these findings where participants mentioned the role of culture in alcohol use particularly in the isiXhosa culture. In traditional activities such as beer-drinking rituals, weddings and funerals alcohol is used, and especially home brewed alcohol. The Xhosa's beer-drinking rituals serve to always maintain the cultural unity of the tribe as the Xhosa experience a transition from a family-centred life to an urban one (Black, 2010).

Results from this research also show that the local culture accepted drinking of alcohol more with age. Ahern, Galea, Hubbard, Midanik, & Syme (2008) found that community norms against drunkenness were a more robust and stronger predictor of binge drinking than permissive beliefs held either by the individual or family and friends. If an individual lived in a community that frowns on binge drinking, that individual was less likely to drink, even if he or she believed it acceptable to do so. This was particularly true for women, suggesting gender norms around alcohol use may be a factor. Specifically, past studies found that gender differences in alcohol use may reflect the greater social stigma directed at women who drink (Caetano & Clark, 1999; Kulis, Marsiglia, & Nagoshi, 2012). Although traditionally perceived as a 'masculine' behaviour, binge drinking is now more acceptable among women in African cultures due to urbanization (Freeman & Parry, 2006; Moinuddin, Goel, Saini, Bajpai, & Misra, 2016).

#### **6.2.6.4 Education**

Alcohol consumption was significantly associated with educational level in this study and having a poorer perception of one's own health. Education level is a factor in harmful use of alcohol awareness as students in high school are taught basic but essential information about health that can educate them about the serious health implications of using drugs and alcohol. Therefore not progressing beyond a low educational level was associated with a higher probability to consume alcohol than more educated individuals. This contradicted the results obtained in a national survey in Ghana (Ministry of Health, Ghana & WHO, 2003) that showed that the individuals with higher education were more likely to consume alcohol than those without formal education and the disparities may be due to differences in environment. However, our results were consistent with a national survey by Moore & Littlecott (2015), where alcohol use was associated with low or no education.

#### **6.2.6.5 Unemployment**

The results of the current study indicate that unemployed individuals were more likely to consume alcohol than employed individuals. Specifically, being unemployed was said to increase the chances of alcohol abuse as a means of coping with financial stress triggered by job loss. For most people, unemployment is primarily an economic misfortune. Unemployment for a period of time can also have a detrimental effect on an individual's mental wellbeing and use of alcohol can be used as an adaptation mechanism (Mustonen, Paakkanen, & Simpura, 1994). Prolonged unemployment usually leads to increasing problems. Studies by Popovici & French (2013) and Forcier (1988) show a positive and significant effect of unemployment on drinking behaviours, which supports the outcomes of this study. However, these findings were different from a study conducted that suggested that employed individuals can afford most of the alcoholic beverages so they drink them whenever they feel like drinking alcohol (Norman, 2017). Therefore, income can also have a significant positive relationship with alcohol use and that this relationship also contributes to driving after or while drinking (Keyes & Hasin, 2008).

#### **6.2.6.6 Depression**

The participants in the current study identified stress and depression as factors leading to alcohol use, where individuals use it to deal with or forget about their problems and make them feel good. Associations between alcohol use and severe stress and depression were consistent with previous studies in other countries (Madruga et al., 2012; Milner et al., 2015; Wilcox, 2004). Individuals may initiate or accelerate substance-use behaviours as a way to cope with their stress, negative mood, and suicidal ideation. Using alcohol or other drugs as a coping mechanism is extremely dangerous. This behaviour not only opens the door to dependency but also prevents these individuals from confronting mental health issues in healthy, constructive ways.

#### **6.2.6.7 Advertisements**

Media exposure helps influence social norms about alcohol through advertising, product placements, and stories in a wide range of sources, including movies, television, social media, and other forms of entertainment. Although alcohol sales and marketing are highly regulated, people are exposed to a wide variety of alcohol and liquor advertisements. Recent studies have used robust methodological designs in order to assess the effects of advertisements on alcohol consumption (Ross et al., 2015). In this study

advertising was identified as a factor that increased alcohol consumption due to engaging images and messages in the commercials with the use of alcohol being linked with highly valued personal attributes, such as sociability, elegance, and physical attractiveness. Lifestyle- or image-oriented alcohol advertising has been shown to be more appealing to both adults and adolescents than is alcohol advertising that promotes only product quality (National Institute on Alcohol Abuse and Alcoholism). Kwate & Meyer (2010) found a correlation between problem drinking among African-American women and exposure to alcohol advertisements, suggesting that as ad exposure increased, so did alcohol consumption.

#### **6.2.6.8 Myths and beliefs**

Unlike other substances of abuse like cocaine and marijuana, alcohol consumption is socially acceptable. Another belief that exists is the health benefits associated with alcohol; some individuals believe that alcohol use is associated with decreased risk to heart disease. This phenomenon is supported by Klatsky (1999) who states that, although heavier drinkers are at increased risk for some heart diseases, moderate drinkers are at lower risk for the most common form of heart disease, coronary artery disease, than are either heavier drinkers or abstainers (Klatsky, 1999). These findings were further supported by Mostofsky et al. (2016) who found that light to moderate alcohol consumption was one of the five most important modifiable contributors to lowering the risk of coronary heart disease, stroke, and total mortality. However, this was contradicted by Towers, Philipp, Dulin, & Allen (2016) who found out that when socio-economic status was controlled for in their analyses, the healthy effect of moderate alcohol consumption disappeared entirely for men and was substantially attenuated for women (Towers et al., 2016).

A challenge exists because many people assume that their consumption of alcohol is not problematic because they don't drink every day or only drink after work. Their impression is that occasional heavy use is safe. Binge drinking, the consumption of several drinks over a short period of time, is dangerous. This habit of heavy drinking lulls binge drinkers into a false sense of security. Binge drinking is also associated with a wide range of health and behavioural problems (CDC, 2017b).

#### **6.2.7 Consequences of harmful use of alcohol**

Alcohol has been associated with a wide range of negative consequences that do not only affect the individuals who consume alcohol, but also hurt other people. Beyond health consequences, the harmful use of alcohol brings significant social and economic losses to individuals and society at large which are determined by both the amount of alcohol consumed and the pattern of drinking.

##### **6.2.7.1 Health effects of harmful use of alcohol**

Alcohol consumption has been identified as an important risk factor for chronic disease and injury. Great concern exists with the risks of alcohol abuse. The net effect of alcohol consumption on health is detrimental, with an estimated 3-8% of all global deaths and 4-6% of global disability-adjusted life-years attributable to alcohol (Rehm et al., 2009). Harmful use of alcohol is an important public health problem in South Africa, and the government is exploring options to implement effective preventive measures. The reduction of alcohol has been included as part of the South African 2020 health targets (HSRC, 2013).

#### 6.2.7.1.1 Liver disease

In general, the participants themselves demonstrate knowledge about the health damage caused by harmful use of alcohol, but also mention the resulting social damage, including: risk of aggression, domestic violence which can affect other people who are not the drinker. Some respondents shared their personal experiences. One respondent shared how they lost their parent to liver disease due to alcohol abuse. Liver disease is the most common disease caused by alcohol use. When the liver is damaged beyond repair, it is known as cirrhosis. A relationship between alcohol use and risk of liver disease was explored by Lieber (2003) and Zakhari and Li (2007) and supported the established fact that harmful use of alcohol can cause liver cirrhosis (Lieber, 2003; Zakhari & Li, 2007).

#### 6.2.7.1.2 HIV/AIDS and alcohol use

The respondents mentioned that there are causal relationships between the harmful use of alcohol and incidences of both NCDs and infectious diseases such as STIs, including HIV/AIDS. They identified increase in HIV/AIDS transmission as one of the health consequences of harmful use of alcohol. The participants discussed how drinking alcohol, particularly binge drinking, can alter judgment, lower inhibitions, and impair decisions about sex or other drug use. Increasing risk of unplanned and unprotected sex, sexual partners, or use of other drugs, including injection drugs, can increase risk of exposure to HIV. If an individual is already HIV positive, he/she can also increase the risk of spreading HIV to others. Studies in southern and eastern Africa (Fritz, Morojele, & Kalichman, 2010; Hahn, Woolf-King, & Muyindike, 2011; Shuper et al., 2010; Woolf-King, Steinmaus, Reingold, & Hahn, 2013) have associated alcohol use with HIV infection, as well as with behaviours that lead to infection, such as engaging in unprotected and commercial sex, and having multiple partners thus supporting the findings in this study. Similar patterns have also been observed in India (Schensul, Singh, Gupta, Bryant, & Verma, 2010).

Combating HIV/AIDS (i.e. part of SDG 3) was also adversely affected by alcohol misuse, as excessive alcohol consumption weakens the immune system, making the body more prone to HIV infection and sexually transmitted diseases (Sumanasekara, 2012; WHO, 2016b). The biological effect of alcohol in impairing the immune system has important consequences for HIV/AIDS carriers as well, who may be considerably more vulnerable to infections (Bakke, 2016). Compromised immune systems can contribute to an increased incidence and severity of infections, such as pneumonia, tuberculosis, hepatitis C, sexually transmitted diseases, as well as other conditions, including depression and liver disease. Those conditions themselves may further depress the immune system and thus further increase susceptibility to HIV infections.

The participants also mentioned non-adherence of Antiretroviral Therapy (ART) as one of the behavioural effects of alcohol consumption and how ART treatment requires regular medicine intake and proper adherence to medication schedules and plays a vital role both in general health status and in avoiding the emergence of a drug-resistant virus. Jaquet et al. (2010) found that alcohol use in West Africa was one of two factors (adherence counselling being the other) significantly associated with poor adherence to ART. The positive association was significant for present drinkers and even for non-hazardous drinkers. This outcome was also confirmed by previous studies (Azar, Springer, Meyer, & Altice, 2010; Braithwaite & Bryant, 2010; Grodensky, Golin, Ochtera, & Turner, 2012; Hendershot, Stoner, Pantalone, & Simoni, 2009; Tran, Nguyen, Do, Nguyen, & Maher, 2014).

#### 6.2.7.1.3 Effect of alcohol use during pregnancy

Alcohol can affect people other than the drinker, and participants also acknowledged alcohol use as being dangerous during pregnancy. Drinking alcohol during pregnancy can cause lifelong miscarriage and stillbirth during pregnancy and physical, behavioural, and intellectual disabilities to the child. The foetus is affected because alcohol in the mother's blood passes to the baby through the umbilical cord (CDC, 2016a). A study by Kesmodel et al. (2002) showed that alcohol drinking, even in moderate amounts, is associated with an increased risk of spontaneous abortions, especially in the first trimester of pregnancy and with infertility in males and females. Alcohol drinking was associated with increased risk of foetal death. Hazard ratio was 1.55 among women in the Danish National Birth Cohort who reported binge drinking three or more times during pregnancy (Strandberg-Larsen et al., 2008). An odds ratio of 1.4 for stillbirth was also found in a cohort of 3,508 single pregnancies in Missouri, which increased to 1.7 in women consuming five or more drinks per week (Aliyu et al., 2008).

#### 6.2.7.1.4 Death in fatalities caused by harmful use of alcohol

Previous studies have reported that harmful use of alcohol is highly comorbid (Miller, Plant, Plant, & Duffy, 1995). Risk of traffic accidents was also identified as a major consequence of harmful use of alcohol, with one participant mentioning a car accident that had occurred at the university due to an employee driving under the influence. These results are supported by previous research that has shown that alcohol is connected with traffic fatalities (Cohen, Mason, & Scribner, 2002; Hingson, Heeren, Winter, & Wechsler, 2005; Levitt & Porter, 2001; Milner et al., 2015). Death was also associated with harmful use of alcohol, with one respondent highlighting that most deaths in the local community are not due to infectious diseases like HIV/AIDS but were now due to NCDs. According to the UN, since 2010, AIDS related deaths have been decreased by 29% (UNAIDS, 2016), due to the ARV treatment programme in the country. With NCDs increasing due to rapidly increasing globalization and accompanying urbanization, there have been trends towards unhealthy diets, obesity, sedentary lifestyles and unhealthy habits including alcohol use resulting in the quadruple burden of diseases in the country. Globally, the peak age of alcohol-related death is in the middle age and older middle age, a time often of peak performance at work. This is the economically active group who are critical in the development of the country (Rehm, Taylor, & Room, 2006).

#### 6.2.7.2 Socio-economic effects

Socio-economic consequences of harmful use of alcohol include workplace-related problems, family and domestic problems, and interpersonal violence. The costs associated with alcohol amount to more than 1% of the gross national product in high-income and middle-income countries, with the costs of social harm constituting a major proportion in addition to health costs (Rehm et al., 2009; WHO, 2011b).

##### 6.2.7.2.1 Adverse child experiences (ACEs)

A respondent shared their personal experience growing up with a parent who abused alcohol, which caused stressful events. These events are referred to as ACEs that an individual experiences in childhood, such as physical abuse, parental divorce or parental alcoholism (WHO, 2018d). Evidence suggests that many of these are closely and causally related to each other and, if left unchecked, can result in accumulated exposure to multiple adversities (Cluver et al., 2013). In South Africa, exposure to adverse experiences in early life have been associated with a number of poor adolescent and adult outcomes, including HIV risk



(Heusser & Elkonin, 2014), psychological distress (Williams et al., 2007), increased risk of psychiatric disorder (Slopen et al., 2010) and also alcohol and drug use (Richter et al., 2014).

#### 6.2.7.2.2 Alcohol-related violence

The results obtained from the study showed a link between alcohol and violence in families and communities. Not only may alcohol consumption promote aggressiveness, but victimization may lead to excessive alcohol consumption. The impact of alcohol consumption, drinking pattern and drinking context on involvement in alcohol-related violence was assessed in a survey of 2711 Norwegian adults. Having taken part in a fight while influenced by alcohol and having been injured by an intoxicated person during the past year were reported by 3% and 2.4% of the respondents respectively (Rossow, 1996). Alcohol-related violence was also shown to increase with alcohol use in another study (Markowitz & Grossman, 1998) and it was also expected that low self-control and aggression assessed before the initiation of drinking would be associated with the early age of onset of drinking. These have been shown to be linked to several later outcomes such as long-term unemployment (Kokko & Pulkkinen, 2000).

#### 6.2.7.2.3 Absenteeism, work productivity and job loss

##### 6.2.7.2.3.1 Absenteeism at the workplace

According to the responses collected during the SSIs and FGDs, it is well established that alcohol dependent people and heavy drinkers have more sick-leave days and abstention rates than other employees and thus costs the university considerable amounts of money. There is at least indirect evidence that impairment resulting from such episodes may serve as an important motivator of employee absence. Impairment may be manifested in hangover symptoms (e.g., headache, dehydration, tremor, dizziness, nausea and vomiting) (Ames, Grube, & Moore, 1997; Wiese, Shlipak, & Browner, 2000). A number of studies indicate that alcohol impairment at work may increase the likelihood of interpersonal workplace problems such as conflicts with co-workers or supervisors (Lehman & Simpson, 1992; McFarlin et al., 2001; Moore & Littlecott, 2015). To the extent that employees recognize this association and are concerned that such problems may be cause for disciplinary action or even dismissal, individuals experiencing any of the shorter-term, pharmacological effects of heavy alcohol consumption may prefer to miss work rather than attend work and risk discipline. This is referred to as “stay-away” absence by Blum, Roman, & Martin (1993). Workers may also utilize absence as a precaution against on-the-job injury following periods of heavy drinking when they are more vulnerable to accidents due to alcohol impairment, particularly in safety-sensitive jobs like transport (Frone, 2004, 2008). Finally, because for many employers on-the-job intoxication or alcohol impairment is viewed as a gross violation of rules, impaired employees may prefer to miss work rather than taking the risk of being detected, disciplined or even dismissed (Blum et al., 1993). This can be applicable at the university where the alcohol policy, as indicated by one of the key stakeholders, should be no traces of alcohol at the workplace and failure to meet this requirement can result in disciplinary action, for example warning, suspension or termination. These effects were also highlighted by the participants in this current study.

##### 6.2.7.2.3.2 Decreased work productivity

Excessive drinking adversely affects physical and mental health, memory, cognition and behaviour (Macdonald & Shields, 2001). On this basis, drinking that is heavy or intense is expected to impair work performance. The respondents acknowledged that alcohol use at the workplace can endanger other

employees and can also eventually lead to suspension or unemployment. A range of studies have supported these findings and stressed the positive relationship between alcohol and increasing presenteeism (Cooper & Dewe, 2008; R. Z. Goetzl et al., 2004; Schultz, Chen, & Edington, 2009).

### **6.2.8 Suggested focus for intervention**

In a systematic review, Kuoppala et al. (2008) identified 46 studies which suggested that workplace health promotion could improve work ability, although not decrease sickness absences. An option in handling a prevention and information service for the workforce was introduced in France. It includes designating certain employees as 'preventative agents' (WHO, 1993), which is a group consisting of employees with interest in or responsibility for alcohol and drug uses in the workplace. This is similar to this project as peer educators work as the 'preventative agents'. Training is provided to ensure that such agents have a general knowledge of alcohol- and alcohol-related problems and the ability to determine the most favourable method for an effective strategy. This led to the need to raise awareness of harmful use of alcohol by collaborating with peer educators to develop the trainer's manual and conducting a workshop for this group. Interventions that focus on health promotion and on different lifestyles rather than on the disease have shown higher participation as well as greater improvement in drinking risk than those focusing on punitive sanctions (Sieck & Heirich, 2010). Participants advocated for tailored health promotion materials, including posters and HILs on harmful use of alcohol, to be available at the workplace.

### **6.2.9 Integration of CBPR principles in the project**

Community-based participatory research (CBPR), with its emphasis on partnering with communities, provides an alternative to traditional research approaches that assume a phenomenon may be separated from its context for purposes of study (Holkup, Tripp-Reimer, Salois, & Weinert, 2004). Frequently these procedures are alienating and distance participants from their personal experience and potential sources of self-understanding and change. This detachment may facilitate disinterest in the process and lead to difficulties with collaboration, recruitment and retention in programmes and research projects.

