

**Collaborative health literacy development: A World Health Organization
Workplace Health Promotion approach to address tobacco use**

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

MASTER OF PHARMACY

By

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Abstract

Background

Non-Communicable Diseases (NCDs) are a major global public health threat and tobacco use in particular is the leading cause of preventable illness and mortality globally. Furthermore, vulnerable and socially disadvantaged people get sicker and die sooner, especially because they are at higher risk of being exposed to harmful products such as tobacco and have limited access to health services. Tobacco use also has a major impact on the workplace, adversely affecting work productivity and increasing absenteeism. Both the living and work environments, therefore, play an important role in contributing towards the NCD epidemic. Demographics, culture, behaviour change reluctance and health literacy are all factors which exacerbate tobacco prevalence in South Africa. Workplace health promotion, however, is not well established in many workplaces.

This study aimed to develop, implement and evaluate the effectiveness of a culturally-sensitive and contextually-appropriate collaborative workplace health promotion literacy programme on tobacco use, utilizing tailored health information leaflets and the Rhodes University peer educators support staff, guided by the World Health Organization Workplace Health Promotion Framework.

Method

The research was conducted using a participatory action research approach, which involved four phases: Firstly, the Exploratory phase assessed tobacco-related health promotion policies and practices at Rhodes University; and established facilitating and constraining factors related to tobacco use. Secondly, the Educational health promotion phase involved designing and testing a health promotion educational intervention to address tobacco use related challenges, which took the form of culturally sensitive and appropriate health information leaflets to be used as an educational intervention. Thirdly, in the Implementation phase health promotion training workshops were conducted with volunteering Rhodes University Peer Educators. Finally, an Evaluation phase involved evaluating the tobacco health promotion programme presented to the Rhodes University Peer Educators through a focus group discussion; and evaluating Peer Educator recall on the tobacco related health

information discussed during the training workshops through a post-post intervention questionnaire.

Eight semi-structured interviews (SSIs) and seven focus group discussions (FGDs) were conducted with support staff, peer educators and key stakeholders to establish the need for a comprehensive workplace health promotion initiative, and to identify the facilitating and constraining factors to conducting such an initiative on tobacco use at the University. Three health information leaflets (HILs) were developed collaboratively with the Peer Educators following a series of scientific, end-user testing approaches. The HILs were tested for readability, comprehension, actionability and suitability. A four-day health promotion training programme was conducted to improve user friendliness, memory retention and recall of the HILs by the peer educators and to improve tobacco related health literacy aspects. The participants' memory recall was evaluated using a pre- and post-, and post-post-intervention questionnaire to evaluate knowledge transfer. The study participants were also equipped with the completed HILs to distribute to their peers and to use as reference sources of information when needed in future.

Results

The peer educators and institutional management supported the need for a tobacco workplace health promotion intervention. The intervention and evaluation phase of this study proved that health information material developed was readable, actionable, suitable, user-friendly, culturally sensitive and contextually appropriate. The workshops resulted in a significant increase in the participants' tobacco related health knowledge. Through the adoption of a collaborative approach to the research, the participants felt empowered and ready to be agents of change amongst their peers in the workplace.

Recommendations

The collective use of external expert reviewers, end-user testing techniques and validated computer programmes are recommended to improve the validity of health promotion research outcomes. A longitudinal study that focus on behaviour change, specifically, with health evaluation and monitoring aspects could be conducted as the next step to this study.

Declaration

I declare that this thesis, titled **“Collaborative health literacy development: A World Health Organization Workplace Health Promotion approach to address tobacco use”**, 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: 13/02/2018

Dedication

I dedicate my work to my beloved parents, William and Marena Duxbury; my sister, Angeleque Duxbury; and my late brother Orrval Duxbury for their constant love and support through all my endeavours. I also dedicate my work to all the health promotion practitioners.

“Everyone has the potential to become an encourager. You don’t have to be rich. You don’t have to be a genius. You don’t have to have it all together. All you have to do is care about people and initiate.”

– John C. Maxwell

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Supervision

Principal supervisor: Prof Sunitha Srinivas

Co-supervisors: Dr Nicholas Townsend and Prof Noel James Pearce

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Research outputs

Academic journal articles:

- I. **Duxbury T**, Rath S, Maraj P, Bosman SJ, Srinivas S. Controlling the use of Tobacco for Sustainable Development: A Focus on India and South Africa. Indian Journal of Pharmacy Practice 2016. 9(2): 86-94. DOI:10.5530/ijopp.9.2.5
- II. 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. Health Care for Women International. <http://dx.doi.org/10.1080/07399332.2017.1332062>.
- III. **Theodore Duxbury**, Karen Bradshaw, Roman Tandlich, Sunitha Srinivas. Environmental health promotion at a National Science Festival: A service-learning based approach. Accepted by Applied Environmental Education & Communication
- IV. **Theodore Duxbury**, Paayal Maraj, Sunitha Srinivas. The development of a health information leaflet on 'Tobacco and our health': A culturally sensitive and context specific approach. Resubmitted to International Quarterly of Community Health Education (QCH-17-0027) on 14 June 2017 and in communication
- V. Mawande Golozana, **Theodore Duxbury**, Karen Bradshaw, Sunitha Srinivas. Potent Synergy of Service-Learning and Interdisciplinary Health Promotion for School Learners at a National Science Festival. Re-submitted to The Ethiopian Journal of Health Development (EJHD) on 8 February 2017 with Reviewers changes. In communication.
- VI. Sunitha C. Srinivas, Lucky T. Mtolo, **Theodore O. Duxbury**, Karen Bradshaw. Synergizing Technology and Health Promotion on Prevention of Tuberculosis. Submitted to Journal for New Generation Sciences on 11 December 2016. In communication.

Conference and symposium presentations

- I. **Duxbury TO**, Pearse NJ, Srinivas SC. Comprehensive Workplace Health Promotion Project and Tobacco use for low-semi health literates. Talloires Network Leaders Conference, Universidad Veracruzana, Xalapa, Veracruz, **Mexico**. 19-27 June 2017.
- II. **Duxbury TO**, Nagaraju K, Srinivas SC. Tobacco Use: RU Peer Educator workplace health promotion training programme. DUT/RU Community Engagement Conference. Durban University of Technology, KwaZulu-Natal. 31 May – 2 June 2017. (Paper presented at a conference-for publication)
- III. **Duxbury TO**, Srinivas SC. Podium Presentation on Tobacco Use: Developing and Implementing Health Information Leaflets. All Africa Congress on Pharmacology and Pharmacy. Misty Hills Country Hotel, Conference Centre and Spa, Muldersdrift, Gauteng. 5-8 October 2016.
- IV. **Duxbury T**, Mzizi T, Srinivas SC. Workplace health promotion on 'Tobacco and our Health':
Collaboratively developing and implementing a context-specific health information leaflet for low- to semi-literates. Public health Association of South Africa 2016 Conference. East London International Convention Centre, East London, South Africa. 19- 21 Sep 2016
- V. **Duxbury T**, Srinivas SC. Evaluating the existing tobacco health promotion policies and practises at Rhodes University. MEC Healthcare Summit and Excellence Awards, East London International Convention Centre, East London, South Africa. 12- 13 May 2016.
- VI. **Duxbury TO**, Srinivas SC. Podium presentation on Workplace Health Promotion: Tobacco Use. Rhodes University Community Engaged Learning Symposium, Grahamstown. 3-5 May 2016.

Webinars for Tallories network

- I. **Duxbury TO**, Srinivas SC. Youth Employability and Community-engaged Healthcare. Talloires Network Connects. 1 December 2016. The webinar was recorded by the Tufts University and is available at <http://tnconnects.net/program-blogs/invitation-to-webinar-on-youth-employability-and-community-engage>

- II. **Duxbury TO**, Marara P, Srinivas SC. Gender and Leadership in Health Promotion. Talloires Network Connects. 7 July 2016. The webinar was recorded by the Tufts University and is available at <http://tnconnects.net/program-blogs/webinar-video-gender-and-leadership-in-health-promotion>

List of acronyms

CBPR	Community-Based Participatory Research
CDC	Centres for Disease Control
ETS	Environmental tobacco smoke
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HCC	Health Care Centre
HIL	Health Information Leaflet
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
HP	Health Promotion
HRD	Human Resource Development
INR	International Normalized Ratio
IWS	Institutional Wellness Specialist
LMICs	Low- and middle-income countries
MDG	Millennium Development Goal
MPOWER	M: Monitoring tobacco use and prevention policies P: Protecting people from tobacco smoke O: Offering help to quit tobacco use W: Warning about dangers of tobacco E: Enforcing bans on tobacco advertising, promotion and sponsorship R: Raising tobacco taxes
NCDs	Non-Communicable Diseases
NDoH	National Department of Health
PAR	Participatory Action Research
PE	Peer Educators
PEMAT	Patient Education Material Assessment Tool
PSP	Pilot Study Participant
RU	Rhodes University
SA	South Africa
SANHANES	South African National Health and Nutrition Examination Survey
SAM	Suitability Assessment of Materials
SDG	Sustainable Development Goal
SMOG	Simplified Measure of Gobbledygook
SSI	Semi-Structured Interview
SIDS	Sudden Infant Death Syndrome
TAPS	Tobacco advertising, promotion and sponsorship
TB	Tuberculosis
TPE	Tobacco Peer Educators
UN	United Nations
UNDP	United Nations Development Program
WPRO	Western Pacific Region
WHO	World Health Organisation
WHO FCTC	World Health Organization Framework Convention for Tobacco Control

WHP

Workplace Health Promotion

CHAPTER 1: Introduction

1.1 Background and problem statement

Approximately 70% of all deaths worldwide can be attributed to non-communicable diseases (NCDs), with 30.7 million of these deaths occurring in low- and middle-income countries (LMICs) (WHO, 2012b, 2015c). NCDs resulting in 48% of these deaths occur before the age of 70, and these premature mortalities undermine social and economic development. NCDs also pose the greatest global threat to population health and tend to impact those more in developing countries during their most productive years, making them a significant contributor to poverty and a serious barrier to economic development. Women make up more than half of all NCD-related mortalities (UN Women, 2016).