Community, by traditional isiXhosa standards, exists in the context of the indigenous African philosophy of 'ubuntu'. Ubuntu is commonly related in the isiXhosa phrase, "Ubuntu ungamntu ngabanye abantu," or "People are people through other people" which speaks particularly about the fact that you can't exist as a human being in isolation (Marks, 2000). Bhengu described ubuntu as "unity of community which is the heart of the [southern] African culture" (Bhengu, 1996). Thus, culture is about honouring relationships that thread connectedness to all aspects of the lived experience. Therefore, by engaging in the project together, the researchers and peer educator learned to share their knowledge and perceptions in a mutually respectful manner through relationship building. This process allowed development of education material that is useful and culturally relevant to the community. Doing so may boost the impact of the health promotion programme, because identification with one's culture and enculturation have been associated with resilience and health (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006; Zimmerman, Ramirez, M. Washienko, Walter, & Dyer, 1998).

### **6.2.10 Collaboration with peer educators**

Peer education has a long history. It began being applied in health education and especially for HIV/AIDS prevention during the 1980s. In recent years, the peer education method has been relatively popular in health

promotion, perhaps because of the unquestioned positive component of the method, which is the interaction it brings between peers. Peer education interventions have been used with a number of target populations in developing countries (Agha & Van Rossem, 2004; Brieger, Delano, Lane, Oladepo, & Oyediran, 2001; Ford, Wirawan, Suastina, Reed, & Muliawan, 2000; Hammett et al., 2006; Merati, Ekstrand, Hudes, Suarmiartha, & Mandel, 1997) and have been shown to influence the health behaviour of people in preventative interventions in previous studies (Janz et al., 1996; Merakou & Kourea-Kremastinou, 2006; Rickert, Jay, & Gottlieb, 1991; Shulkin et al., 1991).

The respondents in the current study highlighted that there was an increase in the NCD burden at the university with the majority of the diseases and deaths now being associated with NCDs and their risk factors. The peer education programme at Rhodes University, which was originally the HIV/AIDS programme, was therefore integrated into a general wellness programme. Integration of HIV programmes with other health and development programmes was also proposed in 2014 by the UNAIDS GAP report that suggested that this can result in broader health outcomes (UNAIDS, 2017). Integrated approaches provide people with holistic options centred on the health needs of people and communities and thereby enhance community self-reliance. Integration has been applied in different settings, for example in Cambodia for HIV/AIDS, diabetes, and hypertension management, which demonstrated high acceptance and good outcomes (Janssens et al., 2007). HIV programmes also involve the same elements as NCDs programmes particularly promotion of healthy behaviours. Another reason for the integration was the many advantages that come with using lessons learnt and using already established programmes (NCD alliance, 2016a).

The peer education programme can be linked partly to the theory of diffusion of innovations, which considers that an innovation can be new information perceived as new by the individual or the community and can be diffused to a target group (Rogers, 2003). The information is communicated through certain channels over time amongst members of a social system (here, the university). A central point in this theory is the use of opinion leaders as 'change agents' (Parcel, Perry, & Taylor, 2018). Peer educators are assumed to have this role to influence not only those for whom the activities are organised (their peers), but also others of relevance in the peer's environment (family, friends, etc.).

There is the perceived credibility of peer educators for the target group. Another reason for the integration of this health promotion project with the HIV/AIDS peer education project was because the staff at the university are already familiar with the work of the peer educators and increasing the scope of their work would therefore likely be more acceptable than would a new project. The fact of sharing background, interests and use of language would facilitate the transfer of information. Also, individuals tend to talk with their peers about most subjects. This is because peer educators are not seen as an authority telling them how to behave, but as another member of their own group. Peer education programmes are based on the rationale that peers have a strong influence on individual behaviour (Population Council, 2000). A related advantage of this method is that it promotes among the peer educators positive life skills such as leadership and communication skills and allows the participation of people in activities that affect them. Peer education programmes may be empowering to both the educator and to the target group by creating a sense of solidarity and collective action (Milburn, 1995; Strange, Forrest, Oakley, & RIPPLE Study Team, 2002).

### 6.2.11 Role of peer educators in the research

It was important to identify partners who share an interest in health promotion for input and decision making in subsequent stages of the research. The researcher actively involved the peer educators and it greatly benefited from their participation in the design and implementation of the project. The peer educators were instrumental in the overall study design.

The peer educators also provided valuable suggestions for specific intervention strategies and the project has greatly benefited from their role in the development and implementation of data collection instruments. For example, during focus group interviews peer educators provided information that resulted in a more complete data collection and investigation of areas initially not included by the researchers, including both content and cultural appropriateness of language and methods. These results were also observed by another study that included community members in the conduct of a health education intervention and research project on asthma (Edgren et al., 2005). The peer educators played an active role in the design of the written material. Their input was a significant factor in ensuring cultural and linguistic appropriateness and effectiveness in all written materials as well as in understanding the social and economic conditions of our target audience.

Given the time demands and technical aspects of data analysis, the peer educators were not involved in data analysis. The analysis and interpretation of data are areas in which community partners frequently have limited involvement. A study that examined the experiences of six of the children's centres in using CBPR also reported that none of the projects involved their community partners directly in data analysis (Israel et al., 2005).

The researcher would meet with the peer educators for FGDs. Israel et al. (2005) suggested that obtaining community partner involvement may require strategies such as face-to-face meetings and discussions of drafts rather than merely sharing written documents and expecting a written response. The meetings were conducted considering a number of characteristics of effective groups that are presented in the literature, such as two-way communication, appropriate decision-making procedures, shared power, the ability to resolve conflicts constructively, and the ability to engage all members (Johnson & Johnson, 2006).

#### 6.2.11.1.1 Challenges faced

An effective partnership requires time and infrastructure support, for example, to establish and maintain trust, attend meetings, jointly participate in all phases of the research, and foster capacity building. One of the challenges faced was scheduling time to meet with the peer educators because of other commitments to organisational responsibilities or a lack of support from their supervisors. Some studies have shown that community partner organisations face costs from involvement, such as lack of adequate reimbursement for their time spent participating, as well as opportunity costs for time taken away from other job responsibilities (Koné et al., 2000; Parker et al., 2003).

Other challenges faced not related to time constraints and costs was ensuring community participation and influence. The researcher and peer educators spoke different home languages and used different styles of communication, the majority of the peer educators speak isiXhosa as their home language. This created

challenges during FGDs as some participants would not participate because they were not fluent in English even though they were free to communicate in their home language. These challenges have also been observed in previous studies (Green & Mercer, 2001; Israel, Schulz, Parker, & Becker, 1998; Minkler, 2004).

Communication was also a challenge because all peer educators had to be called when scheduling meetings and texted to remind them the day before the meeting because some of the peer educators do not have jobs that enable them to be in such frequent email contact and others did not use email at all. This challenge was also faced by researchers at the children's centres (Israel et al., 2005) who would often use electronic mail for communicating, frequently needing/expecting quick responses.

### **6.2.12 Identifying target population**

A gap exists with access to health promotion material and the lower level support staff who are usually low-to semi-literate. The support staff were therefore selected as the target group in this study in order to help identify and address the relevant barriers to health. The project would include them in the development of health promotion materials as well as increase their access to it. Materials were also designed to suit their educational levels. By catering for the low-literate staff, these materials could be used, even by those with higher literacy skills, therefore catering for all at the workplace. Involving the support staff would allow the project to be long term and sustainable.

## **6.3 Health literacy**

The demographics of the support staff that took part in the project were taken as a sample of the target population. The grade level of the participants ranged from Grade 8 to Grade 12 with a course or diploma. Educational attainment strongly predicts good health literacy and people with limited financial and social resources are more likely to have limited health literacy. This is supported by previous studies that identified that health literacy is affected by the social determinants of health and risk factors include age, education, gender, ethnicity and income (Adams et al., 2009, 2013; Bostock & Steptoe, 2012; Morrisroe, 2014; Shoemaker et al., 2014). The prevalence of low health literacy means that health professionals have an important role to play in information provision, comprehension and initiating open discussion about health information.

In recent years, considerable progress has been made in increasing public access to health information, particularly through public websites. Access to information, however, is not sufficient by itself. Many people need help to find, understand and act on health information, especially written information. Even in developed countries, substantial proportions of the population have very limited literacy skills. A study in England showed that 42% of working-age adults (aged 16-65 years) are unable to understand or make use of everyday health information, rising to 61% when numeracy skills are also required for comprehension (Rowlands et al., 2015).

A study conducted in Eastern Cape, South Africa, showed that 23 out of the 120 participants had no difficulty understanding written health information and only 20% of participants reported being able to use the internet for health information on the computer and devices (Health Literacy, 2017). The support staff reported that

they had limited access to new technologies such as the internet and, therefore, could not access health information on the internet. Despite the role of information and technology in delivery of health education, access to the information they need or want, in a format individual can understand, remains a challenge. The trends were also observed in other studies (Coulter, 1999; Olney, Warner, Reyna, Wood, & Siegel, 2007; Warner, Olney, Wood, Hansen, & Bowden, 2005) which observed that these people are more likely to be older, non-English speaking or from lower socioeconomic groups. To address this gap, these populations can have their needs met by alternative methods; therefore, HILs were used to overcome the digital divide and to increase access to health.

A particular concern from the support staff arose out of the difficulties encountered with using printed and written information as occurs in society. We found that some of the HILs available discouraged the support staff by their overall look, and content. These findings are concurrent with previous research (Treadgold & Grant, 2014; van Beusekom, Grootens-Wiegers, Bos, Guchelaar, & van den Broek, 2016). The health promotion project therefore aimed at the entire support staff, but were designed with particular focus on the appropriate level for those with limited literacy. The researcher also initiated the translation of HILs into the local languages for those with little or no command of English.

#### **6.4 Development and design of the HIL**

HILs were used as a means of delivering health information as they may be delivered directly to staff members. Peer educators, who are from different departments at the university, provide a way of improving the reach of the health education material and of spreading verbal health information, as they can facilitate their distribution in and around their departments. They are also convenient as one can keep the HIL to read later when free and may be used or read time and time again, therefore overcoming the barrier highlighted in Phase 1 which was that health promotion initiatives were conducted at inconvenient times and venues. HILs were also chosen so that the information remains available for later reference and can also be used by the social network of the staff, such as family and friends.

The peer review process was conducted by the researcher's colleagues. They assessed if the information in the leaflets was consistent with the best available evidence and gave comments and suggestions to improve the HILs. The panel of reviewers was therefore helpful in identifying some aspects of the HIL that may have been overlooked by the researcher. Coleman (2003) has mentioned this as a crucial step in design of HILs, stating that this allows for checking that the information meets the needs of the target and that the information is accurate. The peer reviewers also used suitability and readability tests during assessment.

A community engaged approach has resulted in an end user centred approach, therefore pilot testing was conducted in this study which was made possible through the input of support staff. Gal and Prigat (2004) mention that when developers conduct little or no pilot-testing, they miss out on opportunities to receive formative feedback from end users (Gal & Prigat, 2004). The pilot test in the current study helped to identify readability and usability problems that pointed to readability and comprehensibility gaps. The study also collected the user-opinion of the leaflets in addition to the user-testing. A study by Mateti et al. (2015) also mentioned the importance of user-opinion in health promotion.

The development and modification of the HILs was also made possible through the input of peer educators. Active involvement of the target group in the development process, or co-design, has been shown to lead to successful health interventions (Morrow et al., 2005; 2007). Changes made to the HILs are shown in Tables 25, 26, 27 in the Results chapter. The peer educators asked for the addition and removal of certain information and pictures due to them not being applicable to their setting or they were culturally inappropriate. The involvement of the peer educators was essential to fulfil the principles of CBPR. Their input improved the content of the HILs through consistent interaction, making the HILs both context-specific and culturally appropriate health promotion resources.

Particular emphasis was paid to making the HILs context specific and culturally appropriate, as it has been highlighted that understanding the role of culture in alcohol consumption patterns is important in addressing unhealthy behaviours since cultural health beliefs, practices, and communication preferences differ among ethnic groups (Airhihenbuwa, Ford, & Iwelunmor, 2014; Meade, McKinney, & Barnas, 1994). In ethnically diverse countries, it is important to consider the cultural appropriateness of the information presented (Birru & Steinman, 2004; Friedman & Hoffman-Goetz, 2006; Nasser, Mullan, & Bajorek, 2012). South Africa has different ethnic groups, but these leaflets were tailored specifically to the support staff, who are predominantly isiXhosa. Applying the cultural and context specificity lenses to a different health problem, another study specifically tailored a health promotion initiative that was a culturally compelling strategy for reductions in antibiotic prescriptions for respiratory-tract infections (Little et al., 2013).

The content validating stage of the HIL development process was made possible by health professionals to determine whether or not written materials have current and valid content. The panel of reviewers was helpful in identifying some aspects of the HIL that may have been overlooked by the researcher. They greatly assisted in the enhancement of the HILs. This step was also employed by Rennuka (2015), where subject experts reviewed the content of the leaflet. This has also been deemed a crucial step in the development of quality educational materials by another study on the development of patient education materials (Lawshe, 2006; Perry et al., 2012; Renuka & Pushpanjali, 2013).

The rationale for information included in the HILs are discussed below:

### **HIL 1 - The Health Consequences of Harmful use of Alcohol**

The definition of alcohol abuse was given in the HIL. This was to give the user insight into the topic and help the user identify alcohol abuse. Understanding alcohol abuse and alcoholism can be a key step in solving drinking problems and can help convince individuals in denial that they need help and allow themselves or a loved one to get the kind of help that makes a difference (WHO, 2001).

Information on why people drink was included to better understand drinkers and alcoholics in why they choose to drink. In the results section from phase 1 some perceptions on this topic were given, including factors like unemployment, stress and peer pressure. The HIL then combined from literature the many different reasons why people drink. It can also be helpful in identifying triggers if individuals know the most

prominent reasons why people drink alcohol so that in creating a proper relapse prevention plan you can seek what forces are generally at play in this situation (Origins Recovery Center, 2015).

Health effects of alcohol were included in the HIL to increase alcohol awareness and, in turn, decrease the drinking behaviour in alcohol abuse for the target population as suggested by the Global strategy to reduce and the National Institute of Alcohol Abuse and Alcoholism (Dawson, 2011). An intervention in Japan of alcohol health education concerning the effects of alcohol, alcohol-related health problems, and drinking behaviour showed an increase in awareness of alcohol health related problems, but no significant intervention effect was observed regarding drinking behaviour or problem drinking as measured by Geshi, Hirokawa, Taniguchi, Fujii, & Kawakami (2007).

The recommended alcohol limit was highlighted in this HIL to make the readers aware of these limits in order for them to be more conscious of the quantities of alcohol they select. Knowing these limits is an important factor in reducing their alcohol consumption and monitoring how much they are consuming. In this study there were myths and stereotypes that emerged during discussions with the staff, including the health benefits of alcohol. This was addressed in the HIL showing that drinking more than the recommended amount of alcohol can have a harmful effect on your heart and general health.

Tips on how to prevent alcohol related harm was added to the HIL as a guide on how to reduce alcohol consumption as provided by the CDC (CDC, 2016c). The tips given target common practices of the target group so that readers can easily relate to them.

## **HIL 2 – The Health Effects of Alcohol: Health, Social, Economic**

Alcohol plays a role in the lives of South Africans who drink and people around them. Besides having significant direct and indirect effects on health, it also affects social and economic aspects of the South African community (Setlalentoa, Pisa, Thekiso, Ryke, & Loots, 2009). Effects of alcohol were mainly associated with the impact on health in the first HIL. It was, therefore, important to address the social and economic aspects as well, therefore the relevance of the information in the HIL. A 'Did you know section' containing information on self-help tips when reducing the use of alcohol was also suggested by Goetzel & Ozminkowski (2008).

## **HIL 3 – Alcohol in Pregnancy and FAS**

Global studies have provided evidence that women now consume larger amounts of alcohol as compared to the past (WHO, 2014b; Popova, Lange, Probst, Gmel, & Rehm, 2017). In 2012, South Africa was said to be having the top figure of FASD in the world. The Western Cape Province has the highest amount with a measure of above 70/1 000 compared with the rest of the remaining eight provinces in South Africa (Chersich et al., 2012). The prevalence of FASD in South Africa motivated the development of this HIL.

The reasons women drink were included in this leaflet. The main reason for consumption of alcohol during pregnancy in Western Cape was found to be depression which is both the starting and retaining cause, followed by anxiety (Vythilingum, Roos, Faure, Geerts, & Stein, 2012). Marais et al. (2011) stated that since



there is a greater relationship linking depression and alcohol abuse amongst pregnant women in South Africa, there is a greater need for social awareness through education and training programmes. This can be achieved by involving the community and educational interventions that include health promotion and distribution of health education materials including HILs.

The effects of drinking alcohol were also included to increase awareness of the effects. A study by Sudo (2011) in Japan also included this section during the development of their HIL on FASD. The Centers for Disease Control and Prevention (CDC) recommended in February 2016 that women of reproductive age avoid alcohol entirely when they are pregnant, are attempting to become pregnant, or could become pregnant (CDC, 2016b). These recommendations are tied to public health concerns about the detrimental effects of foetal alcohol spectrum disorders (CDC, 2017a). Information on how to reduce FAS was included on the back of the HIL, encouraging pregnant mothers to not drink alcohol at all during pregnancy. To date, there is no known safe threshold for alcohol intake in pregnancy, and it is for this reason that most clinicians recommend complete abstinence from alcohol during gestation (Adiong, Kim, Koren, & Bozzo, 2014).

#### **6.4.1 Use of pictures in the HILs**

To improve the usability and quality of written drug information, visual aids can be used in conjunction with text to facilitate understanding—an approach that has proven to be particularly successful for people with low literacy (Braich, Almeida, Hollands, & Coleman, 2011; Dowse & Ehlers, 2005; Ngoh & Shepherd, 1997). To further illustrate, Delp & Jones (1996) demonstrated that printed health instructions with visuals were much more likely to be read by patients than text-only materials. In addition to drawing attention, there is ample proof that images can aid free and cued recall (Houts et al., 1998; 2001; Thompson, Goldszmidt, Schwartz, & Bashook, 2010; Wilby et al., 2011). In this study, pictures were used to enhance understandability and were used as peripheral cues to make the leaflet more appealing and not boring. Low-literate people indicate that they experience a high cognitive load when required to read written health information, which was reflected in two studies in their comments about the time and effort it takes to read and process the information (Mayer, 2002). Several studies have shown that images, and especially pictograms, can be an effective tools to increase patients' understanding of textual information (Dowse & Ehlers, 2005; Morrow, Hier, Menard, & Leirer, 1998). Participants during the pilot study and FGDs said the pictures enhanced understanding and wanted more pictures to be used.

Images used in the leaflet avoided cultural neutrality and sought instead to be culturally relevant in order to resonate with the target group. In previous studies, cultural appropriateness was frequently found to be only “adequate” or “not suitable” because materials did not present images of the intended group or lacked images in general (Masset, 1996; Mohrmann et al., 2000; Rees, Ford, & Sheard, 2003).

#### **6.4.2 Headings and layout**

Highlighted headings in larger fonts and in bold were used for ‘flagging’ information. This was important as one of the concerns of the participants, as they mentioned, was how difficult it is to find relevant information in some leaflet, which is why they were so appreciative of headings in the text, a finding that is supported by a study by Kools, Ruiter, Wiel, & Kok (2008). Other researchers also suggest that layout (Nielson-Bohlman,

Panzer, & Kindig, 2004), and use of graphics and illustrations (Davis, Williams, Marin, Parker, & Glass, 2002) can improve content comprehension.

#### 6.4.3 Inclusion of activities

The HILs each had a word game at the back with key words contained in the written text. Games and visuals have been shown to enhance learning stimulation by allowing the reader to interact with the text and promote better retention and recall of information (Helitzer et al., 2009). According to peer educators' responses, this was useful, as the activity gives the reader a chance to perform what they have read. The majority of the support staff were eager to play the game and find all the words. This was supported by Bryant (2016) and Doak, Doak, & Root (1996) that learning stimulating and motivating methods in teaching, such as word games, were valuable in stimulating and creating interest in the topic under discussion and may improve reading comprehension and an individual's ability to apply health information.

The study also collected the user-opinion of the leaflets in addition to the user-testing. Most of the published studies did not assess the user-opinion on the leaflets which the present study attempted as they are one of the important stakeholders in patient education. The results of the study reveal that more than 80% of patients rated the leaflets' content, legibility and design as good.

#### 6.4.4 Suitability of the HILS

When developing health education materials, it is crucial to ensure that suitability and readability are appropriate for the target audience. Lampert, Wien, Haefeli, & Seidling (2016) suggested that development strategy is a consecutive four-step procedure that comprises already validated distinct quality assessments: an initial requirement analysis specifying the needs and constraints of the target population and evidence-based preparation of the leaflets, a readability assessment, the Suitability Assessment of Materials instrument and iterative consumer test in the target population. All these were considered during the design of the HILs. The SAM and PEMAT are validated methods that were used in designing the HILs to help determine if the target population would be able to understand and act on the information presented, such as reducing the harmful use of alcohol. The SAM can be used to identify specific shortcomings that reduce the suitability of materials by allowing ratings on factors affecting readability and comprehension of materials being developed (Harvard Chan School of Public Health, 2010; University of Maryland, n.d.).

The first draft of HIL 1,2,3 in the current study had an average SAM score of 72%, 68% and 79% respectively, making HIL 2 'adequate'. The creators of the SAM defined highly suitable materials as those that score more than 70% using the SAM checklist (Doak, Doak, Miller, & Wilder, 1994). The final HILs all had scores ranging from 87.9% to 93.1%. The first drafts of the HILs in the study had mean understandability PEMAT scores of 82.5%, 79.4% and 88.3% respectively which was *superior*. These scores increased in the final HIL after modifications based on the feedback received. The understandability score was more than 75% and this translates to *superior material* according to the PEMAT. The mean suitability scores of the final HILs were well above the threshold, therefore all three HILS were considered understandable.

Systematic reviews conducted to test suitability of materials also used the SAM and PEMAT test stating that development of effective health education materials requires formative feedback as well as evaluation, which

systematically obtains information to be used to improve these materials (Jahan, Al-Saigul, Alharbi, & Abdelgadir, 2014; Luk & Aslani, 2011; Okuhara, Ishikawa, Okada, & Kiuchi, 2015; Piñero-López, Modamio, Lastra, & Mariño, 2016).

#### **6.4.5 Actionability**

The current study aimed to develop and disseminate HILs that contain information that is accurate, accessible, and actionable. The SAM assessment tool used assessed the health literacy demand of the HIL, but measures whether materials are actionable which is an important characteristic of health education materials which was also supported by other authors (Shoemaker et al., 2014).

The actionability of the materials was graded on its capacity to give the reader clear actions to take, provide the reader with a tangible tool, and directly address the user when describing the action. The mean actionability scores of the first draft of the HIL 1, 2, 3 was 48%, 29.3% and 80.1% respectively, with the first 2 HILs being below the threshold, making it not suitable and making it clear that there was room for improvement. Changes were made to improve the actionability of the material such as the inclusion of a word game and a list of people to contact for help. The actionability of the final HILs were all above 96.6% making the material actionable. This suggests that the target population can identify what they can do based on the information presented.

In a study by Zellmer, Zimdars, Parker, & Safdar (2015) understandability was 73.4% which was similar to our first draft but actionability was much less, i.e., 50.5% and concluded that the PEMAT tool can be utilized to guide the development of complete patient education material which was different from this study where HILs were designed. However, there are limitations to the SAM and PEMAT, as the scoring is subjective, but the scores reflected fair agreement between the peer reviewers. Suitability assessments would be more accurate if assessment tools completed by the target audience were available. As the PEMAT and SAM do not assess readability, a readability assessment was conducted. Written education materials are only useful if the user is able to read and understand them (Mumford, 1997).

#### **6.4.6 Readability of the HILs**

Information may inform and empower individuals to engage in their health care. Information can be provided in written form, but it is only effective if it can be read and understood by the user (McKenna & Scott, 2007). A mismatch between readability of material and the average literacy level of the target audience was observed in another study that highlighted that printed educational materials on breast cancer do not adequately provide information to under educated, economically disadvantaged African American women based on reading level and scores on the Cultural Sensitivity Assessment Tools developed by Guidry and Walker (Mohrman et al., 2000). As the researcher aimed to design HILs that were readable to the majority of the target audience, readability tools were applied to measure the difficulty of words and sentences in the HILs as increasing readability usually leads to improvement in understanding.

Six readability tests were used to evaluate the readability of the first and final drafts of the HILs. There was a noticeable change in readability between the first and fourth draft of the HIL, as illustrated in Table 32. Draft 1 average readability results for HIL 1, 2, 3 changed from 11.6, 12.9, 14 in the first draft to 7, 9, 7 in the fourth

draft. This was the result of simplifying text in response to the feedback obtained throughout the four-draft process of designing the HIL.

Each readability formula applies different calculations and methods for validation. Although results may be expected to differ by the type of formula used, it is important to ensure optimal and meaningful interpretation (Wang et al., 2013). The readability test tools in the current study gave different results and illustrate that reading grade level estimates vary by formula, even when applied to the same written health information. Readability formulas in this study demonstrated variability up to 5 reading grade levels on the same text. The SMOG tool used in the current study to assess reading level reported lower mean scores than using the Flesh-Kincaid tool. This was also observed in another study that used both the SMOG and Flesch-Kincaid and reported a difference of two grade levels between the two scores (Friedman & Kao, 2008). According to another study by Wang (2013), the SMOG formula appears best suited for health care applications because of its consistency of results, higher level of expected comprehension, use of more recent validation criteria for determining reading grade level estimates, and simplicity of use (Wang et al., 2013).

This variability in scoring provides further support for not using reading level alone to evaluate the literacy demands of health education materials. Focusing exclusively on “reading level” to evaluate print education materials is not enough; this strategy misses important factors that can influence reading comprehension (Cecilia C. Doak et al., 1996; Friedman & Hoffman-Goetz, 2006). A systematic review of “readability and comprehension” instruments found limitations to those most commonly used, specifically the inability to take into account sentence structure, prior knowledge, and the effects of illustrations (Friedman & Hoffman-Goetz, 2006). Easy words on the list may also be considered hard words in the context of medical terminology, further adding to the potential for suboptimal estimates (Dale & Chall, 1948). Evaluating the draft HILs showed that, although the readability score may be high, the target population was nevertheless able to read and understand them. As all the formulae were developed in the United States of America, the grading pertains to the American grading system, and its applicability to South African grade levels is uncertain.

Reading level alone (especially considering the difficulty of assessing true reading level) does not explain the complex human skills involved in becoming a health literate citizen. Health literacy evolves over one's life and, like most complex human competencies, is impacted by health status as well as demographic, socio-political, psychosocial and cultural factors (Zarcadoolas, Pleasant, & Greer, 2005). The researcher did not rely on readability tests alone during the development of the HILs. The end-user centred approach meant that the peer educators and support staff who were involved attempted to address these gaps but, other than that, a multiple approach was used and other methods were used at different stages, for example, use of health care professionals for content validation.

## **6.5 Development and design of poster**

Health promotion posters are a simple way to promote the advantages of health and wellness. One of the key ways for health promotion to be effective is to use multiple methods and be responsive to the needs of the target audience (Health Knowledge, 2010). A poster was designed to raise awareness and to help communicate with the community members on public address systems and to build interest on alcohol use.

The poster was designed based on information from the final 3 HILs. This was not time consuming and the HILs had already been tested and were considered readable and suitable for the target. The choice to use posters was also made on the basis that the researcher sought to incorporate an educational tool that was sustainable at Rhodes University, that was low in cost to produce and caused no burden on the peer educators' time commitment. The use of posters has also been applied with mass media components aimed at changing physical activity behaviours and has yielded short-term increases in physical activity, mainly in highly motivated individuals, such as encouraging use of stairs instead of elevators leading to changed behaviour (Kahn et al., 2002; Matson-Koffman, Brownstein, Neiner, & Greaney, 2005).

The poster was divided into relevant areas per theme which were linked in logical ways to make sure that the inclusion of graphics and other design materials would not disrupt the readers and they would still be able to follow the poster content. The poster was used as a 'visual' display so more graphics were used. The use of graphics can often enhance understanding of what may be a complicated process or concept and often will aid in remembering the actual poster on display (O'Neill & Jennings, 2012). The title text was at least five times bigger than the body font so it may also catch the attention of passers-by (Dickinson, 2006). The section headers or sub-titles were used for attracting and maintaining the audience. The final poster print will be catchy, colourful, clear and large to make it eye catching and will be laminated to make it more robust and last longer. The common areas for the support staff will be chosen by them and that is where the posters will be hung. In addition, this process could be replicated basically anywhere since the programme used to design the poster was PowerPoint and is widely used and relatively simple to operate.

## **6.6 Collaboration with the Drama Department**

Health promotion campaigns should use communication techniques tailored to their audiences in order to produce significant improvements. Among these, drama may represent a useful way to widen the range of the communication impact on participants. Many types of media are used around the world for health promotion. In Africa, in both rural and urban settings, drama has proven to be an effective and entertaining strategy for dissemination of health information and reinforcement of positive health messages.

Drama represents a valuable way to improve health behaviours associated with important social issues such as acquired immune deficiency syndrome (AIDS) prevention in African countries (Panford, Nyaney, Amoah, & Aidoo, 2001) and in India (Valente & Bharath, 1999). Red Cross National Societies in countries such as Togo, Zambia, Malawi, and Zimbabwe have also integrated theatre and drama into the community social mobilisation activities. The shows are incorporated into community-based health education programmes to raise awareness about childhood immunisations, malaria prevention, and other health education activities (Mbizvo, 2006). In this project, we used drama in a workshop to help address issues associated with harmful use of alcohol. The content of the workshop was derived from a realistic assessment of the knowledge, attitudes and culture of the peer educators. We had less than 10 people per workshop since drama-based workshops can be implemented only in groups of 15 participants maximum (Costa, Faccio, Belloni, & Ludici, 2014).

The students used drama to overcome literacy barriers through the use of local experience and vernacular to provoke emotional and analytical responses in the audience. This helped to demystify issues surrounding

alcohol use, including barriers to communication. The workshop included scenes whereby the drama students would produce a dramatic experience that allows individuals to construct how to put the situations of interest on stage. The participants would then share their meta-thoughts regarding the action played. This was done to improve the participants' empowerment by giving them freedom of choice on how to represent the meanings that are relevant for the group. Furthermore, the participants took up roles and participated in some drama scenes and therefore the participants became part of the results achieved during the experience. This strategy is more applicable to participatory methods used to disseminate appropriate health education messages in which the population is directly involved in negotiating the research objectives, methods, and process (Romaioli, Faccio, & Salvini, 2008). Giving the audience time to debate, ask questions, and role play enables the peer educators to try out how it would be during intervention. A highly important factor that emerged was that alcohol drinking is a sensitive issue and should be treated as such during interventions. Thom & Téllez (1986) have shown the same results in their interview study.

The use of role plays, drama, theatre and other forms of the performing arts as an educational tool has enormous potential to influence people's lives by providing space for self-reflection and engagement with characters. However, drama alone provides short term results of improved knowledge (Joronen, Rankin, & Astedt-Kurki, 2008) so it needs to be used along with other educational methods.

#### **6.6.1 Structures available to assist in alcohol use programmes**

The peer educators possessed knowledge as to what to do when they encounter severe alcohol abuse problems that may require specialists or individuals who wish to enrol in an alcohol or drug treatment programme. This knowledge was important because professionals are trained to help in convincing the individuals and making them aware of the problem when they do not realise it, provide and maintain motivation for change and also help develop healthy coping skills (Addictions and Recovery, 2018).

The most common response given was FAMSA which is a non-profit organisation set up to provide counselling, education, training and social development programmes for South Africans in relationship issues (FAMSA, 2009). As the need arose, FAMSA became more and more involved in urgent social issues such as family violence, alcohol and drug abuse, women empowerment, poverty relief and prevention of AIDS (FAMSA, 2011). According to the peer educators, FAMSA has been active in Grahamstown in dealing with issues around harmful use of alcohol and addiction. Rhodes University partnered with FAMSA in 2011 as part of a Staff Wellness Programme initiated by the Human Resources Division. The University has signed a contract with FAMSA to provide a counselling, referral and advisory service to Rhodes employees (Rhodes University, 2011). Like Rhodes University, the University of Witwatersrand has listed FAMSA as one of the referrals for support (University of Witwatersrand Johannesburg, n.d.).

The second most common response was Alcoholic Anonymous (AA) as a recovery option for those struggling with alcohol and other drug use issues. This group meets in Grahamstown every Monday. This support group has shown previous success with relapse as evidenced in a previous study conducted in Tokyo which showed that the AA is effective for alcoholics (Rychtarik, Connors, Dermen, & Stasiewicz, 2000). The 12-step workbook for self-investigation used by the organisation was also shown to be a useful tool in changing attitude and behaviour.

The peer educators also identified the structures provided at the University for help in the related issues. The Rhodes Counselling Centre, Psychology Department and Wellness Office and also identified the peer educators. This shows efforts and commitment made by the University to the provision of services and programmes to assist the workers to manage alcohol issues. The University of Louisiana also has in-house structures for referral to help with alcohol related aspects (University of Louisiana, 2013).

## 6.7 Trainer's manual

A trainer's manual was developed to provide peer educators with a set of materials and instructions for the delivery of training and learning activities on alcohol interventions and for use during the workshops. Participation of peer educators was key in intervention generation, since they understood the community's social, economic, and cultural structures, and were able to provide insight into the appropriateness of the manual. From the responses obtained during the FGDs, the suggestions included the need for information, reference materials, as well as language and layout appropriate for the material.

The readability level of the training material is critically important to the success of the training programme. Using guidelines suggested by other authors (DuBay, 2004; Hoffmann & Worrall, 2004; Sand-Jecklin, 2007; Shieh & Hosei, 2008) on improving the readability of patient-oriented material, modifications were made to the facilitator manual's layout, bulleted and numbered lists were increased, the number of text boxes increased, complicated words were avoided, and more pictures and graphics were used in the explanation accompanying text. These were the same methods employed during the development of the HIL (Section 4.1.5). The use of medical jargon has been found to reduce the readability of health information. The study by Sand-Jecklin (2007) suggests that reducing the amount of medical terminology in health information significantly improves readability levels (Sand-Jecklin, 2007). The difference between the study by Sand-Jecklin and this current study is that they focused on patient information, whilst our information is targeted at peer educators. From the results of the FGDs, the peer educators were familiar with most of the medical terms that were used. Although most of the medical terminology was retained in the facilitator's manual, definitions and clear explanations were given to accompany the text.

The overall document readability was 10.6 and highlighted the importance of having the information and why it was important to be presented in that format. This was based on previous experience with the HIV/AIDS manual. Therefore, as the facilitator's manual was intended for the peer educators and not the entire support staff, the information could be considered appropriate for people with basic health literacy. Of particular interest from the results was the persistent high scores of the Coleman-Liau Index (CLI), giving an average score of 13.5 whilst the SMOG and Flesch Kinkaid gave scores of 8.8 and 9.6 respectively. This was also observed by a study by Kher, Johnson, & Griffith (2017) who assessed the readability of 70 online patient education materials regarding the topic of congestive heart failure, assessed through six readability assessment tools. The mean readability scores were as follows: the Flesch-Kincaid Grade Level (9.79), Gunning-Fog Score (11.95), Coleman-Liau Index (15.17), Simple Measure of Gobbledygook (SMOG) index (11.39), and the Flesch Reading Ease (48.87). A possible explanation for the increase in the score is the fact that, unlike most other readability tests, the Coleman Liau Index relies on the number of characters instead of syllables per words for its calculation which causes this different distribution (Ozok & Zaphiris, 2013). This

result is significant however in terms of the overall readability, since it falls under college level of reading and the other scores are lower with a readability that falls under high school or lower.

Activities in this study's trainer's manual were also included to allow peer educators to build on relevant skills during the implementation phase. The activities were included to be used as icebreakers; discovering information needs; to spike discussion and discovering views and opinions; and participatory learning activities. The activities are learner-centred and involve techniques of doing, analysing, and reflecting. Similarly, use of activities was also employed by a trainer's manual by Equitas – International Centre for Human Rights Education 2007 for Training of Trainers on designing and delivering effective human rights education and also by The Centre for Development and Population Activities for training trainers on development (CEDPA, 2003; Equitas – International Centre for Human Rights Education, 2007).