The epidemic increase in NCDs such as diabetes, hypertension, cancers, and chronic respiratory diseases are exacerbated by four risk factors; tobacco use, unhealthy diets, lack of physical activity and the harmful use of alcohol. This multitude of complications potentiate other socio-economic effects such as greater health and financial burdens of individuals, families and organizational workplaces. Tobacco use is a major contributor to the devastating effects of NCDs on health and development. Each year approximately 6 million people die globally due to the use of tobacco, with 600 000 of these deaths caused by passive smoking (WHO, 2016d). The WHO predicts that, by 2030, tobacco will kill more than 8 million people every year, with four out of five deaths occurring in LMICs. When compared to privileged socio-economic groups, vulnerable and socially disadvantaged people get sicker and die sooner. This is especially so because they are at higher risk of being exposed to harmful products such as tobacco and have limited access to health services (World Health Organization, 2017). A study conducted in 2011 by the Harvard School of Public Health and the World Economic Forum demonstrated that over the period 2011-2015, the cumulative lost output in developing countries associated with the four major NCDs is projected to be more than US\$7 trillion. The annual loss of approximately US\$500 billion amounted to approximately 4 per cent of GDP for developing countries in 2010 (WHO, 2016e).

According to the South African National Health and Nutrition Examination Survey (SANHANES), 6.7% of the South African population use tobacco with 4.9% of daily users and 1.8% less than daily users with tobacco use contributing to 44 000 deaths annually

(SANHANES-1 & HSRC, 2013). A higher prevalence of smoking is found to be with the economically productive age group from 25-49 years - which constitutes 35% of South Africa's population – and which may negatively affect the future development of the country and the medically underserved communities. South Africa's already low growth rate of 0.2% is further challenged by increased demands on the dwindled resources of the public health sector (BER, 2016).

A major contributing factor to the tobacco epidemic shift from high-income countries to LMICs is the expansion of transnational tobacco companies, marketing and selling 70% of their cigarettes in Africa, Asia, Eastern Europe, and Latin America (WHO, 2015a). This is a great burden to the governments of such countries, which have to cover the health care costs resulting from the use of tobacco. Tobacco consumption contributes to poverty through income being used for buying tobacco products, the loss of productivity, increased incidences of disease, and death (WHO, 2015a; WHO Tobacco Free Initiative, 2004). In poor households, large amounts of money are spent on the use of tobacco, which takes away from the money that could be spent on essential needs, such as food, shelter, education, and health care. This could lead to other conditions, such as malnutrition, which is one of the leading causes of mortality in the poor populations of South Africa. This vicious cycle continuously escalates, with spiralling social, personal, and medical disadvantages (The Tobacco Atlas, 2015b). Increasing the taxes charged on tobacco products is one of the most effective ways to reduce tobacco consumption, and could consequently generate revenue for the country (WHO, 2015a). The rise of tobacco taxes has its benefits, but it also results in tobacco users resorting to low-cost brands, 'rolling' their own tobacco-containing products, and to illicit trade, which in turn could be even more detrimental to the health of individuals (WHO & World Economic Forum, 2011).

Tobacco use is indicated to have a major impact on the workplace, work productivity and absenteeism and vice versa (Halpern, Shikhar, Rentz, & Khan, 2001; Perdikaris, Kletsiou, Gymnopolou, & Matziou, 2010). Both the living and work environments, therefore, play an important role in contributing towards the NCD epidemic. The WHO has therefore identified health promotion to be an effective strategy to combat these public health threats (WHO, 2014b).

1.2 Rationale for the research

Unlike other middle-income countries, South African is facing the quadruple burden of disease. These diseases include: High maternal mortality, child mortality and other communicable diseases; high levels of violence and injuries; the epidemic rise in NCDs; and the HIV/AIDS epidemic and TB (Bradshaw et al., 2003). These public health issues are decidedly dependent on the knowledge, skills and motivation of human resources for health (HRH). The evolving burden of disease pose a constant challenge to developing countries like SA with a current growth rate of 0.2% and a weakening health workforce (Essack, 2012; Labonté et al., 2015). Although HIV prevention has been a global challenge, South Africa is leading globally in successfully managing the quality of health of HIV infections with the largest anti-retroviral (ARV) programme. These successful but expensive ARV programmes are difficult to manage sustainably when all the resources for ARVs are of domestic origin and could induce future sustainable financing challenges especially with the rise in NCDs (UNAIDS, 2016b, 2016a, 2016c).

The need for successful, cost effective public health interventions are needed that are culturally sensitive and contextually appropriate, that strengthen leadership, and that strive towards multi-sectoral action to address the major NCD risk factors, such as tobacco use (UN, 2011). According to studies done, more than 70 percent of the South African population only have marginal reading skills: 30% are functionally illiterate and 40% have limited skills (Carstens, Maes, & Gangla-Birir, 2006). It is reported that the adults with the lowest literacy rates are those with the highest rates of morbidity and mortality from NCDs. It is because of these reasons that the researchers decided to work with Rhodes University Peer Educators who belonged to the low- to semi-literate, lower-socio economic group. The current study therefore focused on developing and implementing health information materials and activities with the conceptual guidance of the *WHO Workplace Health Promotion Framework* (WHO, 2010b), collaboratively with the Rhodes University low-to semi-literate peer educators and support staff along with management key stakeholders.

1.3 Field of study

Pharmacists not only have the ability to provide medicine-related advice but can also play a role in identifying the factors that contribute to NCDs in social, cultural and behavioural contexts and implement health promotion activities accordingly (Higgins, 2012). Educating and empowering individuals to adopt healthy lifestyles is one of the core skills required of pharmacists in health promotion. Pharmacists can promote health by influencing health literacy development and empowering individuals to adopt healthy lifestyles for the progressive realisation of the Sustainable Development Goal 3. Pharmacists therefore have great potential to prevent and reduce the prevalence of NCDs through conducting health promotion initiatives within their communities (Crawford, 2005; Hassali, Shafie, Awaisu, Mohamed Ibrahim, & Ahmed, 2009; Offiong et al., 2011). The current study was conducted under the Pharmacy Practice Division of the Rhodes University Faculty of Pharmacy within the field of health promotion.

1.4 Aim and objectives

1.4.1 Aim:

To develop, implement and evaluate the effectiveness of a culturally-sensitive and contextually-appropriate collaborative workplace health promotion literacy programme on tobacco use, utilizing health information leaflets and Rhodes University peer educator support staff, guided by the World Health Organization Workplace Health Promotion Framework.

1.4.2 Objectives:

- I. To develop, implement and evaluate accessible, culturally sensitive and contextually appropriate health information leaflets on tobacco use.
- II. To formatively evaluate collaborative approaches to:
 - a) the application of the World Health Organization Workplace Health Promotion Framework,
 - b) the development of the health information leaflets, and
 - c) peer education, including an evaluation of the training of peer educators in informing them of health information related to tobacco use and to test their knowledge recall.

The procedural objectives of this project are divided into four phases:

1. Exploratory phase

- To assess the successes achieved by other countries and South Africa in their approach towards tobacco-based policies and practices;
- To assess tobacco-related health promotion policies and practices at Rhodes University;
- To establish facilitating and constraining factors related to tobacco use at Rhodes University.

2. Educational health promotion phase

- To design a health promotion educational intervention to address tobacco use related challenges, as raised by the key stakeholders and peer educators;
- To design and test the culturally sensitive and appropriate health information leaflets to be used in the educational intervention with the Rhodes University Peer Educators;
- To design a health promotion manual to be used for future health promotion interventions by the Rhodes University Peer Educators.

3. Implementation phase

- To conduct health promotion training workshops with volunteering Rhodes University Peer Educators for sustainable future implementation of health promotion on tobacco use for support staff.

4. Evaluation phase

- To evaluate the resultant tobacco health promotion programme by the Rhodes University Peer Educators.
- To evaluate Peer Educator recall on the tobacco related health information discussed during the training workshops

1.5 Research questions

In response to the above mentioned aims and objectives, the following research questions have been developed:

- I. What are the existing policies and practices in place at Rhodes University on workplace health promotion and tobacco use control?
- II. What are the constraining and facilitating factors to a workplace health promotion programme on tobacco use?
- III. How effectively could the World Health Organization Workplace Health Promotion Framework be used to conceptualize and conduct a workplace health promotion programme on tobacco use?
- IV. What are the support staff's current cultural beliefs, attitudes and practices that may influence the use of tobacco?
- V. How could the collaborative peer education approach to health promotion be used to facilitate a comprehensive workplace health promotion programme using health information leaflets on tobacco use?

1.6 Overview of the chapters

Having provided the background to the research problem, and set out the aims and objectives of the study, the structure of the rest of the thesis is as follows:

Chapter 2: This chapter will outline the health and developmental effects of non-communicable diseases and its risk factors with specific focus on tobacco use. Chapter 2 will also outline an analysis of the global and local attempts to curb this public health challenge. The literature review chapter will also introduce the relevant literature to health promotion, workplace health promotion, peer education and knowledge transfer and assessment.

Chapter 3: This chapter will describe the theories and model that guided the research design, and the research instruments and procedures that were utilized for data collection and data analysis. These factors will be presented in response to the research questions stated in Chapter 1. This chapter will also present the ethical considerations of the project, the sample selection criteria, validation methods utilized and an outline of the study design.

Chapter 4: This chapter will encompass the background and outline of the design, development and testing of the health information leaflets used in this study as well as the

key role players. Chapter 4 will also provide an outline of the implementation phase of the study which were performed through workplace health promotion workshops.

Chapter 5: This chapter will provide a comprehensive outline of the study outcomes from Phase 1 to Phase 5. It will present the outcomes related to the exploratory phase, health information leaflet conceptualization, development, implementation and the programme valuation.

Chapter 6: This chapter will discuss how the qualitative and quantitative results compare to and contrast with published research. This chapter will discuss workplace health promotion influencing factors, the development of HILs, health empowerment and social capital, and the use of the WHO WHP Framework to encourage engaged collaborative leadership development.

Chapter7: This chapter will outline the deductions made from the research outcomes as well as the study strengths, limitations, implications and recommendations for future research.

CHAPTER 2: Literature review

2.1 Introduction

This chapter will introduce non-communicable diseases, its risk factors with specific focus on tobacco use, the related health and developmental consequences, and an analysis of the global and local attempts to curb this public health challenge. The literature review chapter will also discuss the first objective of the exploratory phase of this study, relevant literature to health promotion, workplace health promotion, peer education and knowledge transfer and assessment. The initial sources of literature used to guide the literature review in this study were sources from the World Health Organization, South African Department of Health Reports and websites, Centers for Disease Control and Prevention, The Tobacco Institute of South Africa, South African National Health and Nutrition Examination Survey and the Human Science Research Council. References to build the literature review stemmed from there.

2.2 Non-communicable diseases and health inequalities

With an epidemic increase in NCDs, vulnerable populations such as those with limited health literacy in lower social-economic groups residing in LMICs are affected. NCDs also pose the greatest global public health threat and tend to impact individuals during their most productive years, making them a significant contributor to poverty and a serious barrier to economic development (United Nations, 2015). This is especially so for those populations on the negative end of the social gradient. Each individual has the right to the highest attainable standard of health (WHO, 2015b). As part of a comprehensive approach to health and human rights on both national and regional levels, the WHO has committed itself to strengthening the incorporation of human rights into healthcare systems and policies. This is being done through capacity building within the WHO and its member states, advocacy, and through advancing the right to health in international law and international developmental processes (PAHO WHO, 2017; Türmen, Troedsson, & Stahlhöfer, 2001; WHO, 2015b). LMICs, however, still encounter great challenges to this vital human right (Humanium, 2016). It is the vulnerable and marginalized populations of these countries that mostly experience the demoralising effects of NCDs, with major health and developmental consequences (BER, 2016; WHO, 2015b; World Economic Forum, 2016). The lack of income mobility, health literacy and opportunities experienced by major segments of society, especially in low- and middle-income countries, has significant implications on health and economic development

(International Monetary Fund, 2015). Such inequalities concentrate political and decision-making powers in the hands of an elite minority. Income and income distribution are therefore considered critical social determinants of health. Disadvantaged families are often unable to obtain even the most basic healthcare. A focus on improving the equity and social status of the most disadvantaged informs the agenda of the Sustainable Development Goals (SDGs), which build on the Millennium Development Goals (MDGs) and aim to be more structured and relevant across the globe (Results for Development Institute & World Bank, 2014). While SDGs 3 and 5 aims to achieve universal health and well-being, both recognise that this cannot be achieved until health inequalities are understood and realised.

Considering these health inequalities and their links to the epidemic rise in NCDs, the United Nations conducted a high-level meeting on NCDs in New York on 19 September 2011, and a follow-up meeting is scheduled for 2018. The high-level meeting adopted an unprecedented *Political Declaration*, detailing 38 interventions to address the urgency of NCDs and to scale up action with NCD prevention and control. These interventions are aimed to be implemented in a way that is cost-effective, that strengthens leadership, and strives towards multi-sectoral action to address the four major NCD risk factors (UN, 2011). These were the driving factors of the current workplace health promotion programme on tobacco use, control and prevention. The NCD Alliance attempted to draw international attention to the intersection between NCDs and health and developmental issues in the hope of stimulating policy dialogue on health issues in the run-up to the first UN High-Level Summit on NCDs in September 2011 (NCD Alliance, 2011). This strategy complemented similar initiatives, like the *WHO 2008-2013 Action Plan for the Prevention and Control of Non-Communicable Diseases*, and augmented plans such as the *2010 UN Global Strategy for Women's and Children's Health* – which recognises the significance of the impact of NCDs in the lives of individuals globally.

Reducing health inequalities is important because health is a fundamental human right and its progressive realization will eliminate the inequalities that arise from differences in health status (WHO, 2016a). Healthy populations live longer, are more productive, and can contribute to economic growth more effectively (WHO, 2015b). Unfortunately, lower socio-economic populations tend to have limited access to health information and healthcare services and thus experience the brunt of NCDs and its risk factors such as tobacco use (Peters et al., 2008).

2.3 Non-communicable diseases and tobacco use

The rise in tobacco consumption is a public health concern and the effects thereof can be seen in industrialized countries as well as in South Africa. Tobacco consumption is predicted to become the second most important risk factor (following hypertension) for premature death among the middle-aged female population between 2010 and 2025 (The tobacco Atlas, 2013; The Tobacco Atlas, 2015a). As in the case of alcohol misuse, men and women are affected differently by tobacco use – and women are more susceptible than men (Maine Center for Disease Control and Prevention, 2016). These effects range from primary and secondary infertility and delays in conceiving; dysmenorrhoea; reduced production of breastmilk; increased risk of obesity; and early menopause to increased risks of developing coronary heart disease, especially in young women (Dare, Mackay, & Pell, 2015; WHO, 2010a). It is essential to evaluate the effectiveness of the implementation of the MPOWER policy measures in the areas where tobacco use is on the rise, especially in LMICs, and to monitor systems which are currently classified as ‘weak’ according to the WHO. Regular anti-tobacco mass-media campaigns would assist greatly in the cessation and prevention of smoking through appropriate health messages, and ought to be a common practice. It was shown that only a small number of people comprehend the specific health risks of tobacco use (WHO, 2015e). This is indicative of the large gap in health-related knowledge amongst the global population. Focus should therefore not only be placed on disease treatment, but also on disease prevention, through supporting and strengthening public health promotion initiatives within the populations most affected and using a bottom-up approach propagated by The Alma Ata Declaration. Disease prevention aids the reduction of costs that individuals, employees, medical facilities, insurance companies, and governments incur on medical treatment, because of NCDs resulting from tobacco use.

2.4 Tobacco control and prevention policy analysis

A tobacco-free environment assists with producing a more safe, healthy and productive workforce. In addition to this, it is also essential to protect the health of non-tobacco users. A critical step towards achieving these goals could be to amend or create inclusive, relevant and rational tobacco control policies. Tobacco control policy analysis may allow for the identification and evaluation current tobacco-related policies to recognize policy related

gaps. Tobacco use prevalence is one of the indicators to the successful tobacco control policies.

2.4.1 Global tobacco use prevalence

Some factors that influence the prevalence of tobacco use include age, gender, culture, and economic characteristics. Smoking in men and women was most prevalent in high-income countries, in higher socio-economic groups, but it has shifted towards lower social-economic groups. Global statistics indicate that tobacco use is more prevalent amongst men than women, and that the age-standardized smoking prevalence is slowly decreasing across all continents. A high prevalence of smoking can be associated with a general-mean initial age of below 20 (WHO, 2015d). Although there is a gradual decline in tobacco users in some high-income and upper middle-income countries, consumption of tobacco-containing products is increasing globally.

2.4.2 Tobacco prevalence in South Africa

Tobacco use remains one of the leading causes of premature, preventable deaths in South Africa, with 44 000 deaths per year (Cancer Association of South Africa, 2015; Teare, Naicker, Albers, & Mathee, 2017; WHO, 2013b). The 28.9 billion rand tobacco market consists of 7.7 million South African tobacco users (The Tobacco Institute of Southern Africa, 2013). In South Africa, tobacco consumption (e.g. smoking) rates remain alarmingly high in certain sections of the population.