Trainer's manuals have been used in previous health promotion programmes. The workshops and the facilitator's manual were useful in empowering peer educators with the knowledge on alcohol use; to discuss issues pertaining to the beliefs and attitudes of the community towards alcohol use; and the suggestions on how these issues could be addressed during the implementation stages. The manual was identified as a useful resource in addressing issues around alcohol use.

## **6.8 Intervention workshop**

A workshop offers an opportunity for the participants to solve mutual problems cooperatively. The participants learn how to work with groups, how to solve problems as a group, and how to make use of group interaction (Benell, 1956). A 4-day health promotion workshop was conducted focusing on the NCD risk factors. Aira, Kauhanen, Larivaara, & Rautio (2003) agree that the prevention of risky or harmful alcohol consumption should be taught together with other lifestyle risk factors.

In this study workshops were used to increase peer educator knowledge on harmful use of alcohol. There was a difference in SAQ scores obtained by the peer educators. This may be due to the difference in education level. The education level of the peer educators ranged from Grade 8 to Grade 12 + course or diploma and also other peer educators had been involved with the alcohol WHPP prior to the research. The pre-intervention questionnaire administered before and after the workshops also gave an overview of how much the peer educators knew with regard to alcohol use.

Gains in knowledge were statistically significant and educationally important. Based on the Student t-test, there were significant changes in knowledge in the pre- and post- intervention. The t-test result was consistent with other measures of knowledge. More peer educators correctly answered the knowledge post-intervention test questions. These findings are consistent with systematic reviews on the effectiveness of teaching evidence-based medicine and critical appraisal skills (Coomarasamy & Khan, 2004; Parcel et al., 2018; Parkes, Hyde, Deeks, & Milne, 2001). A workshop on patient education data by Lamiani and Furey (2009) also suggested the efficacy of workshops as an increase post-questionnaire scores in developing patient-centred communication skills suggested an improvement in nurses' knowledge and preparedness to deliver patient education (Lamiani & Furey, 2009). The difference in this study was that peer educators would deliver



the health education to support staff. Other studies have also shown that workshops can be an effective tool in improving knowledge and skills (Davis et al., 2002).

What appears to help promote behaviour change is partly the way in which education is delivered (Thomson O'Brien et al., 2001). The facilitators employed different methods, including role plays, to make message delivery enjoyable and more memorable. These could also be employed by the peer educators during message delivery. Role play has been applied by Skeleton, Hammond, Wiskin, & Fitzmaurice (2008) to medical undergraduates at the University of Birmingham as a learning tool for simulation and applying knowledge. In the current study, role play was used in problem-solving situations in which peer educators explored the alcohol use related problem, alternatives and resources available to them including the HILs and the personal and social consequences of the proposals.

Stevenson, Lewis, & Hay (2004) completed a randomised controlled trial involving education and training of British physiotherapists. While their one-day workshop on searching and appraisal skills was interactive, the overall intervention was not multifaceted, and there was no follow-up. Furthermore, no objective tests of skills or knowledge were used. The current study adopted a multi-faceted approach involving an interactive 4-day workshop for the peer educators which included written materials, use of key stakeholders, role play and discussions, and a post- and follow-up (post- post intervention) questionnaire. Improvements in knowledge were statistically and educationally significant in the post-intervention, but these changes were not maintained at follow-up. There was a decrease in the mean scores from post-intervention to post-post intervention. This may be attributable to our recruitment rate being 30% lower than the workshop. This was different from a study conducted by Muscat et al. (2016) where significant gains in knowledge were maintained at follow-up after eight months.

The educational potential of the workshops is illustrated by participants' reports of gaining a fresh perspective from the workshop, which equipped them with a more critical and systematic approach to alcohol use issues. The peer education intervention seemed to empower peer educators. A study by Lasimbang et al. (2017) reported that participants were empowered to reduce alcohol-related harmful behaviour after workshops were conducted in Sabah, Malaysia.

The stakeholder involvement process provided a locally derived, empirical base for developing the intervention. The stakeholder involvement process described in this paper demonstrates one method by which public engagement in health research can be achieved, at a collaborative level, and this is supported by Kirby (2004). We attribute the success of recruiting stakeholders to the workshop to the relationship of the health promotion team with the Rhodes University community. Engaging the participation of stakeholders plays a significant role in the development of good practice in the promotion of healthier behaviours. Engagement is an inherently interactive activity, and therefore the key stakeholders involved facilitated different sessions of the workshop and included face-to-face discussion during workshops. These discussions allowed stakeholders to actively engage in the process, sharing experiences or knowledge.

## 6.9 Programme evaluation

Evaluating CBPR initiatives can be a particularly challenging task due to the need to consider multiple sources of information. One may approach this by examining the outcomes sought after by a particular research project, but this does not indicate how well the participatory process was carried out (Blevins, Morton, & McGovern, 2008). Even though this research approach has been increasingly and extensively utilized, gaps remain in how the CBPR processes work or how the success of partnerships is evaluated. In addition, there is no comprehensive database for practitioners and researchers to locate instruments that have been constructed for the purpose of evaluating partnerships.

Evaluation of health promotion interventions is essential in order to collect evidence about the efficacy of a programme, identify ways to improve practice, justify the use of resources, and identify unexpected outcomes (O'Connor-Fleming, Parker, Higgins, & Gould, 2006). Health promotion itself can be described as a process in that it is a means to an end, and not an end in itself (Nutbeam, 1998). Importantly, anticipated outcomes in health promotion are frequently long term (Saunders, Evans, & Joshi, 2005). Nutbeam, 1998 suggests evaluation of health promotion programmes through process evaluation. Process evaluation is used to monitor and document programme implementation and can aid in understanding the relationship between specific programme elements and determine whether a programme is delivered as intended to the target audience (Hawe, Hall, & Degeling, 1990; Pawson & Tilley, 1997; Saunders et al., 2005). Like this project, a community-based obesity prevention study in adolescents living in Tonga completed a process evaluation by research staff recording all intervention-related activities, the frequency of the activity, the reach of that activity (how many people were involved in the programme) and the resources required (Fotu et al., 2011).

It is also important to note that evaluation is a reflective process and evaluation design may be flexible according to the context and circumstances. The following stages were used in this study as part of the evaluation process:

### 6.9.1 Determining and addressing gaps

The existing gaps in this study began with the researcher and key stakeholders identifying previous WHPs and discussing their facilitating and limiting factors during SSIs. Suggestions to improve future health initiatives were sought to tailor the design and implementation of the educational intervention for this study in a way that would promote support staff participation in health promotion. This is supported by Li et al. (2009) who state that needs assessment allows researchers to identify appropriate partners, opportunities for health promotion efforts, and potential barriers and strategies to address them.

A previous study showed the prevalence of alcohol disorders and associated socioeconomic characteristics among young men and women living in the Eastern Cape Province, South Africa, where the study was conducted and confirmed the need for alcohol-based interventions (Andersson et al., 2018). For this current study, the researcher also confirmed, with the aid of the key stakeholders and support staff, that harmful use of alcohol was indeed a problem at the University and in the community. Once this was confirmed, the next step was the identification of the determinants of the problems. The determinants or factors affecting harmful use of alcohol, as listed in section 5.2.2, were classified in different thematic categories through the SSIs and

FGDs. The peer educators also suggested through the FGDs that the support staff and community as a whole should be the target population for raising awareness of harmful use of alcohol.

Workplace health promotion has been defined as improving the way work is organised; improving the working environment; encouraging employees to get involved in healthy activities; and enabling people to increase control over and improve the factors that affect their health (European Agency for Safety and Health at Work, 2010; Health and Safety Organisation, 2017; ILO, 2017). The results of this study support these definitions with workplace health promotion being referred to as a concept aimed at overall health of employees, encouraging health, empowering staff members with the ability and information that in the end empowers them to take care of their own health, and having a healthier workforce.

### 6.9.2 Intervention

Once the gaps were identified and the determinants explored, the next step was the generation of intervention materials to assist in the WHPP which was the development of the HILs and the trainer's manual on harmful use of alcohol which were culturally sensitive and context specific. This was followed by the workshops conducted for the peer educators. Participation of the peer educators was key in intervention generation, since they understood their peers' social, economic, and cultural structures, and were therefore able to provide insight into the appropriateness of the HILs and manual. This was supported by a study by Hudon et al. (2016). The peer educator participation during the design and development of the health education material helped to improve its cultural appropriateness. From the responses obtained during the pilot study and FGDs, suggestions from the end users included removal and addition of pictures and text and simplification of material making the final health education material tailored for the target audience.

The workshops and the facilitator's manual were useful in empowering peer educators with the knowledge on issues surrounding harmful use of alcohol to discuss issues pertaining to the beliefs and attitudes of the community towards alcohol use and the suggestions on how these issues could be addressed during the implementation stages. The HILs and manual was identified as a useful resource in the WHPP.

### 6.9.3 Implementation

Implementation evaluation is a process of assessing whether a programme was delivered as intended (Gagnon et al., 2015). Valuable lessons have been learnt from implementation of demonstration projects in developed countries (Brownson, Riley, & Bruce, 1998) and evaluation of community-based interventions (Sellers, Crawford, Bullock, & McKinlay, 1997). Implementation successes include tailoring the project to local needs. A mismatch of the culture and context between the project and the target communities is a significant barrier to effective health promotion programmes (Bernal & Scharrón-del-Río, 2001; Castro, Barrera, & Martinez, 2004; Elliott & Mihalic, 2004). To understand the conditions that were necessary for the implementation the researchers identified culture and context related factors that could promote successful project implementation through the SSIs and FGDs when identifying gaps. The perceived outcomes such as the design of health education material that is context specific and culturally sensitive were achieved.

Gagnon (2015) listed participant responsiveness as an important community characteristic for successful programme implementation. In this study, the peer educators were committed to the programme. In the

programme, this was shown by their consistent engagement in the FGDs and workshops. They also perceived the programme as relevant and useful to the support staff and communities. The peer educators' participation during role plays during workshop showed their understanding of the topics delivered and that they had learned and grasped the concepts delivered and were able to communicate these health messages clearly and in an appropriate manner to their co-workers.

Some barriers to effective health promotion include low health literacy and health education information that is not accessible to the individuals with inadequate literacy (Parker, 2000; RHIhub Toolkit, 2012). Based on the support staff and peer educators' demographics, Tables 15 and 33, the researchers acknowledged that the peer educators and the majority of support staff at the workplace did not have a health background, and therefore health literacy levels were likely low. Therefore, the health education material was designed with minimal jargon and any text or pictures that were found to be confusing for support staff were removed and alternatives that were more familiar and readable were provided.

Characteristics of the programme facilitators - for example, their level of training and experience - contribute to effective programme implementation (Berkel, Mauricio, Schoenfelder, & Sandler, 2011; Dane & Schneider, 1998; Little et al., 2013). The workshop facilitators included two professional nurses; lecturers from various divisions including the Psychology Department, the Business School and HKE; the Community Engagement Director; the Wellness Officer and key stakeholders at the university who were familiar with the context and cultural practices, therefore providing information that was relevant and tailored to the requirements of the target group.

Leadership support was identified by McLellan et al. (2015) as an important factor for implementing successful WHPPs. This study was largely supported. The Vice Chancellor inaugurated the 4-day workshops and the administrative support received, which made this project successful, included allowing the support staff to attend the inauguration and allowing the peer educators to attend meetings and the workshops. The supervisor was able to galvanize the support from various key stakeholders in order to make the 4-day workshop programme that went all the way to the VC inauguration which was a key step in the success of the programme. The existing relationships with the Residential Operations Office, the Director of Community Engagement, the university's Institutional Wellness Officer, and collaborators from Rhodes Business School assisted these key stakeholders to participate during the implementation process. This was further strengthened by the support from different departments like the HCC and the HKE where the facilitators came in different sections. Some of the facilitators were able to speak the local language (e.g. the retired nurse and the CE office director), which neutralized negative power barriers because the language was not a major barrier anymore. The case of this WHPP at Rhodes University differed from other institutions at which workplace programmes lacked organizational support and policies as shown by a systematic review by Mükoma & Flisher (2004).

#### **6.9.4 Programme sustainability**

One of the most important aspects of CBPR is that its research benefits the communities researched, and that it is sustainable. The peer educators had started implementing what they learnt in the workshop at the workplace and in their homes and were planning other outreach programmes on campus. The posters

designed will be mounted around campus for the support staff and the Wellness Officer will continue to work with and support the peer educators during the implementation of the project at the University. This ensures that the peer educators stay guided in their work and promote sustainability, which is one of the key elements of CBPR.

### **6.10 Discussion chapter summary**

This chapter examined the strengths and contributions this investigation has made in understanding the factors affecting Workplace Health Promotion Projects. A greater understanding of this enabled the researcher to make more informed decisions during implementation of the WHPP about activities that would appeal the greatest to the support staff, by considering the characteristics of the target group. This chapter also explored the various reasons that influence alcohol use to gain a better understanding of the factors affecting this population so as to tailor a health promotion project suited for them. This chapter also examined the resulting health promotion material for readability and suitability and explanation of the results. This study also provided a number of useful starting points for future researchers seeking to implement a WHPP.

The final chapter in this thesis will present the conclusions of this study and the main research outcomes. Finally, this section identifies the potential limitations of the current investigation and provides ways that future researchers can overcome these limitations and expand on what has been found.

## 7 CONCLUSION

### 7.1 Introduction

This chapter will focus on the conclusions reached as a result of this study, as well as on the significance, strengths, limitations and recommendations based on the results obtained by it.

### 7.2 Conclusions of the study

The following conclusions are observed from the study:

The peer educators and key stakeholders acknowledged that they were past WHPP attempted at Rhodes University. Despite past initiatives and efforts in WHPP, there were limitations including employee participation in activities available to them as part of a workplace health promotion project. Exploring and identifying the facilitating and limiting factors affecting WHPP at Rhodes University, as part of the current study's needs-based assessment phase, allowed greater insight when implementing this WHPP at the University to facilitate health literacy, empowerment and strengthening of the peer education system with respect to alcohol use.

The key stakeholders and peer educators identified the following as barriers to employee participation: inconvenient scheduling, a lack of sufficient and relevant information regarding the activity, privacy and confidentiality issues and activities being held at inconvenient locations. Some of the factors that contributed to increased participation in these earlier initiatives included the introduction of incentives, and sensitivity and multi-sectorial action where other departments are involved. Based on the principles of CBPR, the peer educators were able to not only identify the barriers but were also able to come up with various solutions to overcome these barriers in the WHPP that were used in this research. The findings at this stage of the research were important to consider during the implementation of the WHPP on harmful use of alcohol in this study. The barriers were overcome in this WHPP by scheduling meetings during the lunch hour when the peer educators were available, communicating the meetings by calling the peer educators before and on the day to confirm attendance and scheduling the meeting venues at central locations, resulting in increased peer educator participation in the programme. A needs assessment is therefore vital in determining and addressing gaps in WHPP.

Results from this research align with various factors that may influence alcohol use, including personal beliefs, culture, peer pressure, education level and unemployment which have been found in previous research in this regard. Results also revealed that there were myths and misconceptions on the health benefits of alcohol use, particularly on the heart, which is playing an important role in the use of alcohol. In light of this, it was prudent to include the promotion of harm reduction and responsible use of alcohol in the WHPP on alcohol use. The results call attention to the importance of establishing WHPP, aiming to raise awareness and provide the clarifications needed on the harmful effects exaggerated alcohol consumption can cause.

The key stakeholders suggested the use of health education material such as HILs and posters. The involvement of the researcher's peers, other health professionals, support staff and the peer educators

resulted in the design and development of context specific and culturally sensitive HILs and in turn a poster based on the three HILs. Health education material on harmful use of alcohol was explained to stimulate the development of responsible use of alcohol and reduce use.

The use of readability tests and the PEMAT and SAM tools during different stages of the design process informed the changes made throughout the development of the HILs. This resulted in HILs that are readable, actionable, and suitable to the target group. The HIL information was accurate and current and the design and layout received positive evaluations. Development of the manual was done in consultation with the peer educators, who provided insights regarding the improvement of the manual, to make it more usable and readable to them. When a WHPP is driven by the peer educators and by the end user feedback, it produces health literacy material that is appropriate for the target audience.

The workshops conducted gave a platform for discussions about alcohol use and issues surrounding this topic. Its important representativeness in this research method can be affirmed, favouring the interaction between the participants and the facilitators. This permitted the establishment of effective communication and allowed for clarifications about the risks of alcohol abuse. Based on feedback from the training workshops, peer educators found the workshops useful and empowering. With knowledge and skills gained from the workshop, they reported that they were confident and ready to promote and advocate for healthier lifestyles among their peers.

Researchers can play their part in health and development in the communities they serve by their proactive roles in understanding and implementing the SDG goals as well as the countries' NCD national plan guides. NCDs pose a huge threat to many developing nations, and researchers can potentially help to prevent and manage NCDs by being involved in health promotion activities that include lifestyle modification. The development and implementation of health promotion programmes on NCDs, especially in workplaces where the majority of adults spend a large portion of their working hours, may prove to be advantageous in the long run. Collaborative participation of support staff and peer educators at Rhodes University, along with suitability and readability tests, has resulted in the development of culture sensitive and context specific health education materials, programmes, and initiatives aimed at raising awareness of the harmful use of alcohol.

### **7.3 Strengths and limitations**

This research is based on CBPR for a specific target group and therefore the researcher in no way attempts to generalize the findings beyond the representative sample of the population. The results generated may provide a practical contribution to how workplace health promotion programmes are implemented and managed to maximise their success and produce the greatest possible benefits for both individual employees and the organization. The outcomes of this research regarding the variables influencing employee participation in workplace health initiatives serve as a valuable contribution to the body of research guiding health promotion with the workforce.

One of the strengths in the research process was the separation of key stakeholders from the support staff during data collection. By excluding their managers from the FGDs, the support staff were better able to voice their opinions and beliefs, especially the constraining factors. This study is strengthened further by the key

role played by the peer educators in the research process, who are essential in promoting the sustainability of the project through adoption and ownership of the HILs and the facilitator's manual developed during this study. The strength of this study was the consistent implementation of end-user feedback to develop HILs that were readable and appropriate to a specific target audience.