According to the Human Science Research Council smoking tobacco is the most common method of tobacco consumption amongst the population of South Africa (Human Science Research Council, 2012). In contrast, the use of other tobacco products is higher in rural, informal settings (83.2%), which is significantly higher than that in urban, formal settings (56.2%). It was also reported that current smokers in informal urban settings smoked 6.5 cigarettes per day, compared to the national average of 7.4 cigarettes per day. The report indicates that previous exposure to environmental tobacco smoke (ETS), also known as second-hand smoke, has an influence on future tobacco use. 17.7% of the population report that they are exposed to ETS on a daily basis in their homes. The contribution to ETS is significantly higher for males than for females, especially for Coloured males (the designated ethnicity for the mixed-race group of South Africa). This might be a contributing factor to males having a higher tobacco consumption rate than females. The fact that those from rural

formal settings reported a significantly lower rate (34.7%) of trying to quit their smoking behaviour, compared to those from urban formal (49.9%) and urban informal (56.9%) settings, is concerning. Rapid population growth can also exacerbate the consequences of tobacco use, especially in South Africa, with an estimated population increase to 46.6 million by 2030 (Institute for Security Studies, 2013).

2.4.3 Global tobacco advertising, promotion and sponsorship

There are only 29 countries (12% of the world's population) that have completely banned all forms of tobacco advertising, promotion and sponsorship (TAPS). These 29 countries consist of both developed and developing countries. Banning TAPS has proved to be one of the most effective methods to reduce tobacco consumption, with an average of 7% decrease within these countries. It is therefore essential to monitor all forms of TAPS (WHO FCTC, 2008). According to the WHO, some of these countries are: Albania, Brazil, Colombia, Ghana, Iran, Mauritius, Panama, and Vietnam. Half of the world's population have aired at least one strong anti-tobacco mass media campaign within the last two years (WHO, 2015). The countries that have banned displays of tobacco products at points of sale include Australia, Canada, Finland, Ireland, Nepal, New Zealand, Norway, Palau, and Panama, with Australia being the first to introduce plain packaging for tobacco products followed by the United Kingdom, Ireland and France to name a few (WHO, 2016f; WHO, FCTC, 2016). The tobacco use epidemic also jeopardises sustainable development.

2.4.4 Tobacco use and Sustainable Development Goals

A focus on improving the equity and social status of the most disadvantaged informs the agenda of the Sustainable Development Goals (SDGs), which build on the Millennium Development Goals (MDGs) and aim to be relevant across the globe (Results for Development Institute & World Bank, 2014). The WHO considers tobacco use a developmental threat and has therefore incorporated tobacco use control policies into the SDGs through the formulation of The Framework Convention for Tobacco Control policies as one of the strategies (WHO, 2017b; WHO South-East Asia Region, 2017). Tobacco use reduction therefore plays a major part in the global efforts to achieve the SDG target, specifically with relation to the reduction of premature deaths due to NCDs, which is directly related to SDG3. Tobacco control has also plays an important role achieving the other 17 SDGs (WHO Europe,

2016, 2018). The SDG3 targets related to NCDs and tobacco reduction health targets for 2030 are compared to the South African health targets in the table below (WHO, 2013b).

Table 1: The Sustainable Development Goals vs South African health targets related to tobacco use and NCDs

Sustainable Development Goal	South African health targets
Reduce the use of tobacco to 30% by 2030	Reduce the use of tobacco to 20% by 2020
Reduce by 1/3 premature mortality from NCDs through prevention and treatment and promotion by 2030	Reduce by at least 25% the relative premature mortality (under 60 years of age) from NCDs by 2020

Evidence based studies have proven that within South Africa smoking tobacco has caused an increase in NCDs (FCTC, 2015; Mayosi et al., 2009). Tobacco use can cause diseases such as lung diseases, cancer, cardiovascular diseases, diabetes, gum diseases, chronic respiratory diseases, certain eye disorders, issues with the immune system, rheumatoid arthritis, erectile dysfunction in males, and many more preventable life threatening diseases (CDC, 2011, 2015). Diabetes, coronary heart disease and strokes have cost South Africa an estimated USD 1.88 billion between the years 2006 and 2015, negatively affecting the country's growth rate even further (Hofman, 2014). Tobacco use leads to morbidity and mortality due to its detrimental effects to almost every organ in the body (CDC, 2016a). Tobacco use also exacerbates the effects of other diseases. South Africa's high burden of tuberculosis (TB) and human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) only exacerbates the effects of smoking. Tobacco Studies have shown that maternal tobacco smoking can cause a three-fold increased risk of Sudden Infant Death Syndrome (SIDS) (Athanasakis, Karavasiliadou, & Styliadis, 2011). Sleep-related obstructive apnoeic episodes, and decreased lung function, are also a concern. According to the WHO, 99% of maternal and neonatal mortality occur within the developing world. South Africa has high levels of maternal and child mortality, and these are inseparably linked with NCDs as well as their risk factors (South African Summit on the Prevention and Control of NCD's, 2011). Global child and maternal health monitoring reports have stated that the 74 Countdown Countries account for more than 90% of the global child and maternal deaths (Boerma et al., 2018; Hsu, Pitt, Greco, Berman, & Mills, 2012; WHO, 2012a; Zhang et al., 2017). Maternal health is vital in the growth and development of new-borns. New-borns whose mothers have died during childbirth, in fact, have a much greater chance of dying in their first year when compared to

those whose mothers survive (UNICEF, 2012). Smoking also affects SDG 3.6, “By 2020, halve the number of global deaths and injuries from road traffic accidents” (World Health Organization Regional Office for the Western Pacific, 2016). A study done on “*Smoking while driving and its consequences on road safety*” reports evidence that smoking tobacco generates a significant risk to road safety, higher than that of mobile phone use while driving (Mangiaracina & Palumbo, 2007). The WHO therefore proposed a set of policy measures to assist, especially the developing countries in curbing the tobacco epidemic.

2.4.5 WHO FCTC measures

This global initiative was introduced by the WHO in 2008 in an attempt to assist countries with the implementation of the WHO FCTC (Framework Convention for Tobacco Control) measures. This was introduced primarily to assist developing countries, which are the new targets for the tobacco market. MPOWER is an acronym representing the following six measures (WHO, 2008b):

M: Monitoring tobacco use and prevention policies

P: Protecting people from tobacco smoke

O: Offering help to quit tobacco use

W: Warning about dangers of tobacco

E: Enforcing bans on tobacco advertising, promotion and sponsorship

R: Raising tobacco taxes

2.2.5.1 Some of the MPOWER successes in the developing world:

- In 2009 Uruguay reported to have had a 25% decrease in tobacco prevalence over a three-year period.
- The first-ever African tobacco control capacity building hub was established in Uganda.
- This initiative has assisted Turkey to achieve the highest level of achievement in all six categories in 2012.
- By 2013 the MPOWER initiative has assisted 27 countries raise tobacco taxes, 19 countries (including Malaysia) achieve effective bans on TAPS and resulted in 20 countries being smoke free (WHO FCTC, 2013).
- Egypt succeeded in establishing smoke-free public places and mandated pictorial health warnings on tobacco product packs (WHO, 2008c).

Table below summarises the progress made the developing country, South Africa, based on the WHO FCTC, MPOWER policies.

Table 2: Summary of the progress made by South Africa towards MPOWER measures

Year	Report	MPOWER Measures	Outcomes			SOUTH AFRICA	
2015	WHO Report on the Global Tobacco Epidemic	Monitoring tobacco use and prevention policies	% Youth:	Current tobacco use		21.5	
				Current cigarette smoking		12.7	
				Current smokeless tobacco use		7.9	
			% Adult:	Current cigarette smoking		18.2	
				Daily cigarette smoking		16.2	
				Current smokeless tobacco use		6.5	
		Protecting people from tobacco smoke	Public places with smoke free legislation (2014)	Healthcare facilities, educational facilities, universities, government facilities, indoor offices and workplaces, restaurants, cafés, pubs and bars and public transport			NO
		Offering help to quit tobacco use	Treatment of tobacco dependence (2014)	Medical treatment			YES
				Toll-free telephone quit line/help line with a live person available to discuss cessation with callers in the country			NO
				Smoking cessation programmes available in:	hospitals, healthcare clinics or other primary care facilities, office of a health professional		NO
					the community		YES in most
		Warning about the dangers of tobacco	Health warnings on tobacco packages	Does the law mandate that health warnings appear on tobacco packages?			YES
			Mass media campaign	Anti-tobacco mass media campaigns between 1 July 2012 and 30 June 2014 (for a duration of at least three weeks)			NO
		Enforcing bans on TAPS	Bans on:	Direct tobacco advertising			YES in most
				Tobacco promotion and sponsorship			YES in most
Raising tobacco taxes	Tobacco taxation policy and prices (2014)	Price of lowest cost brand of cigarettes 20 pack (tax inclusive retail sales price)			INR 18.3		
		Total taxes on most sold brand cigarettes			48.80%		

2.2.5.2 South African specifics on WHO FCTC 2014

It is essential to evaluate the progress that South Africa has made thus far in addressing the tobacco epidemic (WHO, 2013). South Africa confirmed the adoption of the WHO FCTC principles on 19 April 2005, and has since made it its vision to strive for a tobacco-free society (WHO, 2012d; WHO FCTC, 2014). The progress that South Africa has made from then until 2014 is outlined in Table 3 below.