This research had some limitations which are explained here. Though only five support staff members were used for the pilot study, the proactive feedback from the participants with qualitative and quantitative data in a way neutralized the issues related to the small sample size. As shown in section 4.12, step 2 in Phase 2 of the project, the study was shortened due to the university shut downs and academic deadlines during disruptions as a result of protest action not just on campus but around all the public universities around the country. Similar responses provided by the participants during the pilot testing with support staff also allowed researchers to proceed to the peer education feedback phase.

Of the 40 peer educators at Rhodes University, 10 volunteered to participate in this alcohol-related project, while the others opted for two other workplace health promotion projects on diets for cardiac health and tobacco use respectively. Of the 10 volunteers, not all of them attended the group interviews. The remaining potential participants cited workplace responsibilities as the reason for their unavailability. Social desirability response is one of the factors that could have resulted in feedback that is not absolutely critical. It is also important to remember that when low health literates are exposed to a health literacy programme, it is something they have never done before and therefore do not know what is expected of them so therefore the extent to which they can be critical can be a dilemma to them as to how much of critical feedback you expect.

Of the 40 peer educators 35 were women, which is a strength in terms of the commitment and focus women peer educators will have, as well as empathy and compassion they will demonstrate when people come to them from the support staff group. Gender imbalance amongst the respondents could also create a potential problem because in a predominantly patriarchal society, men can be more comfortable to talk to other male peer educators and if there are a few male peer educators compared to the number of female peer educators, especially on an alcohol topic, open and proactive participation by the support staff may be hindered.

## **7.4 Recommendations for future research and practice**

### **7.4.1 Broadening the focus of the research**

This study utilised Rhodes University as a case study and was limited to data collection suitable to the Master's project timeline and a small research team. Future research could take on a broader scope, include a longitudinal study, and incorporate further case studies. Research in other university settings and other organisations may also be beneficial.

### **7.4.2 Use of trainer's manual**

One of the key findings was the importance of having the trainer's manual for peer educators for use during the implementation of the HPP. The continued collaboration of the Wellness Office, regular training of peer educators and regular updating of the trainer's manual could facilitate sustainability of this project. We



recommend regular usage of the trainer's manual and that it be updated regularly based on emerging evidence that is relevant to the target group.

#### **7.4.3 Training of peer educators**

Based on the feedback from the core team at the Wellness Office, not all of the peer educators registered were participating in the WHPP and may possibly have left the job at the University affecting the availability of peer educators on campus. There were also peer educators who did not attend the FGDs and workshops due to other reasons like work commitments. This affects the quality of information given to the support staff. We recommend that the Wellness Office recruits and trains other peer educators to replace those who have left the university and to expand the number of peer educators. Initially it was 40 peer educators for the HIV/AIDS programme; now it has expanded to take on NCDs, to reach the 1500 support staff. Current ratio of peer educators to support staff is 1:38. By training more peer educators, this ratio can decrease to ideally 1:20 which are smaller groups and more sustainable.

We also recommend the provision of refresher courses with the collaborators who assisted with the workshops to equip the peer educators with the required knowledge which is current. The Rhodes HCC and the nurses who collaborated during the training sessions can retain the continuity of this important core group that can assist with the continued training of peer educators.

#### **7.4.4 Evaluation of implementation into the workplace**

During the timelines of this project, sustainability was ensured by training the peer educators who will implement the WHPP with their workmates using the knowledge gained through the process and health education material provided, including the HILs and trainer's manual. Future research may include evaluation to determine the depth of impact that the peer educators had in the community researched. We recommend that the efficacy and cost-effectiveness of the implementation be researched to find out if indeed the peer educators are using the trainer's manual in the WHPP, if the project is actually assisting people in the community to understand the harmful use of alcohol and the factors around it and if the support staff are adopting the practices by assessing users' actions, practices, and behaviours regarding the workers' stage of change since the PEMAT scores deemed the HILs actionable.

It is also worth mentioning that WHP issues may be analysed not only from the perspective of public health, but also from the point of view of other disciplines such as HKE, Commerce, Education and Psychology which can equally adopt and expand on this project.

#### **7.4.5 Larger sample size**

Future research on larger populations is recommended. The small study sample used during the pilot study did not ensure the possibility to generalize the results to all support staff at the university. Thus, it would be worthwhile to increase the sample size and involve a greater variety of support staff to provide feedback on the WHPP.

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## 9 Appendices

### 9.1 Appendix 1: Faculty of Pharmacy Higher Degrees Committee approval letter



**RHODES UNIVERSITY**

*Faculty of Pharmacy • Grahamstown • 6140 • South Africa*

March 1, 2016

Ms Praise Marara  
Faculty of Pharmacy  
RHODES UNIVERSITY

Dear Praise

**Re: Approval from the Faculty of Pharmacy's Higher Degrees Advisory Committee**

The Faculty of Pharmacy's Higher Degrees Advisory Committee has approved your research project entitled:

*Workplace health promotion for [responsible] alcohol use at Rhodes University*

Your supervisor can provide feedback, based on the comments received during the Committee meeting, and electronically.

Please ensure that the Faculty of Pharmacy's Higher Degrees Advisory Committee is notified should any substantive change(s) be made, for whatever reason, during the research process.

Yours sincerely,

**Prof. George C. Wells**  
*Chairperson: Faculty of Pharmacy Higher Degrees Advisory Committee*

## 9.2 Appendix 2: Ethical approval letter



RHODES UNIVERSITY  
*Grahamstown • 6110 • South Africa*

FACULTY OF PHARMACY

Tel: +27 (0)146 601 8181 • Fax: +27 (0)146 601 7106 • E-mail: [dean.pharmacy@ru.ac.za](mailto:dean.pharmacy@ru.ac.za) • PO Box 91 Grahamstown, 6110, South Africa

31<sup>st</sup> March 2016

Dear Prof. Srinivas and Ms. Marara

**Re: Ethical approval by the Faculty of Pharmacy's Ethics Committee**  
**(Tracking Number PHARM 2016-08)**

We are pleased to inform you that the Faculty of Pharmacy's Ethics Committee grants you ethical approval for your research entitled:

**Health promotion: Alcohol Use.**

Please ensure that the Faculty of Pharmacy's Ethics Committee is notified should any substantive change(s) be made, for whatever reason, during the research process.

Sincerely,

Roman Tandlich, PhD

Deputy Chairperson of the Faculty of Pharmacy's Ethics Committee

### 9.3 Appendix 3: Participant invitation letter

**Title of the Project:** Workplace Health Promotion, Alcohol Use

Dear Participant,

You are kindly invited to participate in a research study conducted by Miss Praise Marara, a Masters student at the Faculty of Pharmacy, Rhodes University. If there is any words you do not understand, you may ask the above mentioned researcher or interpreter for clarification. If you are willing to participate, you will be asked to sign a consent form.

#### **Purpose of the project**

This project is designed to promote health in a workplace setting.

#### **Potential risks or discomforts**

We do not foresee any risks or discomfort from your participation in this research. The study personnel can stop the study if it appears harmful.

#### **Potential benefits**

By participating in this project, you may gain knowledge on how alcohol use affects your health and social well-being.

#### **Compensation for participation**

You will not receive any payment or any other compensation for participation in this project. There is also no cost to you for your participation.

#### **Confidentiality**

Any information that is collected in this study and that can be identified with you will remain confidential, and will be disclosed only with your permission, or as required by law. Information that can identify you individually will not be released to anyone outside of the project, although Miss Praise Marara will use the information collected in her dissertation and other publications. Information obtained from this study may be used by either the researcher or the researcher's supervisors for publication or educational purposes. Any information used for publication will never identify you individually.

#### **Participation and Withdrawal**

Your participation in this study is completely voluntary. You may choose whether or not to be in this project. To participate in this project, you must have worked at Rhodes University for at least 5 years. All discussions in this project are voice recorded. If you volunteer to be in this study, you may withdraw at any time, without consequences of any kind. You may also refuse to answer any questions you do not want to answer. There is no penalty if you withdraw from this study.

#### **Participant rights**

If you have any relevant questions about your rights as a researcher participant, please contact

Researcher: Miss Praise Marara at [g12m5466@campus.ru.ac.za](mailto:g12m5466@campus.ru.ac.za) (cell: +27 735 233 786)

Researcher's Supervisor: Professor Sunitha Srinivas at [s.srinivas@ru.az.za](mailto:s.srinivas@ru.az.za)

## 9.4 Appendix 4: Participant informed consent form

**Provisional Project Title:** Workplace Health Promotion, Alcohol Use at Rhodes University

**Name of Researcher:** Praise Marara

I, the undersigned, confirm that,

*Note to researcher: Tick the boxes below accordingly as the contents of this form are read.*



**RHODES UNIVERSITY**  
Where leaders learn

I have been provided with enough information about this project, as provided in the invitation letter.	
It has been explained to me how the information I will provide will be used	
I have been given the opportunity to ask questions about the project and my participation.	
I voluntarily agree to participate in this project.	
I understand I can withdraw at any time without giving reasons and that I will not be penalised for, nor questioned on, why I have withdrawn.	
The procedures regarding confidentiality have been clearly explained (e.g. the information I provide will be used in the research but my name will not be mentioned.) to me.	
I have been informed of the presence of an interpreter and I am comfortable that they are part of this interview.	
I give permission to the interviewer, Miss Marara, to record this interview to be used for analysis and publication.	
I understand that the researcher's supervisor will have access to this information and that they agree to preserve the confidentiality of the data and they agree to the terms I have specified in this form.	
I, along with the researcher, agree to sign and date this informed consent form.	

### Name of participant

.....

Date.....

Signature.....

### Declaration by interviewer

I, Praise Marara (the researcher) and.....

(The person taking consent) confirms that any personal information obtained during this interview and research study will remain strictly confidential.

Date .....

Signature.....

### Name of person taking consent

.....

Date .....

Signature.....

## 9.5 Appendix 5: Question guide for Semi-Structured interviews

### A. Demographics

Participant number: \_\_\_\_\_

Age: \_\_\_\_\_

Gender: \_\_\_\_\_

Home Language \_\_\_\_\_

Role at Rhodes University: \_\_\_\_\_



RHODES UNIVERSITY  
Where leaders learn

**Introductory note:** Discussions with support staff at RU on work place health promotion will be carried out. It is important that note all views and opinions are important and therefore there are no wrong or correct answers in this discussion. You are not forced to answer the questions. Should you not wish to answer any of the questions, please indicate this to me.

### B. Workplace health promotion initiatives

What does workplace health promotion mean to you?

What are the current policies and practices at RU with respect to workplace health promotion?

Which health promotion initiative(s) have worked at RU?

What have been the contributing factors that have contributed to these initiatives being successful?

What have been the limiting factors that have stopped or slowed down the progress of the initiative(s)?

What comments have you received from support staff on the current health promotion policies and practices at RU? Did the staff find these policies helpful?

What workplace health promotion programmes have not been successful in the past?

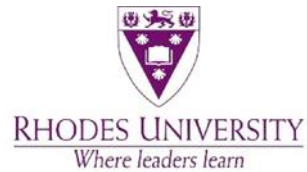
What were the factors that contributed to the failure of these projects?

How can the current Health promotion programmes be improved?

Do you have any other comments or suggestions?



## 9.6 Appendix 6: Question guide Focus group discussions



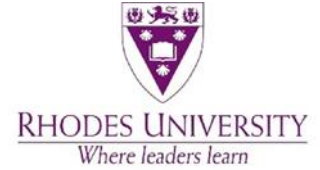
### QUESTION GUIDE FOR FOCUS GROUP DISCUSSIONS

*Consent form to be explained and signed*

1. What workplace health promotion projects have been introduced to you? What health features did these projects cover?
2. Do you consider these projects to have been helpful? Please explain
3. What can be done to improve these projects?
4. Have there been projects that cover alcohol use? If yes what are they?
5. Were these projects helpful?
6. What were the strengths and weaknesses of the programme?
7. What are the factors that encourage alcohol use at the work place?
8. What are the factors that restrict alcohol use by the support staff at Rhodes University?
9. Do you have any ideas on how to help raise health promotion awareness for alcohol?
10. Do you have any other comments or suggestions?

9.7 Appendix 7: Workshop; Pre- , post- and post-post intervention questionnaire

QUESTIONNAIRE; KNOWLEDGE OF THE PEER EDUCATORS ON HARMFUL USE OF ALCOHOL



Participant number: \_\_\_\_\_  
Gender: \_\_\_\_\_  
Age \_\_\_\_\_  
Home Language \_\_\_\_\_  
Role at Rhodes University: \_\_\_\_\_

Pre and post workshop questions

Please mark with an 'X' the correct answer below

1. Are you aware of any services / organizations, agencies that offer advice/support on alcohol related issues?

Yes	
No	

If yes please state below-

---

---

2. What is the legal age to drink alcohol in South Africa?

16 years	
18 years	
21 years	

3. Have you seen any health information on alcohol in the last three months?

Yes	
No	

4. Which organ is the site of the greatest absorption of alcohol?

Stomach	
Small intestine	
Liver	
None of the above	

***For the following questions please mark with an 'X' the correct box***

5. Drinking milk before drinking an alcoholic beverage will slow the absorption of alcohol into the body.	True	False	Don't know
6. Drinking of alcoholic beverages is a commonly accepted drinking pattern in this country.	True	False	Don't know
7. Alcohol is not a drug.	True	False	Don't know
8. Some fatal highway accidents are alcohol related.	True	False	Don't know
9. Liquor diluted (with drink or juice) will affect you faster than liquor drunk undiluted.	True	False	Don't know
10. A person cannot become an alcoholic by just drinking beer.	True	False	Don't know
11. Moderate consumption of alcoholic beverages is generally not harmful to the body.	True	False	Don't know
12. Eating while drinking will have no effect on slowing down the absorption of alcohol in the body.	True	False	Don't know
13. Drinking coffee or taking a cold shower can be an effective way of sobering up.	True	False	Don't know
14. Alcohol has the same effect on everyone.	True	False	Don't know

### Questions on Leaflet 1 'Health consequences of Alcohol use'

1. What areas of the body are affected by alcohol consumption?

The brain	
The liver	
The heart	
All of the above	

2. Which of these is **NOT** a long term effect of alcohol abuse?

Mouth and throat cancer	
Risk of chest infections	
Loss of consciousness	
High blood pressure	

3. Which one is **NOT** a sign or symptom of alcohol abuse?

Unable to control the amount of alcohol you drink	
Drinking and driving	
Having a hang over	
Loss of hearing	

4. Which organ is affected when alcohol misuse causes cirrhosis

Liver	
Heart	
Kidneys	
Stomach	

5. How can one help prevent alcohol related problems

Cutting down the amount of alcohol drunk	
Avoiding drinking the recommended limit of alcohol	
Do other activities that you enjoy, that is <b>NOT</b> drinking	
All of the above	

***For the following questions please mark with an 'X' the correct box***

6. How do you think drinking alcohol regularly affects the following?

Risk of heart disease	Increases	Decreases	Has no effect	Don't know
Blood pressure levels	Increases	Decreases	Has no effect	Don't know
Risk of cancer	Increases	Decreases	Has no effect	Don't know

7. Many people drink to escape from problems, loneliness and depression.	True	False	Don't know
8. Many people drink for social acceptance, because of peer group pressures, and to gain adult status.	True	False	Don't know
9. Slurred speech, nausea and vomiting are short term effects of alcohol.	True	False	Don't know

**Questions on Leaflet 2 'The Harmful use of alcohol'**

***Please tick the correct answer***

1. Drinking alcohol can affect

The drinker	
The drinker's economy	
People close to the drinker	
Society	
All of the above	

2. Select illnesses which are commonly contracted by the chronic drinker.

Emphysema and bronchitis	
Liver diseases and heart diseases	
Cancer and diabetes	

Both b and c are correct	
--------------------------	--

***For the question 3 please mark with an 'X' the correct box***

**3. Harmful use of alcohol...**

Does <b>NOT</b> increase accidental injuries	True	False	Don't know
Does negatively affect your job	True	False	Don't know
Can lead to abuse of children and family members	True	False	Don't know
Does <b>NOT</b> affect road accidents because of drinking and driving	True	False	Don't know
Can negatively affect families and earning	True	False	Don't know

**Questions on Leaflet 3 'Alcohol in Pregnancy and Foetal Alcohol Syndrome (FAS)'**

1. What are the signs and symptoms of Foetal Alcohol Syndrome

small teeth	
small or large head	
small body size	
all of the above	

***For the following questions please mark with an 'X' the correct box***

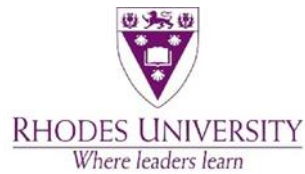
**3. If a person drinks alcohol during pregnancy .....**

the alcohol can reach the baby	True	False	Don't know
The child may be born early (premature)	True	False	Don't know
It will <b>NOT</b> affect the baby	True	False	Don't know

3. What should a person do if they have been drinking alcohol during pregnancy?

continue drinking because it will not affect the baby	
stop drinking immediately, because even small amounts of alcohol is not safe for the baby	
continue drinking if the pregnancy is more than three months old	
none of the above	

## 9.8 Appendix 8: Question guide for final focus group discussion



### FINAL FOCUS GROUP DISCUSSION QUESTION GUIDE

1. Has the program been implemented as intended? / How is the intervention being implemented?
2. Has the process strengthened your capabilities, skills or knowledge with regard to alcohol use?
3. What can be improved to make the health promotion activities sustainable?
4. Any suggestions on how this initiative may be improved?
5. Any other comments?

## 9.9 Appendix 9: Suitability Assessment of Materials score sheet

Suitability Assessment of Materials score sheet		
Name of reviewer (optional):		
Title of publication:		
Date:		
1. Content	(a) Purpose is evident	
	(b) Content about behaviours	
	(c) Scope is limited	
	(d) Summary included	
2. Literacy demand	(a) Reading grade level <ul style="list-style-type: none"> <li>• Superior= 5th grade or lower</li> <li>• Adequate=6th to 8th grade</li> <li>• Not suitable= 9th grade and above</li> </ul>	
	(b) Writing Style, active voice used	
	(c) Vocabulary	
	(d) Context given	
	(e) Advance organisers	
3. Graphics	(a) Cover graphic shows purpose	
	(b) Type of graphics used	
	(c) Relevance of illustrations	
	(d) Lists and tables explained	
	(e) Captions used for graphics	
4. Layout and typography	(a) Layout factors	
	(b) Typography	
	(c) Subheadings used	
5. Learning stimulation and motivation	(a) Interaction used	
	(b) Behaviours are modelled and specific	
	(c) Motivation	
	<b>Total score</b>	



## 9.10 Appendix 10: Patient Education Materials Assessment Tool score sheet

Patient Education Materials Assessment Tool for Printable Materials score sheet			
Reviewer Name (optional):			
Title of Publication:			
Date:			
ACTIONABILITY			
	Item	Response Option	Rating
18.	The material clearly identifies at least one action the user can take.	Disagree=0, Agree=1	
19.	The material addresses the user directly when describing actions.	Disagree=0, Agree=1	
20.	The material breaks down any action into manageable, explicit steps.	Disagree=0, Agree=1	
21.	The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action	Disagree=0, Agree=1	
22.	The material provides simple instructions or examples of how to perform calculations.	Disagree=0, Agree=1, No calculations=NA	
23.	The material explains how to use the charts, graphs, tables, or diagrams to take actions.	Disagree=0, Agree=1, No charts, graphs, tables, or diagrams=N/A	
24.	The material uses visual aids whenever they could make it easier to act on the instructions.	Disagree=0, Agree=1	

**9.11 Appendix 11: Pilot testing questionnaire**  
**PILOT TESTING FEEDBACK FORM**

*Pictogram assessment*




Date:

Respondent number:

1. What is your home language?

English		isiXhosa		Afrikaans		isiZulu		Other	
---------	--	----------	--	-----------	--	---------	--	-------	--

Picture	Do you understand?		Comment
	Yes	No	
			

2. Did you understand all the pictures?

Yes		No	
-----	--	----	--

If no to the above question please give examples and explain why

.....

.....

2. Where any if the pictures helpful to you?

Yes		No	
-----	--	----	--

If yes to the above question, please state which picture and why

---

---

3. Are any of the pictures culturally or religiously offensive to you?

Yes		No	
-----	--	----	--

If yes to the above question please explain why and give examples

---

---

4. Would you like if there were more pictures?

Yes		No	
-----	--	----	--

*Pamphlet assessment*

1. Is the information in the information pamphlet easy to understand?

Yes		No	
-----	--	----	--

Please explain your answer to the above question

2. Is the font size easy to read?

Yes		No	
-----	--	----	--

Please explain your answer to the above question

---

3. What do you think about the amount of text in the pamphlet?

Too much		Just right		Too little	
----------	--	------------	--	------------	--

If you answered "too much" or "too little" please explain

---

4. Where you able to understand all the words in the pamphlet?

Yes		No	
-----	--	----	--

If no to the above question please give examples

---

---

5. Is the language easy to understand?

Yes		No	
-----	--	----	--

If "yes" to the above question, please explain

---

If "No" to the above question, please explain

---

---

Is there any further information you think is required? Please explain

---

---

6. To what extent does this health pamphlet help you understand the risks of alcohol use?

Very helpful		Relatively helpful		Not helpful	
--------------	--	--------------------	--	-------------	--

7. Do you have any further comments or suggestions?

---

---

Thank you for your participation in this assessment!

## 9.12 Appendix 12: HIL 1 – Health consequences of alcohol abuse

### Prevention of Alcohol-Related Health Problems

Family and friends can encourage drinkers to stop drinking alcohol.

May cut down, e.g. by limiting drinking to weekends, social events etc.

Do not drink more than the recommended limit of 140 mL of alcohol per week.

Instead of drinking alcohol, try to drink juice or water.

Do other activities that you enjoy and help you reduce your stress levels.



Encourage others not to drink.



Juice



Relax with family



Gardening

CIRCLE THE FOLLOWING WORDS AND LEARN THE EFFECTS OF ALCOHOL:

ALCOHOL ABUSE INSOMNIA VOMITING  
NAUSEA CANCER STROKE ULCERS  
NUMBNESS HEPATITIS

A	B	U	S	E	X	O	N	U	M	B	N	E	S	S
L	U	N	E	F	O	S	Z	E	B	J	P	E	Z	R
C	S	A	U	O	Q	J	T	A	R	O	R	C	I	E
O	M	K	L	W	M	A	O	R	T	J	A	I	N	X
H	R	N	C	K	E	M	H	M	O	Z	C	T	S	B
O	P	G	E	H	I	Y	O	L	O	K	W	J	O	W
L	Q	K	R	D	F	C	V	B	G	Z	E	U	M	M
W	E	D	S	U	E	W	T	N	F	X	V	L	N	E
F	R	Z	M	Q	N	Y	I	T	S	N	A	C	I	E
H	E	P	A	T	I	T	I	S	R	I	S	O	A	V
W	H	O	Z	E	I	C	A	A	E	M	T	R	L	N
L	M	J	Q	M	O	Y	M	B	C	O	R	S	E	O
T	D	S	O	R	H	N	R	U	N	V	O	A	B	U
O	Z	V	P	U	L	A	H	N	A	U	S	E	A	N
A	V	I	S	A	M	F	O	R	C	E	V	E	R	J

For more information, see a nurse, pharmacist or doctor.

National Helpline: 0861 HELP AA (435-722)

**RHODES UNIVERSITY**  
FACULTY OF PHARMACY

Researchers acknowledge Deputy Vice-Chancellor (Research) for supporting the Research and Development Grant for postgraduate bursaries, Rhodes University's Research Council Grant awarded to Prof Srinivas and the Talloires Network Grant awarded to Prof Srinivas. The Talloires Network is an international association of universities committed to strengthening the civic roles and social responsibilities of higher education. Learn more: <http://talloiresnetwork.tufts.edu>



### Health Consequences of Alcohol Abuse

**NO TO ALCOHOL ABUSE**



### Alcohol Abuse?

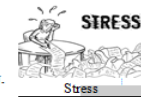
Alcohol abuse is the habit of drinking too much alcohol. It is known to have negative health, financial, educational, and social effects on a person's life.

#### Causes of Alcohol Abuse

- To meet the need for alcohol (addiction).
- To avoid facing problems.
- To feel better and relaxed.
- To feel less stressed.
- Financial pressure (e.g. due to unemployment, poverty).
- Social isolation (being separate from others).
- Coping with violence.
- Peer pressure.



Avoid alcohol



Stress



Peer pressure

### Signs and Symptoms of Alcohol Abuse

- Not being able to control the amount of alcohol you drink.
- Dangerous behaviours such as violence and drinking and driving.
- Failing to look after family.
- Not going to work or not doing other daily tasks due to feeling unwell after heavy drinking ('having a hangover').
- Not being able to sleep at times, and then over-sleeping.



Do not drink and drive



Not being able to

### Short Term Effects of Alcohol

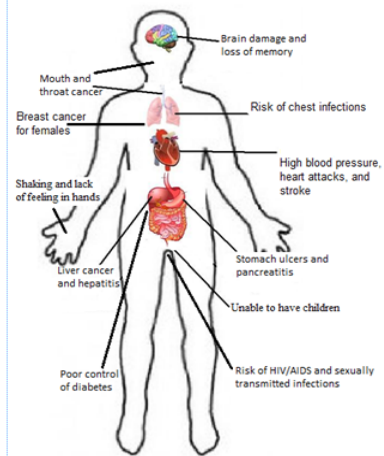
- Slurred speech.
- Poor balance.
- Slow reactions.
- Nausea and vomiting.
- Loss of consciousness.



Vomiting

### Long Term Effects of Alcohol Abuse

Harmful use of alcohol is one of the world's leading risk factors for long-term diseases.



Effects of alcohol on health

## 9.13 Appendix 13: HIL 2 – The harmful use of alcohol: Health, Social and Economic effects

**Results of harmful use of alcohol**

**Did You Know...**

- Many people drink alcohol heavily because it makes them feel better about themselves or relieves stress.
- The dangerous use of alcohol (for example when a person drinks until drunk) can have a bad effect on the drinker's behaviour and daily routine.
- You should reduce the use of alcohol to one drink a day, to prevent negative effects on your health, working life and the people around you.

**CIRCLE THE FOLLOWING WORDS AND LEARN THE EFFECTS OF ALCOHOL:**

ALCOHOL	HARMFUL	ACCIDENTS
ABSENCE	VIOLENCE	ARRESTS
UNEMPLOYMENT	DEPRESSION	STRESS
SOCIETY		

A	L	C	O	H	O	L	Z	H	A	R	M	F	U	L
B	Q	A	V	I	S	A	M	F	O	R	E	V	E	R
S	D	W	O	X	S	T	R	E	S	S	Z	U	E	W
E	U	E	S	O	C	I	T	S	A	H	O	N	R	G
N	O	T	P	A	K	J	T	Y	O	L	O	E	O	H
T	I	M	O	R	E	N	S	Z	L	X	T	M	C	K
I	P	A	N	E	E	R	F	O	O	D	S	P	K	L
N	Q	S	V	D	B	S	P	Y	V	C	H	L	I	J
G	U	Y	I	X	L	O	S	T	E	P	W	O	N	E
O	T	C	A	N	K	Q	I	S	U	Z	Y	G	C	
A	C	O	M	T	J	I	Z	V	O	X	C	M	R	N
A	L	S	A	R	R	E	S	T	S	N	M	E	O	E
D	D	E	F	R	D	T	K	L	I	B	E	N	L	S
N	G	H	C	A	W	Y	H	Q	N	O	J	T	L	B
V	I	O	L	E	N	C	E	J	E	N	E	F	S	A

For more information, discuss with a nurse, pharmacist, doctor.  
**National Helpline: 0861 HELP AA (436-722)**

**Rhodes University**  
 Faculty of Pharmacy

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**The Harmful Use of Alcohol**

*Health, Social and Economic Effects*

### Effects of Alcohol

Drinking a lot of alcohol often can cause harm to:

- The individual.
- The drinker and his or her family's economy.
- People close to the drinker.
- Society as a whole.

**Harmful use**

### Social Effects of Alcohol

Drinking alcohol can change the way people act and how they treat their family and friends. Social effects of heavy drinking include:

- Increased accidental injuries.
- Not doing well at your job.
- Missing work or school.
- Not taking care of children or households.
- Being violent to other people.
- Abusing children and family members.
- Getting arrested for breaking the law.
- Increased road accidents because of drinking and driving.

**Accidental injuries**

**Being violent**

**Getting arrested**

**Road accidents**

### Economic Effects of Alcohol

Irresponsible use of alcohol increases poverty.

Heavy alcohol drinking can financially affect families in the following ways:

- Getting paid less money (due to not working well).
- Losing jobs.
- Spending more money on medical treatment.

Effects of alcohol on a drinker's family and earnings







# Workplace Health Promotion for Alcohol Awareness

*A Trainers' Manual*



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## BACKGROUND

This is a training manual for raising awareness on alcohol use. This manual provides trainers with an initial set of materials and suggestions for the delivery of training and learning activities on health promotion activities to address responsible use of alcohol.

# Chapter 1

## Why has this training resource been developed for the Rhodes University peer educators?

Based on the peer educators' training and experience with the HIV/AIDS programme; and leadership demonstrated, peer educators are ideally suited for this Health Promotion project which addresses the adverse effects of alcohol.

Alcohol affects health, economic, social and relationships circumstances. In South Africa, It has been shown that 48% of the total deaths are due to communicable diseases and 44% are due to non-communicable diseases and 8% due to injuries (shown in the figure below). There are causal relationships between the harmful use of alcohol and incidences of both non-communicable diseases and infectious diseases such as STIs, including HIV/AIDS, as well as injuries.

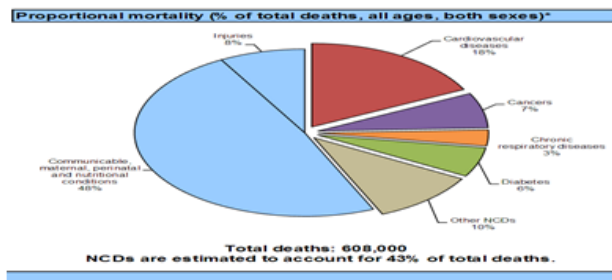


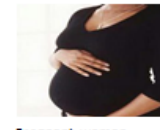
Figure 1: Percentages of deaths in South Africa  
Causes of Alcohol abuse

- To meet the need for alcohol (addiction)
- To avoid facing problems
- To feel better and relaxed
- To feel less stressed
- Peer pressure
- Financial pressure (e.g. due to unemployment, poverty)
- Social isolation (being separate from others)
- Coping with violence

### Health risks of alcohol

Harmful use of alcohol is accompanied with over 200 physical and mental health problems, including;

- non communicable diseases like liver diseases, cancers
- unsafe sexual practices resulting in the spread of sexually transmitted infections including HIV/AIDS and unwanted pregnancy
- fetal harm during pregnancy



Pregnant woman

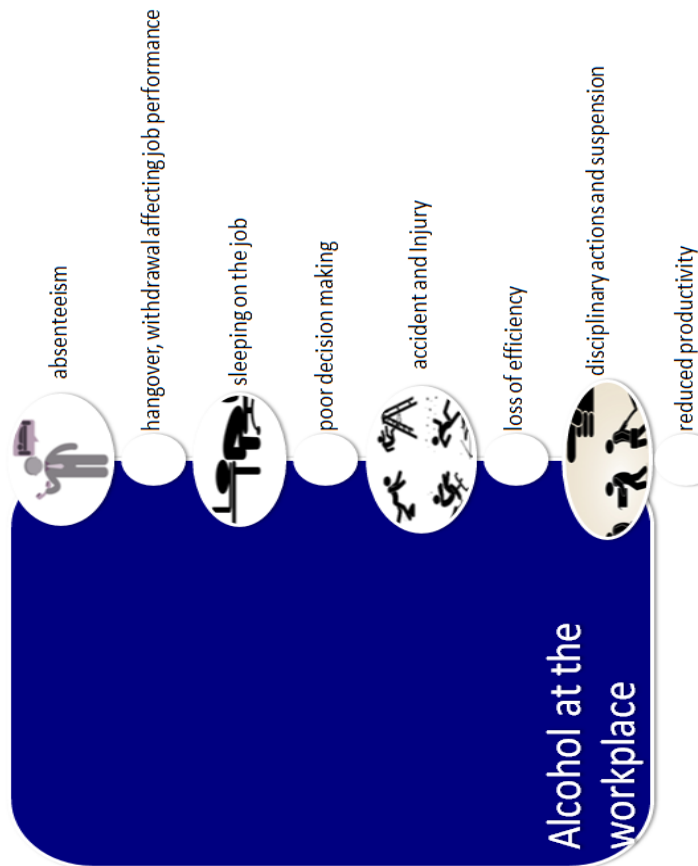
- family and domestic problems



Domestic violence

- suicidal tendencies and behavior

The Health risks of alcohol are discussed more in chapter 4.



## Chapter 2

### An introduction to alcohol brief interventions for peer educators

After completing this chapter, participants will:

- understand what is meant by the term 'brief intervention' in relation to alcohol and related terms

- be able to introduce 'brief interventions' with regard to alcohol.



#### What is a brief intervention?

A **brief intervention** is a practice used to motivate change for an unhealthy or risky behaviour by helping the individual understand how this puts them at risk and to reduce or give up their substance use.

An **alcohol brief intervention** is a practice used to motivate change for harmful use of alcohol by helping them understand how their alcohol abuse puts them at risk in order to reduce their alcohol consumption and/or reduce their risk of harm.

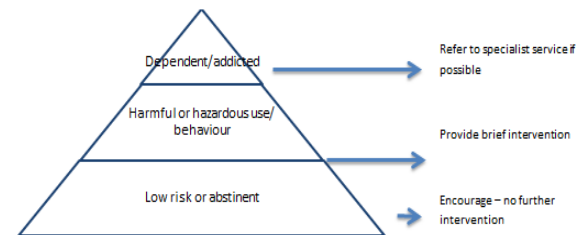
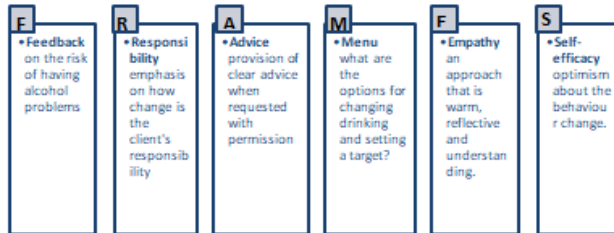


Figure 2: Interventions required to stage of alcohol use; Adapted from: Substance Abuse and Mental Health Services Administration (2006)

F.R.A.M.E.S is an acronym that describes what happens in a brief intervention.



**Feedback** can include

- information about the individual's drug use and problems
- information about personal risks associated with current alcohol use patterns
- general information about alcohol related risks and harms.

Feedback may also include a comparison between the individual's alcohol use patterns and problems and the average patterns and problems experienced by other similar people in the population.



**Responsibility**

A key principle of intervention with alcohol users is to acknowledge that they are responsible for their own behaviour and that they can make choices about their alcohol use.



The messages shown above in the illustrations enable the individual to retain personal control over their behaviour and its consequences. This sense of control has been found to be an important element in motivation for change and to decrease resistance.



**Advice**

The most important part of effective brief interventions is the provision of clear advice regarding the harms associated with continued use. Individuals are often unaware that their current pattern of substance use could lead to health or other problems or make existing problems worse. Providing clear advice that cutting down or stopping alcohol use will reduce their risk of future problems will increase their awareness of their personal risk and provide reasons to consider changing their behavior.