Table 3: South Africa's progress on the implementation of the WHO Framework Convention on Tobacco Control 2014

WHO FCTC measures	Yes	No	Full	Partial
Protection from tobacco smoke:				x
- Comprehensive protection of protection in educational facilities				
Supply of tobacco and tobacco products:	x			
- Licensing required				
- Sales of tobacco products to minors prohibited	x			
- Sale of tobacco products from vending machines prohibited		x		
- Sale of cigarettes individually or in small packets prohibited		x		
Tobacco growing:		x		
- Viable alternatives for tobacco growers promoted				
General obligations:		x		
- Comprehensive multi-sectorial national tobacco control strategy	x			
- Focal point for tobacco control		x		
- National coordinating mechanism for tobacco control		x		
Packaging and labelling of tobacco products:		x		
- Health warnings occupying 50% or more of package surface		x		
- Health warnings in the form of pictures or pictograms		x		
Education, communication, training and public awareness:	x			
- Implemented educational programmes targeted to adults				
- Implemented educational programmes targeted to children and youth	x			
Tobacco advertising, promotion and sponsorship:	x			
- Comprehensive ban on all tobacco advertising, promotion and sponsorship		x		
- Ban on display of tobacco products at points of sales		x		
- Ban covering tobacco sponsorship		x		
- Ban covering cross-border advertising originating from the country		x		

WHO FCTC measures	Yes	No	Full	Partial
Demand reduction measures concerning tobacco dependence and cessation:		x		
- Evidence-based comprehensive and integrated guidelines developed		x		
- Implemented media campaigns to promote tobacco cessation	x			
- Implemented telephone quit lines		x		
- Primary health care providing programmes on diagnosis and treatment	x			
- Nicotine replacement therapy available				

It is encouraging to see that South Africa is making progress with education, communication, training, and public awareness tobacco control initiatives, targeted at both children and adults. Reducing health inequities that result from tobacco use is important because health is a fundamental human right and its progressive realization will eliminate the inequalities that arise from differences in health status (WHO, 2016a). The critical step towards addressing the tobacco epidemic would be to understand tobacco use behaviour.

2.5 Tobacco user behaviour change reluctance

Tobacco users often resist behaviour change. To address this disinclination, it is important to investigate and comprehend why they are reluctant to change, and the processes needed to encourage a positive change in behaviour. According to the WHO factors that result in behaviour change reluctance may be :

- Behaviours that are unhealthy often seem beneficial in other ways
- Behaviour change may seem impossible
- People are not easily convinced that tobacco use is a problem for them
- Individuals might not be interested in change
- The individual is not aware of the negative health effects of tobacco consumption
- The individual is addicted to the substance, or it has become a habit.

2.5.1 Stages of change

According to Prochaska and DiClemente, there are six stages an individual goes through to encourage behavioural change. These are the: preconception, contemplation, preparation, action, maintenance, and relapse stages of behaviour change (WHO Europe, 2016).

I.Preconception:

In this stage the affected individual is not currently considering change. He/she may be in a state of complete ignorance. When attempting to encourage behavioural change in this stage, one has to aid the individual into developing a reason for change, validate the individual's experience, encourage further self-exploration, and explain and personalize the risk.

II.Contemplation:

In this stage, the individual is ambivalent about the change. To encourage change in this stage would require a similar approach to that of the preconception stage. The initial act would be to validate the individual's experience, and then to clarify the individual's perceptions of the pros and cons of the attempted behavioural change. The individual will then need to be encouraged to undergo further self-exploration, leaving the door open for moving into the preparation stage.

III.Preparation:

During this stage, some individuals experience a desire to and are attempting to change. To encourage behaviour change here, one has to praise the decision to change behaviour, prioritize the behaviour change opportunities, identify, and assist with the problem solving (overcoming predicted obstacles), encourage the initial small steps, and, lastly, encourage the identification of social support.

IV.Action:

This stage involves practising the new behaviour adoptions. To encourage action continuation, it is important to focus on restructuring cues and social supports, to sustain self-efficacy for dealing with obstacles, to combat the possible feelings of loss, and to restate the long-term benefits.

V.Maintenance:

The individual sustains a continued commitment to the new behaviour past a few months for at least a few years.

VI.Relapse:

Recommencement of old behaviours.

It is essential to understand the behaviour change cycle but for the purposes of this study, the researchers will only focus on raising tobacco related health awareness through the use of contextually appropriate health information materials and a comprehensive and collaborative peer education workplace health promotion programme. According to the empowerment models, in order to enable an individual to have influence over oneself, institutions, or society, the individual, in part, requires access to information and resources to make proper informed lifestyle decisions (Hagquist & Starrin, 1997). Health promotion is a way forward, using these behaviour change models, because going the treatment route to the epidemic rise NCDs is not sustainable in LMICs. It is important to shift towards the prevention of NCDs to empower individuals to make informed lifestyle choices through health promotion.

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2.6 Health promotion:

Health promotion is an interdisciplinary science that draws from biological, environmental, psychological, physical, and medical sciences to promote health and to prevent diseases, disability and premature death through education-driven, voluntary behaviour change activities (College of Public Health, 2015). Health promotion is key to the growth of empowered individuals, groups, and a community through the use of systemic strategies to improve health knowledge, attitudes, skills, and behaviour (WHO, 2014c). It is important to focus on disease prevention through health promotion, as this, in addition, reduces the cost that individuals, employees, families, communities, medical facilities, insurances companies,

and the government incur on medical treatment as a consequence of non-communicable diseases resulting from tobacco consumption.

According to the Health Systems Trust of South Africa, there are few training opportunities and slow development of health promotion in tertiary level education, resulting in a health promotion gap. One of the effective ways to promote health is also to use peer education and social marketing. There is evidence that social media can be an effective tool in NCD health promotion interventions. Some of the key principles under the five health promotion related Charter/Declaration/Models are summarised in Table 4 below:

Table 4: Health promotion related Charter/Declaration/Models comparison

Alma Ata Declaration	The Ottawa Charter	1997 Jakarta Declaration	SA Model of Health Promotion	WHO-AFRO's Strategy for Health Promotion in the African Region (2012)	Collaborative health literacy development: A World Health Organization Workplace Health Promotion approach to address tobacco use
Empowerment and respect – activities should be designed to increase the control that communities have over their own health	Develop personal skills Health promotion supports personal and social development through information, education for health and building life skills	Increase community capacity and empower the individual	—	Ownership of programmes by individuals and communities through their participation in all activities	Conduct health promotion through FGDs, SSI and design health promotion leaflets to educate and address the health-related knowledge gap within semi-low-literate population and assist the them to make informed lifestyle choices
Participation – communities should be involved as partners in the planning of health care	Strengthen community action	Promote community action	Community action and mobilisation	To facilitate multi-sectoral actions such as community participation, social dialogue, partnerships and innovative financing to promote and protect health across population groups	Engaging with the Rhodes University community and promoting group participation in health promotion (FGDs, SSIs) Forming a health promoters group

Alma Ata Declaration	The Ottawa Charter	1997 Jakarta Declaration	SA Model of Health Promotion	WHO-AFRO's Strategy for Health Promotion in the African Region (2012)	Collaborative health literacy development: A World Health Organization Workplace Health Promotion approach to address tobacco use
Inter-sectoral activity – Interdisciplinary work should be promoted where relevant	Strengthen community action	Expand the number of people working together for health	Concrete linkages with other sectors	To facilitate multi-sectoral actions such as community participation, social dialogue, partnerships and innovative financing to promote and protect health across population groups	Working together with the Rhodes University HC, human resource department, HIV/AIDS officer, Rhodes Union leaders, support staff, etc. to promote health more effectively

The adoption of the 1978 Alma Ata Declaration facilitated health promotion awareness through striving towards 'health for all'. It should however be recognised that efforts to commit to this declaration are yet to work more effectively. To re-evaluate and improve on seven decades of attempts to commit to the 'Health for All' motto, the WHO has called world leaders again, to *"live up to the pledges and commit to concrete steps to advance #HealthforAll"* on the World Health Day, 7th of April 2018. The Alma Ata Declaration has facilitated strategies for community participation which are considered useful when implementing health promotion activities. With health promotion activities gaining momentum in South Africa since 1990, the focus on synergizing mechanisms for demonstrating evidence of health promotion effectiveness with regard to health, social, economic and political impact are lacking and occupational standards for health promotion education and training are needed (Onya, 2007).

Awareness of the harmful effects of tobacco use could be facilitated through the application of health promotion initiatives. This could be done through sensitive and contextual strategies such as: culturally sensitive and appropriate health information materials in vulnerable populations and through contextual settings such as workplaces. The adoption of such strategies could ultimately lead to populations practicing more healthy behaviours to reduce

the epidemic effects of NCDs (Hofman, 2014; Robertson, Douglas, Ludbrook, Reid, & van Teijlingen, 2008). The impact tobacco use has on health and development requires immediate action and one of the measures that has shown to aid with this is health promotion.

The promotion of healthy behaviours related to tobacco use prevention has also proven to be useful in this study. A measure of the need for comprehensive health information by the participants is evident in the results section of this study. Within a diverse country such as South Africa, differences in education, social and cultural backgrounds are important concepts when disseminating health information. Failure to acknowledge these differences can create communication barriers. Promoting tobacco control activities within the workplace may also help to support WHO FCTC policies.