**Menu**

Effective brief interventions and self-help resources provide the individual with a range of alternative strategies to cut down or stop their alcohol use. This allows the individual to choose the strategies which are most suitable for their situation and which they feel will be most helpful. Providing choices reinforces the sense of personal control and responsibility for making change and can help to strengthen the individual's motivation for change. Examples of options for individuals to choose could include:

- Keeping a diary of alcohol use (where, when, how much, who with, why)
- Helping individuals to prepare alcohol use guidelines for themselves
- Identifying high risk situations and strategies to avoid them
- Identifying other activities instead of drug use – hobbies, sports, community activities etc.
- Encouraging the individual to identify people who could provide support and help for the changes they want to make
- Providing information about other self-help resources and written information (Health Information Leaflets on alcohol use can be made available)
- Providing information about other groups or counsellors that specialise in alcohol problems eg the Alcoholic Anonymous (AA), counselling centre at Rhodes for a staff member at Rhodes University.
- Putting aside the money they would normally spend on substances for something else



### Empathy

(an approach that is warm, reflective and understanding) listen to understand without trying to defend, persuade or confront.



### Self-efficacy

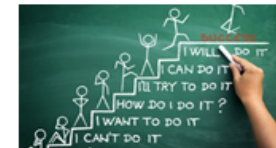
An interviewing style that enhances people's belief in their ability to change. Encourage individuals' confidence that they are able to make changes in their alcohol use behaviour. People who believe that they are likely to make changes are much more likely to do so than those who feel powerless or helpless to change their behavior.

Be aware of how ready the person is to change, and to respond accordingly – according to the stages of change model below.

• **Enhancing motivation** - which involves supporting the individual as they weigh up the pros and cons of their current behaviour (benefits of reducing or cutting down alcohol covered in **chapter 4**).

• **Coping strategies** – helping someone who is trying to change to anticipate when they will find it difficult and to plan how to deal with those occasions.

Making a change to drinking habits is **a gradual process** that occurs over time. Changing behaviours usually takes a long time with trial and error on what works (and what doesn't) along the way. People go through a number of stages of change before they are able to change their behaviour for good. By knowing more about the challenges and obstacles in the way of change, you may be better able to support an individual in moving through the stages.



### Stages of behavior change



#### Precontemplation/unaware (Not Ready):

- They are 'happy-users'.
- They do not have any worries about their use of alcohol, and do not want to change.
- They may not know or accept that their alcohol use is risky or problematic.

As a peer educator what can I do?

People in this stage are unlikely to respond to advice to change their behaviour but may be open to information about the risks associated with their level and pattern of harmful use of alcohol. Providing information may encourage them to recognise the risks of alcohol abuse and to think about cutting down or stopping.



### Contemplative (Getting Ready)

(aware of the problem and of the desired behavior change):

People in this stage are likely to:

- be unsure about their alcohol use. They can see both the good things and the not so good things about their alcohol use.
- have some awareness of the problems associated with substance use and may be weighing up the advantages and disadvantages of their current substance use pattern.
- others may be willing to make a change but they may not know how to make a change or may not be confident that they are able to change.

*As a peer educator what can I do?*

Interventions for people in this stage focus on providing information about their substance related risks, advice to cut down or stop, and helping them to talk about the good and not so good things about their current substance use pattern. The aim is to encourage them to find and talk about their own reasons to cut down or stop their substance use.

A helpful tool at this stage is to see doubt about alcohol use as a balance. On one side of the balance are the benefits to the individual of their current alcohol use behaviour and the costs associated with changing it (reasons for remaining the same), while on the other side are the costs of current substance use and the benefits of change (reasons for change). Change is unlikely to occur until the reasons for change outweigh the reasons for staying the same (See figure below).

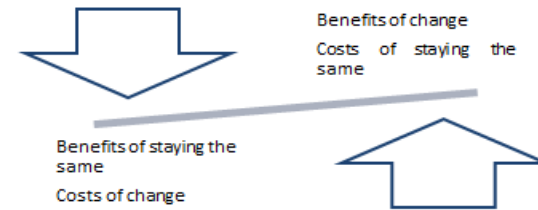


Figure 3: Decision balance

Interventions for this stage may also include:

- helping the individual to recognise their strengths and ability to change.
- suggesting a range of strategies the individual could choose to help them cut down or stop their substance use



### Preparation (Ready)

: this stage is an information gathering period. At this stage, the individual is determined, making plans, and the person can be motivated to help themselves during the transition.



### Action/trying:

People in the action stage:

- have made the decision that their use of substances needs to change.
- may be abstaining or cutting down, or have decided to change their established behaviour.

*As a peer educator what can I do?*

People in this stage are likely to continue to feel unsure about their alcohol use and to need encouragement and support to maintain their decision. Interventions for this stage also include:

- negotiating aims and goals for changing risky alcohol use behaviours together.
- suggesting a range of strategies the individual could choose to help them cut down or stop their alcohol use (menu of options).
- helping them to identify situations where they might be at risk of relapse.
- discussing with the individual their plan for action to reduce or stop their alcohol use.



**Maintaining:**

- The person is attempting to maintain the behaviour changes that have been made.
- Long-term success means remaining in this stage.

People who are trying to maintain behaviour changes need confirmation that they are doing a good job and encouragement to continue. Peer educators or primary health care workers can assist people in this stage by providing praise for successes and reinforcing the patient's strategies for avoiding situations where they are at risk of relapse or helping them to move on after a small lapse.



**Relapse**

- Most people who try to make changes in their alcohol use behaviours will go back to alcohol use, at least for a time. This should be expected. Smokers, for example, make an average of 6 attempts to quit smoking tobacco before they are successful.
- Having relapsed, they will return to one of the preceding stages: - pre-contemplation, contemplation or action.
- For many people, changing their substance use gets easier each time they try until they are eventually successful.



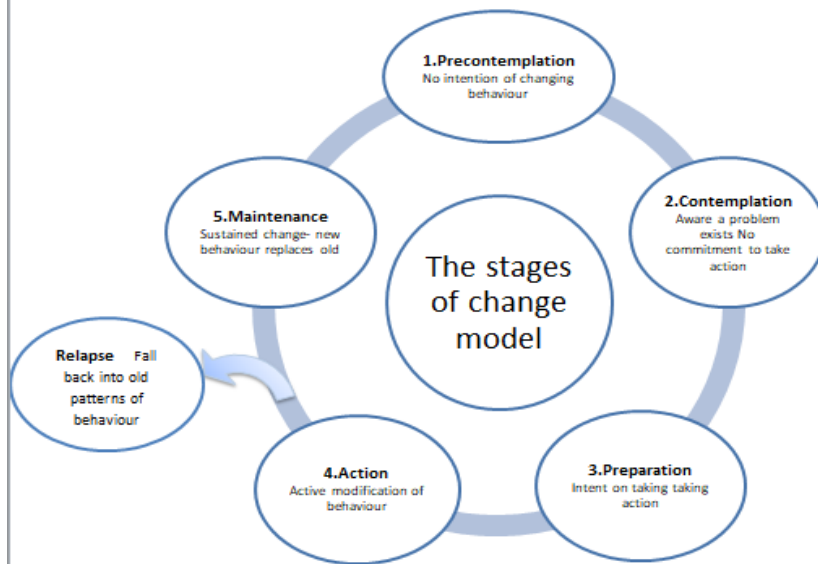


Figure 4: Stages of behavior change: Adapted from

**It is important to**

**Choose a suitable approach** - depending on where the person is for example:

**Information and advice**

Ask for example 'Would you like to discuss how alcohol might be affecting you?'

Build the user's understanding of the effects of alcohol, drinking limits and the benefits of cutting down.

## Chapter 3

### Attitudes to alcohol

#### Learning outcomes

After completing this chapter, participants will:

- recognise the feelings and attitudes towards alcohol and drinkers
- recognise how different feelings or attitudes might affect ones practice with regard to the delivery of brief interventions
- have thought about personal, social, cultural and environmental influences on alcohol consumption
- be aware of the impact of excessive alcohol consumption on individuals and society in terms of physical and mental health, inequalities, crime and the economy

Activity: Give out the 'Agree', 'Disagree' and 'Not Sure' cards and the Attitude Statement cards to the group and have a discussion.

Ask the group to reveal a statement which caused debate, and to provide feedback on the discussion that they had about it.

This is a useful opportunity to discuss the myths and stereotypes that are associated with alcohol and population subgroups, including different cultures.

Table 1: Myths associated with alcohol

What they may tell you (myths and stereotypes)	What you should know
Excessive drinking is a serious problem at the workplace and it is getting worse.	<ul style="list-style-type: none"> <li>• Employees arriving at work with alcohol smelling on the breath</li> <li>• employees consuming alcohol during working hours</li> <li>• employees missing days (or even weeks) at work without justification, or with lame and feeble excuses (but never a medical certificate, or perhaps even with a</li> </ul>

	<p>medical certificate every time)</p> <ul style="list-style-type: none"> <li>employees slipping out during lunch break "for a quick one" – all this seems to be a problem which is on the increase – with a resulting increase in problems for the employer.</li> </ul>
<b>Drinking in excess is embedded in South African culture, and is here to stay.</b>	<p>In South Africa most popular alcoholic drinks are beer and wine. SA is a social drinking society with binge drinking being on the rise. The predominant pattern in South Africa is of infrequent heavy drinking, particularly by men. Specifically, this is determined by some of the indicators used in determining drinking pattern:</p> <ul style="list-style-type: none"> <li>number of heavy drinking occasions</li> <li>high usual quantity of alcohol consumed</li> <li>drinking in public places</li> <li>drinking at community festivals.</li> </ul> <p>Drinkers continue to ignore the effects and consequences of binge drinking. Firstly there are the short term effects; vomiting, blackouts, fainting, dizziness and much more. The long term effects, however, are much more serious.</p> <ul style="list-style-type: none"> <li>Stomach ulcers</li> <li>liver problems</li> <li>cardiovascular (heart) disease</li> <li>in extreme cases even death can be expected when you abuse alcohol over the long term (these effects are explained more in the following chapters).</li> </ul>
<b>Getting drunk now and again is OK.</b>	<p>The risk of an individual's health being harmed as a consequence of their drinking alcohol becomes higher as the amount of alcohol consumed increases, and also as the frequency of drinking increases. However, people's views of this statement again depend on the definition of 'drunk', and the circumstances in which this behaviour occurs. In most cases, getting drunk is associated with additional risks to safety, and individuals must choose the amount of risk that they are comfortable taking. Health problems due to excessive</p>

	<p>alcohol consumption can occur within a relatively short period of time (e.g. intoxication, poisoning) or develop more gradually (e.g. liver disease). People's views of the acceptability of drunkenness can also be influenced by the gender of the person who is drinking, as concern about the increase in women's drinking seems to reflect a broader moral panic, fuelled by the media, which frequently portrays women who drink as hedonistic or promiscuous.</p>
<b>It's easy to spot someone who drinks too much.</b>	<p>Many people who drink at a level that is putting their future health at risk show no outer signs of this. In fact, levels of drinking that might not result in any hangovers or even drunkenness may be risky to long-term health. In addition, drinking too much on one occasion can result in a serious accident. South Africa's reported road fatalities per 100 000 is 25.1. It is important that people don't make assumptions about a person's alcohol consumption based on their appearance, their background, their lifestyle or any other stereotype.</p>
<b>A ban on alcohol advertising would make no difference to consumption.</b>	<p>There is no doubt that alcohol advertising contributes to the social acceptability of drinking, as does the normalisation of alcohol use by its frequent appearance in the entertainment media. There is evidence to show that there is an association between previous exposure to alcohol advertising and marketing and subsequent drinking behaviour by people.</p>
<b>Drinking alcohol during the working day is never a good idea.</b>	<p>Sometimes there is pressure to join in by having a pint at lunchtime, or people may 'feel like a drink' during the working day. However, it is worth noting that 20–25% of all workplace accidents are estimated to involve alcohol in some way. In South Africa the economic costs associated with alcohol abuse in the workplace are likely to be in excess of approximately R23 billion (2% of the gross national product) per year.</p>

## Chapter 4

### Units and drinking limits

#### Learning outcomes

After completing this unit, participants will:

- understand unit measures of alcohol and their limitations
- know approximately how long it takes for alcohol to be removed from the body after a drinking session
- be able to recognise common terms used to describe different levels of alcohol consumption and the associated harm

#### What is a unit?

A unit is equivalent to 8g or 10ml of pure alcohol(ethanol)



This is equal to:

- One 25ml measure of spirits (40% alcohol by volume(abv))
- Half a 175ml glass of average - strength wine (12.5% abv)
- Half a pint of normal strength lager (4% abv)

It takes approximately 1 hour for the body to metabolise (process) 1 unit of alcohol.

This starts from when a person begins drinking.

#### What are the drinking limits for adults?




For over 18 year olds

**Men** should not consume more than **3-4 units per day**

**Women** should not consume more than **2-3 units per day**

**All drinkers should abstain from alcohol at least 2 days a week.**

**Table 2: Different alcohol drinks and daily limits**

Drink (abv strength)	Daily limits	
	Women daily unit is 3 units	Men daily limit is 4 units
Normal strength beer /lager/ cider 4% 	Just under 1.5 pints	Just over 2 pints
Medium strength beer/ lager/ cider 5% 	Just over 1 pint or just under 2 bottles (330ml)	Just over 1.5 pints or just under 2.5 bottles (330ml)
Wine 12.5% 	Just under 1.5 standard glasses (175 ml)	Just under 2 standard glasses (175ml)

-- Spirits 40% 	3 shots (25ml)	4 shots (25ml)
--	----------------	----------------

It is important to note that any reduction in daily alcohol consumption will result in a decrease in risks and an increase will also increase the risks.

Therefore, if someone does not feel like the daily limits are realistic for them, they will benefit from an overall reduction in their alcohol consumption.

Information and advice: How can one benefit from cutting down?

**Physical benefits from cutting down**

•Improved memory

•Sleeping better

•Having more energy

•Having fewer hangovers

•Feeling happier and less anxious

•A lower risk of developing many forms of cancer

•A lower risk of brain damage

•A lower risk of high blood pressure

•Losing weight

•A lower risk of liver disease



Woman sleeping



Happy family



Losing weight

Table 3: Psychological, social and financial benefits

Psychological	Social	Financial
---------------	--------	-----------

A lower risk of accident or injury.	Developing relationships. better	Being more successful at work.
		
Less chance of getting involved in fights.	Feeling more positive about yourself.	Saving money
		
A lower risk of drunk driving.	Having more time for other interests.	
		

**Note:**

If a user does not want to discuss or consider cutting down their drinking, the peer educator should not try to persuade or influence them.

You can acknowledge that they do not want to talk about cutting down their drinking. But can offer to talk or listen whenever they are ready.

## Chapter 4

### Raising the issue of alcohol

After completing this chapter, participants will:

- be able to recognise the issues which can be associated with or adversely affected by alcohol consumption
- be able to recognise the illnesses which can be associated with or adversely affected by alcohol consumption



### Alcohol dependence or Alcoholism

When an individual is physically or mentally **addicted** to alcohol, they have a strong need, or craving, to drink and feel like they must drink just to get by.

**Alcoholism** is a long-term disease and it is important to note that it is not a weakness or a lack of willpower.

### Some signs of alcohol abuse or dependence

Certain behaviors may mean that you're having trouble with alcohol. These include:

- Drinking in the morning, often being drunk for long periods of time, or drinking alone.
- Changing what you drink, such as switching from beer to wine because you think it will help you drink less or keep you from getting drunk.
- Feeling guilty after drinking.
- Making excuses for your drinking or doing things to hide your drinking, such as buying alcohol at different stores.
- Not remembering what you did while you were drinking (blackouts).
- Worrying that you won't get enough alcohol for an evening or weekend.

### Harmful use of alcohol

Is defined as alcohol consumption that increases the risk of harm or results in adverse events for example health and social harm.

Activity: give participants the leaflet on the *Health Consequences of alcohol* to read through.

Ask the participants how they felt about the reading on alcohol and health:

- Were they surprised by any of the information?
- Do they have any questions?

In South Africa, alcohol is so widely available that many people forget that it falls into the category of a depressant drug. This does not mean that by drinking alcohol you will feel down or depressed. It means that it depresses the brain's functions. This, in turn, changes people's behavior. It is because of its mind-altering properties, and other potentially damaging effects on the body, when consumed irresponsibly, that alcohol can be quite a dangerous substance and why its sales are controlled.

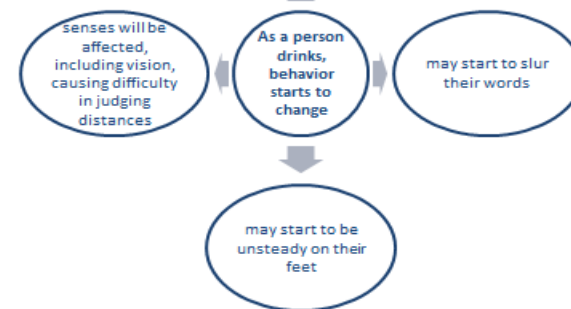


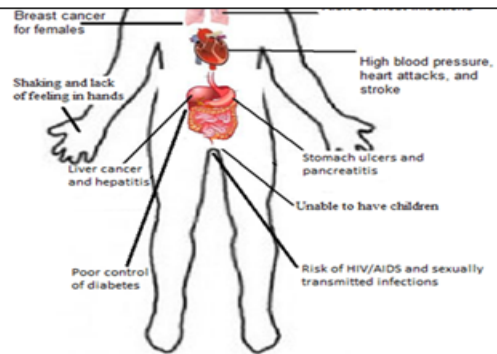
Figure 5: How behaviour changes as people drink alcohol

If a drunken person continues drinking, it can have very serious effects. Automatic functions start to be affected (heart, lungs). This is known as **alcohol poisoning** and causes a person to lose consciousness. An unconscious person can choke to death

on his or her own vomit. A person can also die from **acute alcohol poisoning** – from having too much alcohol in the bloodstream.

*Note*

- *Women are more affected than men*
- *A small person is more affected than a big person*
- *A person who has empty stomach is more affected than a Person who has eaten a big meal*
- *And because the body builds up a tolerance to alcohol: A Person who drinks rarely will appear more affected than a person who drinks regularly<sup>1</sup>*



**Figure 6: Effects of alcohol on the body**

- **Accidents/injuries:** trauma or head injury; falls and collapses in the elderly.
- **Stomach/digestive system:** dyspepsia (indigestion), gastritis, vomiting of blood; diarrhoea and malabsorption; acute and chronic pancreatitis.
- **Liver:** liver abnormalities ranging from deranged liver function tests to hepatitis, fatty liver and cirrhosis (explained more below).

• **Cardiovascular system:** cardiac arrhythmias (irregular heartbeat; hypertension and stroke; cardiomyopathy; blood dyscrasias (e.g. low platelet count or white cell count).



*Heart disease*

Alcohol consumption increases the risk of high blood pressure, a risk factor for having a heart attack or a stroke. Increases in your blood pressure can also be

**Figure 7: The heart**

caused by weight gain from excessive drinking.

Heavy drinking weakens the heart muscle and the heart can't pump blood as efficiently this can cause premature death, usually through heart failure.

• **Reproductive system:** impotence and problems with libido; unexplained infertility.

*Erectile dysfunction*

Alcohol is a depressant, and using it heavily can dampen mood, decrease sexual desire, and make it difficult for a man to achieve erections or reach an orgasm while under the influence. In fact, overdoing it on alcohol is a common cause of erectile dysfunction.

**Cancers:** of the mouth, pharynx, larynx, oesophagus, breast and colon.



*Oesophageal cancer*

Drinking alcohol increases the risk of oesophageal cancer. The chance of getting oesophageal cancer increases with consumption of alcohol. Combining smoking and drinking raises

**Figure 8: Oesophageal cancer** the risk of oesophageal cancer more than using either alone.

**Other effects:**

–withdrawal seizures and fits starting in middle age



Figure 9: The Human brain

*Damage to central nervous system*

Drinking alcohol can impair memory, sound reason and/or judgment more difficult. Depression, anxiety, feelings of panic, and even suicidal tendencies. Alcoholism can even lead to the development of nerve

damage and dementia (due to brain damage/injury).

–acne, eczema, psoriasis, multiple bruising

–gout

Effects on mental health	Social issues	Occupational effects
Anxiety and panic disorders.	Relationship problems and domestic violence.	Repeated absenteeism or truancy, especially around weekends.
Depressive illness.	Neglect of children.	Impaired work performance and accidents.
Amnesia, memory disorders and dementia.	Criminal behaviour (e.g. driving offences, breach of the peace, shoplifting).	Employment difficulties.
Treatment resistance in other psychiatric illnesses and as a factor in relapse.	Misuse of the emergency telephone services.	
Self-harm.	Unsafe sex/sexual risk taking.	
	Personal risk taking.	
	Financial problems.	
	Bereavement (can result in use of alcohol as a coping strategy).	

Activity: "Do people who drink irresponsibly know the consequences?"

Discussion

## Chapter 5

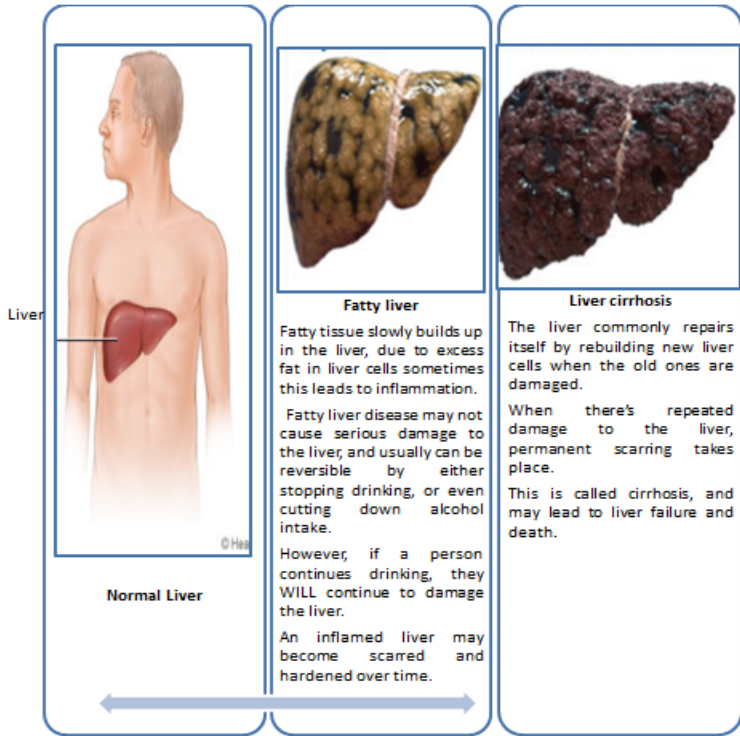
### The liver and harmful use of alcohol

After completing this chapter, participants will

- Know the function of the liver
- Know the stages of liver damage due to alcohol use overtime
- Understand what fatty liver and liver cirrhosis is

The liver is our largest internal organ and it has 500 different roles. This is a part of your body that does regular overtime. One of the liver's most important functions is to break down food and convert it into energy when you need it.

Removes potentially toxic byproducts of certain medications	<b>Liver functions</b>	Breaks down nutrients from food to produce energy when needed
Produces most proteins needed by the body	<p>Normal liver</p>	Produces most of the substances that regulate blood clotting
Produces bile, a compound needed to digest fat and to absorb vitamins A, D, E and K		Helps your body fight infection by removing bacteria from the blood



## Chapter 6

### Harm reduction due to harmful use of alcohol

After completing this chapter, participants will

- Know the options one can take to reduce harm reduction due to alcohol use
- Know the options for reducing overall consumption
- Understand more on drinking and driving

#### Activity

Discussion on the following questions on harm reduction

Can start a conversation by saying;

'I'm worried about the fact that when drunk an individual can have sex with someone. Do you mind if we have a chat about how you can stay safe?'

In South Africa **7 million** people are living with HIV/AIDS.

**19.2%** adult prevalence (individuals affected by the disease)



About 1 in 5 people are infected with HIV/AIDS in South Africa.

Alcohol use, especially binge drinking, is associated with risky sexual behaviors and sexually transmitted diseases (STDs), according to several research studies.

Alcohol abuse increases the risk for STDs in three key ways:

1. multiple partners;
2. unprotected sex (sex without a condom); and
3. combining additional substance abuse with alcohol and sexual activities.



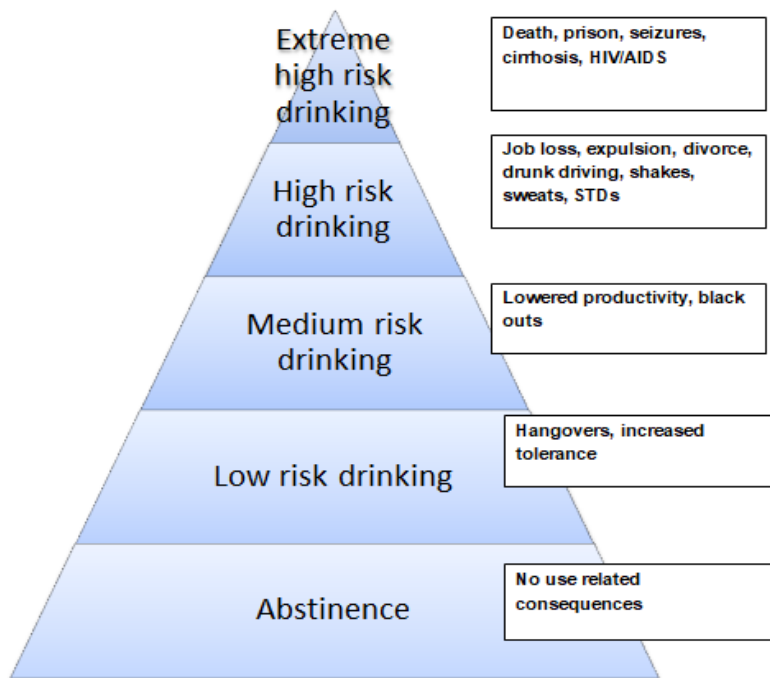


Figure 10: The Harm Reduction alcohol pyramid

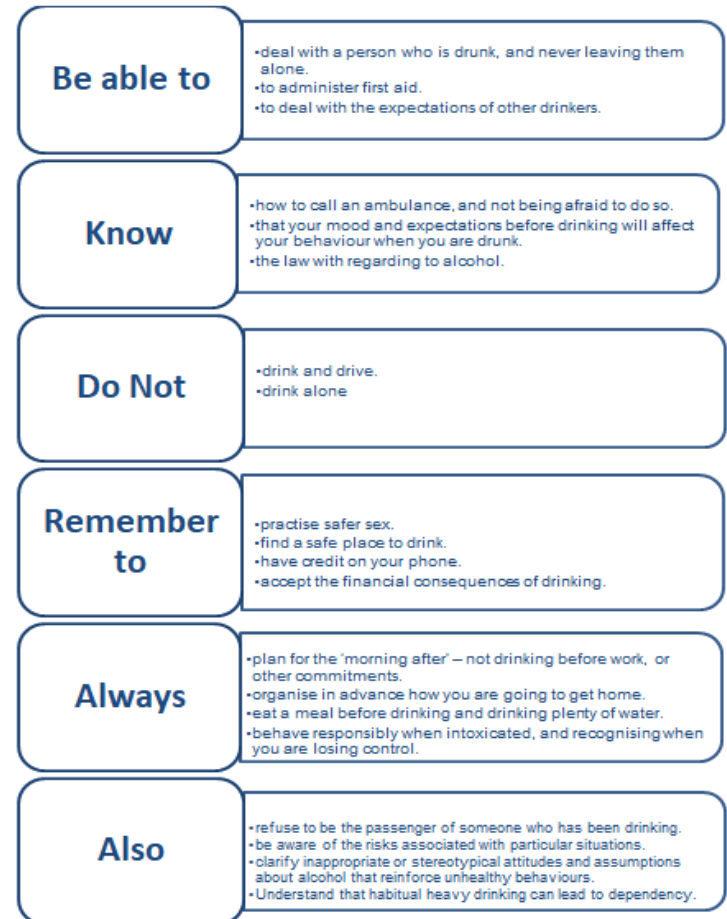

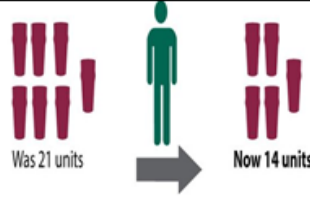


Figure 11: Options for harm reduction

**Table 4: Options for reducing overall consumption**

<p><b>Drink on fewer occasions</b></p>	<ul style="list-style-type: none"> <li>•Work out why you drink, and do something else instead.</li> <li>•Plan ahead each week which days you will avoid alcohol.</li> <li>•Save the money that you would have spent on alcohol and then treat yourself.</li> <li>•Enlist the help (unwitting if necessary) of friends at non-alcoholic social events.</li> </ul>
<p><b>On each occasion, drink fewer alcoholic drinks</b></p> 	<ul style="list-style-type: none"> <li>•Pace oneself– plan how long you will be out and how many drinks you will have, and stick to your plan.</li> <li>•Take smaller sips.</li> <li>•Put your glass down between sips.</li> <li>•Occupy yourself – don't just drink, but participate in other activities (e.g. gardening, reading, chatting, watching tv, etc.).</li> <li>•Drink for the taste rather than for the effect.</li> <li>•Dilute your drinks so that they last longer.</li> <li>•Avoid joining in rounds, or alternatively, when it is your round, skip a drink or have a spacer (a non-alcoholic drink).</li> <li>•Drink a spacer instead of a chaser.</li> <li>•Try to drink at the same pace as a slower drinking friend or companion.</li> <li>•At home, don't finish the bottle – keep some for another day.</li> </ul>
<p><b>Reduce the amount of alcohol in each alcoholic drink, for example:</b></p>	<ul style="list-style-type: none"> <li>•Switch from a higher alcohol content to a lower one:             <ul style="list-style-type: none"> <li>–from strong lager (5%) to standard lager (4%).</li> </ul> </li> </ul>

 <p>Was 21 units</p> <p>Now 14 units</p>	<ul style="list-style-type: none"> <li>•Switch to smaller measures             <ul style="list-style-type: none"> <li>–from a large glass of wine (250ml) to a standard glass (175ml)</li> <li>–from pints to bottles of beer</li> <li>–use a smaller glass at home</li> <li>–use a spirit measure at home.</li> </ul> </li> <li>• Change the drink             <ul style="list-style-type: none"> <li>–from a bottle of mixed spirits to a single measure of spirits</li> <li>–from a pint to a whisky</li> </ul> </li> </ul>
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**Drinking and Driving**

In South Africa the Blood Alcohol Content limit for drivers is based on the type of drivers but the general limit is 0.05%. There is no dispute that alcohol affects a person's ability to drive. In fact, the body begins to be adversely affected from around 0.02% BAC.



**So how much can I safely drink and still drive?**

It is impossible to say that a certain number of drinks will keep you below a government set limit or ensure your driving is safe. The amount of alcohol in your blood depends on age, sex, size, what you've eaten and many more factors. This means it is impossible to predict the exact effect and therefore the only truly "safe" level is not to drink alcohol at all when driving.

Remember



Activity

"Talking Wall" Individuals write down thoughts on a particular topic and these are then stuck on a wall, with particular topics grouped together. This can be a game which introduces a discussion exercise.

## Chapter 7



### Alcohol during pregnancy

After completing this chapter, participants will

- To learn that alcohol has a teratogenic effect on the foetus.
- To understand how alcohol reaches the foetus.
- To know that there is no safe amount or timing of alcohol consumption during pregnancy
- Will be able to understand alcohol's impact on the fetus by studying the effects on the following areas of foetal development:
  - Growth

- Facial features
- Central nervous system

### What happens when alcohol enters the body during pregnancy?

Alcohol passes easily through the placenta. It has been shown that stillborn babies born to women using alcohol prior to delivery have shown that the amount of alcohol in the foetus' blood is the same or slightly higher than the mother's.

**A pregnant woman never drinks alone.**



Alcohol may also be transmitted to the baby during breastfeeding. This is because the central nervous system and some of the organs are not fully developed at birth, women should not drink alcohol while breastfeeding. Many women have reported that they are still being told to have a beer to assist in beginning the flow of breast milk.

**This is not good advice; breast feeding mothers should follow the advice given by a nurse, doctor or other healthcare professionals.**

### How much alcohol should one drink during pregnancy

1. It is impossible to state with absolute assurance that any amount of alcohol consumed during pregnancy will not damage the foetus. The only statement which can be made with complete accuracy is "zero exposure equals zero risk". Therefore, drinking should be discouraged at any point during the pregnancy.



2. The more a pregnant mother drinks the more at risk the foetus is for some kind of damage which could lead to an alcohol-related diagnosis such as Alcohol Syndrome.
3. A unit of alcohol is a unit of alcohol, regardless of the type of alcoholic drink consumed. Many people believe that drinking wine or beer is less harmful to the

fetus than hard liquor. Alcohol can be harmful to the foetus whether it is in a bottle of beer, a glass of wine, a wine cooler or hard liquor; **alcohol is alcohol.**

**Think: Baby or the bottle?**



#### **Alcohol damage to foetus**

Alcohol damage to the fetus can result in fetal alcohol syndrome which is a combination of growth deficiencies, facial abnormalities and central nervous system damage.

#### **Growth**

Growth is more affected during the last three months of pregnancy, than any other time during the pregnancy. Although alcohol consumption at any point in the pregnancy can put a fetus at risk for growth deficiencies, a woman who drinks moderately to heavily during the third trimester is even more at risk of having a child with growth deficiencies.

#### **Facial features resulting from alcohol use during pregnancy**

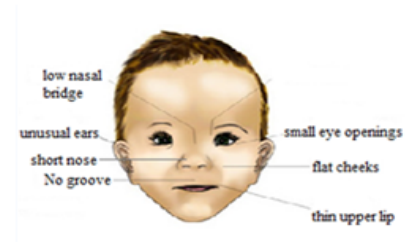
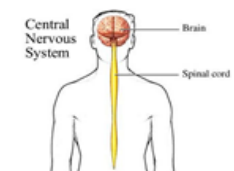


Figure 12: Features of the face in Foetal alcohol syndrome

These problems can lead to learning and behavior problems. When these types of problems are associated with a positive history of substantial alcohol exposure during gestation but without the physical characteristics of FAS (growth deficiency and the complete cluster of facial anomalies).

#### **Behavioural problems**

- The child can be too active
- problems with attention or learning
- intellectual deficit
- speech development is often slow, and the child may have much less in-depth language than other children of the same age



#### **Central nervous system**

Babies born may show brain damage such as problems like a **small head**. When the head is small, the brain is small, which increases the risk for mental retardation.

Another possible birth defect associated with FAS in some people is **hydrocephalus**, an abnormal accumulation of fluid causing the brain and the skull to enlarge, sometimes called 'water on the brain'.

Extreme abuse of alcohol during pregnancy can cause **holes in the brain**. Life is usually not sustainable in this situation.

Nervous system problems (like seizures), mental retardation may result.

#### **Overall Key Learning Points**

- Alcohol affects the way the brain functions.
- There is a progressive range of signs that can be observed when people drink too much. Servers must be
- Levels of drunkenness can be affected by gender, food consumption, tolerance and body size.
- Alcohol misuse can lead to a wide range of health, economic and social problems.
- The strength of alcohol drinks varies significantly. To help us compare, we need to look at the
- Number of grams of pure alcohol contained in a given drink

## 9.17 Appendix 17: Project timelines

Description	Date
1 <sup>st</sup> meeting with supervisor	August 2015
Submission of research proposal for Phase 1 to Higher Degrees Committee	12 February 2016
Higher Degrees Committee meeting	1 March 2016
Higher Degrees Committee clearance	1 March
Submission of application to Ethics Committee	16 March 2016
Ethics Committee clearance	28 March 2016
Phase 1- SSIs with key stakeholders	5 to 11 May 2016
Phase 2 - Designing of the first draft three health information leaflets	4 to 12 April 2016
Peer review of HILs	13 April 2016
Identifying volunteering support staff that formed the core group of peer educators for the alcohol Workplace Health Promotion Programme.	20 April 2016
Pilot testing of HILs with support staff	17 to 21 April 2016
FGD with peer educators	17 May 2016
Designing trainers manual	11 October to 23 November 2016
Workshop	30 January to 2 February 2017
Meeting with peer educators for post-post intervention	18 May 2017
Content validation of HILs with HCC nurses	8 to 13 June 2017
Finalising of health information leaflets	14 June 2017
Design of poster	14 June to 16 June 2017