2.6.1 Workplace health promotion

A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety, and wellbeing of all workers, and to ensure the sustainability of that workplace (WHO, 2015f). The workplace directly influences the physical, economic, mental, and social well-being of the staff members, which in turn influences the health of their families, communities, and society (red and purple arrows in figure 1 on the next page). The lifestyles (the purple arrows in figure 1) of the staff members can in turn have an impact on their occupational health, work ability, families, and social well-being (WHO, 2015f). Non-communicable diseases (red arrow figure 1) occur mostly because of unhealthy lifestyle choices (influenced by the social determinants of health), and these lifestyle choices can be positively influenced through implementing the appropriate health promotion strategies. Health promotion (green arrow in figure 1) can therefore assist staff members to comprehend and avoid the negative effects of these lifestyle factors through the provision of the appropriate information, counselling, and educational measures to improve their work efficiency and effectiveness (WHO & World Economic Forum, 2011). The effects that NCDs have on socio-economic factors, and the influence that health promotion has on improving the burden of these effects, are depicted in figure 1 on the next page.

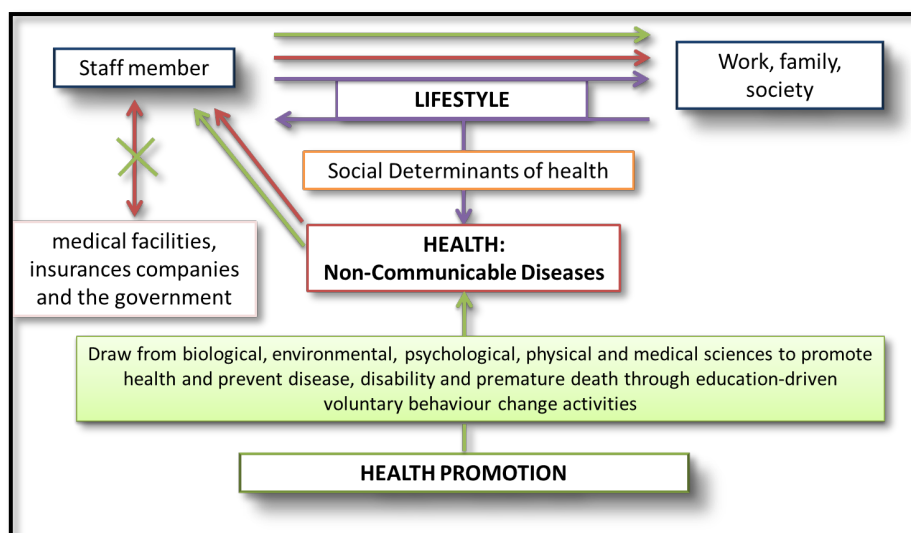


Figure 1: The impact of NCDs and health promotion on related factors

2.4.1.1 WHO Workplace Health Promotion Model

The WHO Regional Office for the Western Pacific developed a workplace health and safety model by 2010 which can be used for the continual improvement of workplace health promotion initiatives (WHO, 2010b). The model recommends the following steps when designing a workplace health promotion project after evaluating and acknowledging the workplace health influencers such as, personal health resource; environmental; psychosocial; physical health influencers, also called the continual improvement process model:

I. Mobilize:

This stage involves mobilizing the participants to invest in change. It is therefore important to perform a workplace health assessment, first, to obtain information about their needs, values, and priority issues, because every individual holds different values and beliefs or ethical frameworks, and therefore behaves uniquely. As a result, they are motivated to action by different things. To promote health effectively, it is important to observe and obtain such details.

II. Assemble:

As soon as the staff members and key stakeholders have been mobilized, a workplace health promotion team is assembled, together with the resources required to implement a specific change in the workplace. According to (Vodopivec & Hmelak, 2015), a team functions with increased efficiency, generates ideas, learns from the experience of other members, shares the workload, improves communication skills, and acts as a supportive network for each individual (Vodopivec & Hmelak, 2015).

III. Assess:

Assessment is performed using the following tools and measures:

- a) Baseline assessment, which will allow for the post intervention impact assessment.
- b) Workers' health in terms of occupational health data, which may provide information concerning the rates of sick leave and morbidities (general health status of the support staff).
- c) The desired future for the enterprise and workers can be assessed. This entails requesting ideas about how they would seek to improve their working environment and health, and what ways they believe their employers could assist them. It is important here to ensure that everyone is allowed to comment, to prevent inequalities based on gender, culture, ethnicity, etc.

IV. Prioritize

The next segment would be to prioritize the diverse factors that may arise during the assessments. These factors may be prioritised according to which factors are more directly essential to health, and based on the capabilities of the health promotion intervention.

V. Plan

After the baseline resources have been collected, the workplace health promotion intervention must be planned. This may focus on the priorities identified, or on the goals most readily attainable within the outlined timeframes. The overall intervention should have short-, intermediate-, or long-term goals.

VI. Do

In this step, the responsibilities for each planned action should be assigned to various team members, with follow-up meetings being scheduled.

VII. Evaluate

To evaluate the outcomes is important to identify which aspects of the intervention worked, and which aspects did not work, and why they may or may not have done so.

VIII. Improve

This step involves implementing changes based on the evaluation outcomes and building on the success that may have come from the initial intervention.

2.6.2 Culture sensitivity in health promotion

Culture is an essential part of health promotion contextualization. Thoraya Obaid promotes the contextualization of health promotion in the following way:

“In our development efforts in poor communities, we need to be able to work with people at their own level and to find common ground. We may not believe in what they do, we may not agree with them, but we need to have the compassion and the commitment to understand them and to support them as they translate universal principles into their own codes, messages and ways of doing things. Human rights are our frame of reference. And we use culturally sensitive approaches to promote human rights in ways that people can identify with and can internalize in the context of their own lives.”

Culture is an amalgamation of behaviours, values, attitudes, and beliefs that are shared by a group of people and passed along by communication and imitation from one generation to the next (Cleveland, Rojas-Méndez, Laroche, & Papadopoulos, 2016; Rogers, Hart, & Miike, 2002). Differences in culture and corresponding behavioural preferences can be challenging to both researchers in academia and managers in demographically diverse contexts. Failure to acknowledge these differences can create communication barriers. It is therefore essential to be objective instead of subjective (Li & Karakowsky, 2001). To be able to promote health effectively, it is important to understand the community's perception of their health and illness, behaviours, and habits that influence their health, and how culture interacts with environment, economics, and politics to affect health. The cultural beliefs of a specific community influence their healthcare practices and local concepts about illness (Armenakis & Kiefer, 2007).

Globally, the use of tobacco (growing, smoking, snuff, chewing, etc.) is still a significant part of cultural and spiritual practices. These tobacco practices are evidently still part of the South African isiXhosa culture today and have represented to be one of the key influences of tobacco use. The smoking of tobacco is perceived and practiced as a gateway to communicating with their ancestors, with the tobacco pipe being kept as a cultural marker. These practices take precedence and remain robust against the pressures of anti-tobacco campaigns, intensifying the conflict between cultural practices and western health belief models and systems. Understanding culture is therefore essential to controlling and preventing tobacco use and its associated diseases (Unger et al., 2003; Vaughn, Jacquez, & Bakar, 2009). The context of culture provides greater depth and meaning to conceptualizing

the health literacy needs of a specific population (Lie, Carter-Pokras, Braun, & Coleman, 2012; Literacy, Nielsen-Bohlman, Panzer, & Kindig, 2004).

2.7 Health literacy

Health literacy refers to the cognitive and social skills which determine the motivation and the ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health (WHO, 2016c).

Health literacy consists of three discrete layers: functional literacy; conceptual literacy; and health literacy as empowerment. Functional literacy consists of the skills that allow an individual to read, for example, consent forms, medicine labels, and to understand written and oral information given by pharmacists or other health professionals (Burgess & Hamilton, 2011). Conceptual literacy consists of those skills and competencies that individuals develop over their lifetimes to allow them to seek out, comprehend, evaluate, and use health information to make informed choices. Health literacy as empowerment involves strengthening active citizenship for health through understanding people's rights as patients, and their ability to navigate through the healthcare system, and acting individually or collectively to improve health through the political system through voting, advocacy or membership of social movements (WHO, 2009a).

In this section, health literacy in South Africa is first contextualised and then looks specifically at the context of low literacy. When dealing with low health literacy it's essential to first understand the influences and level of motivation that the participants have towards learning. Thereafter the process of health literacy development is explored. Health literacy can be viewed as a process of accessing, understanding and then being informed to act towards making healthy decisions. Blooms taxonomy supports understanding this process. Finally, consideration is given to the evaluation of health literacy knowledge transfer and training.

2.7.1 Health literacy in South Africa

According to Carstens et al, South Africa has a readability level of basic health educational materials just below 60 which correspond to an individual with grade 9. According to a study done, more than 70 percent of the South African population only have marginal reading skills: 30% are functionally illiterate and 40% have limited skills (Carstens et al., 2006). Marginal

literacy is defined as having a literacy level equivalent to that of an 8th grade student (Pfizer, Doak, & Doak, 2004). It is reported that the adults with the lowest literacy rates are those with the highest rates of morbidity and mortality from NCDs (Carstens et al., 2006). If people are unable to have access to health literature or effectively comprehend health literature, they are less able to live healthy lifestyles and their right to health is compromised (South African Human Rights Commission, 2000). It is therefore essential to understand the barriers and investigate health literacy development facilitators.

2.7.2 Learning influences and motivation to learn

The Basic Four-Level Model of Kirkpatrick (1959, 1995, & 1998) has become one of the industry standards across the human resources and training sphere. Kirkpatrick's Basic Four-Level Evaluation Model outlines four major factors which he used to measure training and learning outcomes of trainees; reaction (feelings), learning (knowledge capacity), behaviour (extent of learning transfer) and results (effect on the organization). In 1996, however, Holton critically analysed Kirkpatrick's model (Holton, 1996) and proposed a more comprehensive framework for diagnosing and understanding the influences of human resources development intervention outcomes. Holton subsequently modified the framework (Holton, 2005) based on later feedback and researchers then validated aspects of Holton's HRD Evaluation and Research Model (Figure 2) in different contexts (Zamani, Ataei, & Bates, 2016; Hutchins, Nimon, Bates, & Holton, 2013; Bates, Holton, & Hatala, 2012; Bates et al., 2012; Yamkovenko & Holton, 2010; Kauffeld, Bates, Holton, & Müller, 2008; Velada, Caetano, Bates, & Holton, 2009; Yamkovenko, Holton, & Bates, 2007). For the purposes of this study, the researchers will only use learning influences and motivation to improve work through learning, as indicated with the circle in *Figure 2*, to support the creation of healthy workplaces amongst adults. The revised Holton HRD Evaluation and Research Model (Figure 2 on the next page) acknowledges the link between behavioural influences and learning and training outcomes.

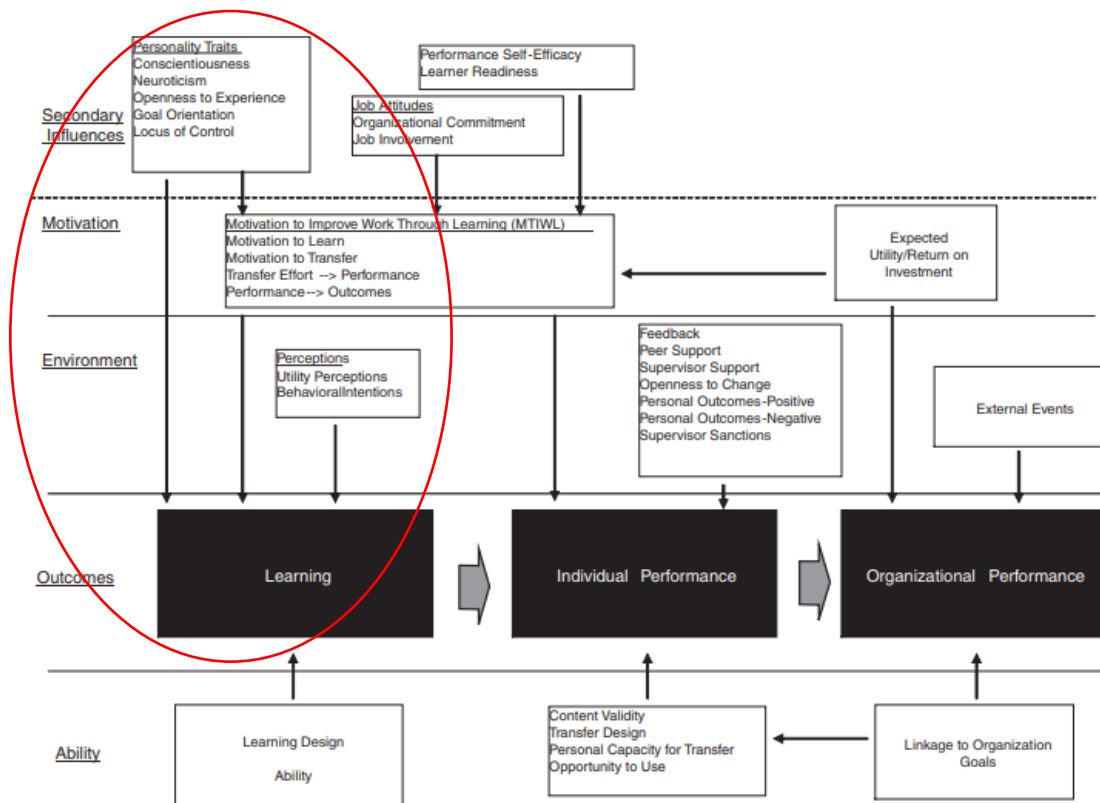


Figure 2: The revised Holton HRD Evaluation and Research Model. Adapted from (E. F. Holton III, 2005)

2.7.3 Developing health literacy for low-literates

For people to be informed and to make well-informed health decisions, it is crucial that they are willing and able to learn from the health information presented in a text. Their motivation, willingness and abilities are influenced by the perceived and actual difficulty of the text (Leroy, Helmreich, & Cowie, 2010). It is therefore essential to utilize methods to lower these barriers to improve the comprehension of health literacy.

2.7.3.1 Gaining access to and processing health information

Access to health information in the modern world is proving to become easier (Cline & Haynes, 2001; George Ettel, 2012). Modern means of accessing health information materials may comprise of internet sources, email, text messaging, audio recordings, videos and printed health information materials (Bodner et al., 2014; Boydell et al., 2014; de Jong, Ros, & Schrijvers, 2014; Frosch, Kaplan, & Felitti, 2003; Rees, Ford, & Sheard, 2003; Rodgers et al., 2005; Sciamanna et al., 2006; Steele, Dow, & Baxter, 2011). Technological advances and access to the Internet have proven to be a useful tool in obtaining access to health information, especially in developed counties (McMullan, 2006). These advances, however,

are not so prominent in developing countries and specifically in lower socio-economic groups and it is within these groups where the NCD burden is most prevalent (80%) when compared to the higher income countries. The dissemination of health information using HILs are therefore still relevant in a country such as South Africa with specific focus on the Eastern Cape (third largest population and second poorest province in South Africa) (Hamilton Mphidi, 2008; HST, 2006; South African Government, 2013; United Nations, 2015).

Processing information involves emotional, cognition, content and process knowledge, and requires the organizational skills to effectively sort through information (Strauser, 2013). Individuals process information visually, audibly, and through tactile/kinaesthetic processing. The current study focused on facilitating both audible and visual processing. In South Africa where two-thirds of the population cannot read basic health educational material, visual material can be an effective tool in health promotion for low-literates (Carstens et al., 2006). Using visuals as a communication tool for low-literates has proved to be effective in recalling previously communicated information (Houts et al., 1998) (Houts, Witmer, Egeth, Loscalzo, & Zabora, 2001) (Peter, Houts, Doak, Doak, & Loscalzo, 2006a).

To facilitate visual processing, Leroy, Helmreich and Cowie propose that the focus be placed on the overall sentence structure, noun phrase complexity, and function word density to evaluate text difficulty (Leroy et al., 2010). Perceived difficulty could be measured with the reader choosing the easiest and most difficult version of a sentence. Actual difficulty could be evaluated when the individual reads a larger segment of text, and multiple-choice questions are used to measure their comprehension and retention of information. It is suggested that health information material have explicit titles, be written in the active voice, have a readable font size, a well-designed layout with sub-headings, and must have content aimed at increasing knowledge and encouraging desirable reader behaviour. It is recommended that the health information material should have reader-friendly cover graphics to attract attention and to illustrate the purpose of the information material (Corcoran & Ahmad, 2015). It is crucial to understand that images assist the reader to better understand and recall messages (Kondilis et al., 2010). Nonverbal communication such as facial expressions, head nods, and other body language may also have an effect on the way in which visual cues are processed. Nonverbal communication techniques should therefore be carefully considered

when presenting audible health information to the listeners in person (Fontana, Cohen, & Wolvin, 2015).

The audible processing of health information could be enhanced by the addition of relatable and understandable visual cues (Möttönen, van de Ven, & Watkins, 2014; Paris, Kim, & Davis, 2017). For the health information recipient to process audible information it has to be innocuous and, in a language, appropriate to the listener. To facilitate this, a translator is often used in cross-cultural qualitative research, but it is done so with caution (Squires, 2009; Temple & Edwards, 2002; Xian, 2008). Using repetition techniques for reinforcing the important health information communicated and through personalizing the presentation content, listener engagement may be facilitated (Cialdini, Goldstein, & Martin, 2008; Covey, 2004). Visual and audible communication facilitators could ease content understanding by the health information recipient.

2.7.3.2 Understanding health information

A change in behaviour is facilitated by the comprehension of health information. The challenge comes in when most of the health information is too complex for the end-users. This is indicative of a gap between the reading skills of the end-users and the readability of the materials. In exacerbation to that, healthcare professionals provide verbal health information that is difficult to understand by the receiver due to the medical jargon used (Buckton, Lean, & Combet, 2015; A Colledge, Car, Donnelly, & Majeed, 2008; Rhee, Von Feldt, Schumacher, & Merkel, 2013). The above-mentioned processing cues may be used as a way to enhance health information understanding.

2.7.3.3 Translating knowledge to practice

For knowledge transfer to occur, the influencing factors set out in Holton's Framework and the participants' motivation to improve their workplace should be considered. The environment for knowledge transfer to occur needs to be motivated. Factors identified to be predictors to knowledge transfer may comprise of: participant cognitive, dispositional, motivational, and ability characteristics and programme design factors ideal for adult learning (Bates, Holton, & Carvalho, 2000; Chiaburu, Van Dam, & Hutchins, 2010; Keith & Frese, 2008; Martin, 2010; Naquin & Holton, 2002; Sitzmann, Ely, Brown, & Kristina Bauer, 2010).

2.7.3.4 Knowledge assessment

Knowledge involves the:

“recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting” (Lehrer, 2018; Zagzebski, 2017; Bloom, Englehart, Furst, Hill, & Krathwohl, 1956).

In 1965, Dr Benjamin Bloom leaded a research team that created a model known as The Bloom’s Taxonomy (a hierarchal model). This taxonomy was intended to facilitate higher levels of thinking through enabling knowledge and skills development in the lower levels. In 1956, Bloom and his team of researchers identified three domains of learning (or the learning process); Cognitive (knowledge); Affective (attitude); Psychomotor (skills) (Bloom et al., 1956). Bloom’s taxonomy was then further developed in 2001 by his research team (Anderson & Krathwohl, 2001) to produce a more usable version of the *Bloom’s Taxonomy*, the cognitive domain, as represented in the figure below (*Figure 3*):

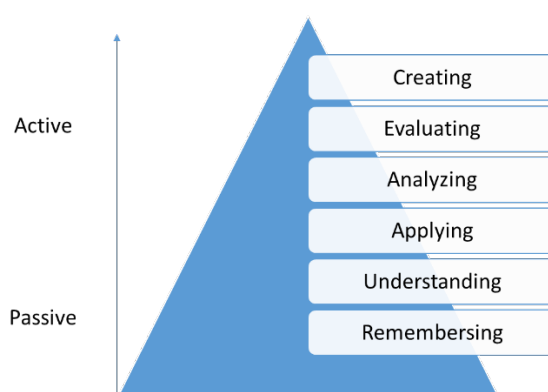


Figure 3: Revised Bloom's Cognitive Taxonomy (Adapted from Anderson & Krathwohl, 2001)

These levels could be considered as levels of difficulty and must be accomplished in order, from functions which are simpler (passive) to functions which are more complex (active). The cognitive taxonomy consists of the following functions:

- I. **Remembering:** Knowledge recall or to have the ability to retrieve previously learned information
- II. **Understanding:** Creating meaning from different types of stimulus or to have the ability to state a problem in one’s own words
- III. **Applying:** Refers to using the knowledge learned in various novel situations

- IV. **Analysing:** Having the ability to segregate concepts to determine their interrelation and how these concepts relate to the overall structure of purpose
- V. **Evaluating:** To make informed judgements on materials or concepts/ideas
- VI. **Creating:** Being able to build fit diverse concepts or elements together to form a coherent functional whole

These six functions are then evaluated in relation to the four levels of knowledge; factual, conceptual, procedural and metacognitive knowledge. Further research has identified alterations to the levels of knowledge assessment but it will not be considered for the purposes of this study (Clark & Chopeta, 2004).

2.8 Peer education in health promotion

Health promotion through peer education has been identified as one of the health promotion strategies to be used for tobacco use prevention and cessation (Campbell et al., 2008; Uthman et al., 2009; Golechha, 2016). This strategy could assist in synergizing the diverse educational, social and cultural backgrounds of the participants and work towards the effectiveness of a culturally sensitive and contextually appropriate health promotion project. Peer education typically involves the use of members of a given group to effect change among other members of the same group (Flanagan & Mahler, 1996; Shoemaker, 1998). In the early 1800s, peer education started off as a tutoring strategy used in the classroom (Krouse, Gerber, & Kauffman, 1981). With its effectiveness in influenza immunization programmes in 1957 – reported by (Helm, Knipmeyer, & Martin, 1972), and ultimately gaining popularity as an approach to successfully combatting HIV/AIDS in recent years (Medley, Kennedy, O'Reilly, & Sweat, 2009; Merakou & Kourea-Kremastinou, 2006), it has been applied in different contexts and different settings. Peer education has also been used as a strategy to effectively combat tobacco smoking behaviour from before 1992 (Abernathy & Bertrand, 1992; Armstrong, Shean, Dunn, & Dolin, 1990; Klepp, Halper, & Perry, 1986; Nash, 1987; Perry, Telch, Killen, Burke, & Maccoby, 1983; Telch, Miller, Killen, Cooke, & Maccoby, 1990; Wiist & Snider, 1991); however, these studies were mostly conducted with adolescent school learners and produced with very little formulation and reference to theory that supports peer education (Simoni, Franks, Lehavot, & Yard, 2011; Turner & Shepherd, 1999).

Two literature studies have been identified by the researchers that have attempted to formulate a set of justifications for adopting peer education and the theories that support peer education (Simoni et al., 2011; Turner & Shepherd, 1999):

- I. Peer education is identified to be more cost-effective than other methods
- II. Peers are a credible source of information
- III. Peer education facilitates empowerment
- IV. Peer education makes use of an already reputable means of sharing information and advice
- V. People identify with their peers and therefore this makes passing on of information more effective
- VI. Peers can act as possible role models
- VII. Peer education is also beneficial to those conducting it
- VIII. Reinforcement of information is effectively facilitated because peers are constantly in contact with one another.

Literature indicates that peer education can be supported by a multitude of theories; *Social Learning Theory, Social Inoculation Theory, Role Theory, Differential Association Theory, Subculture Theory and Communication Of Innovations Theory* (Turner & Shepherd, 1999).

2.8.1 Peer educators as leaders in health promotion

Peer education health promotion interventions are intended to be implemented in a way that is cost-effective, that strengthens leadership, and strives towards initiating multi-sectoral action that addresses the four major NCD risk factors (UN, 2011). Peer educators exercise leadership and influence when they educate their peers. Furthermore, their leadership is developed as they carry out this health education role with their peers. By virtue of their obligations as peer educators, they could be considered to be service leaders. Service leaders are considered to be individuals that are motivated to satisfy the needs of self, others, groups and communities (J. L. Chin, Trimble, & Garcia, 2017; Cooper, 2014; Van Wart, 2013).

It should also be noted that the adoption of collaborative processes in health promotion interventions are empowering and thereby have the potential to develop leadership. The Regional Strategy for Health Promotion of 2006 (WHO, 2006) proposed that priority be given to collaborative leadership interventions in health promotion that build capacity, specifically

for NCD prevention (WHO, 2014a). However, only a few studies have focused on how leadership qualities and strategies contribute to the positive effects of workplace health promotion (Cancelliere, Cassidy, Ammendolia, & Côté, 2011; Dellve, Skagert, & Vilhelmsson, 2007).

2.9 Conclusion

This chapter has noted that NCDs and their associated risk factors have detrimental health and developmental consequences. The development and amendment of tobacco related policies are essential to combat this public health concern. Culturally sensitive and contextually appropriate workplace health promotion strategies are proposed as a recommended approach to assist in addressing tobacco-related health literacy gaps. Peer education is also an effective technique used in health sciences as a means to promote health and influence peers. In the next chapter the research methodology is set out.

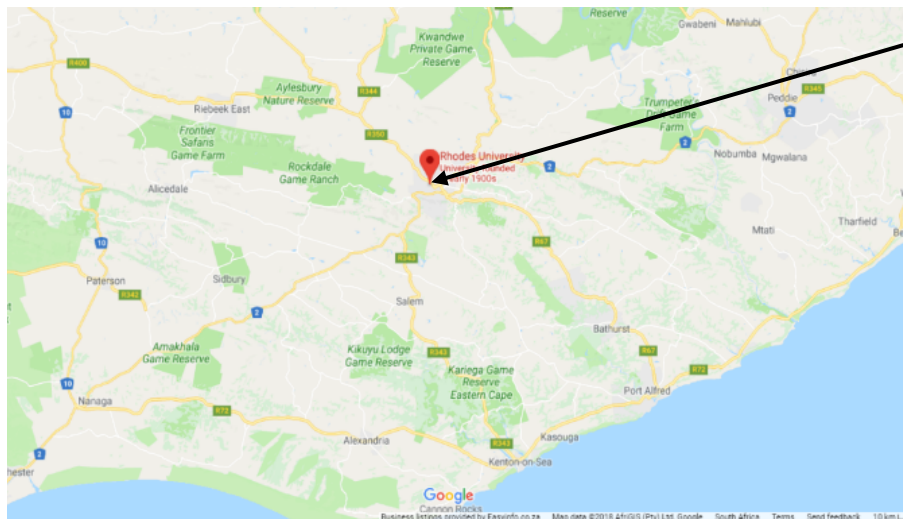
CHAPTER 3: Research methodology

3.1 Introduction

This chapter will describe the theories and model that guided the research design, the research instruments and procedures that were utilized for data collection and data analysis. These factors will be presented in response to the research questions stated in Chapter 1. This chapter will also present the ethical considerations of the project, the sample selection criteria and validation methods utilized.

3.2 Study setting and context

The study was conducted at Rhodes University located in a small urban town, Grahamstown, within the Eastern Cape Province, South Africa (Figure 4 below). Grahamstown consists predominantly of isiXhosa and Afrikaans first language speakers. The Eastern Cape Province is the second poorest province in South Africa, with an unemployment rate of 32.2% (Statistics South Africa, 2017). Rhodes University employs a large portion of the Grahamstown community. Rhodes University employs more than 1500 support staff, each graded into levels from one-to-five, with one being the lowest and five being the highest level.



Rhodes University,
Grahamstown,
Eastern Cape, South
Africa

Figure 4: Geographical location of Rhodes University, Grahamstown, Eastern Cape, South Africa. Image adapted from Google Maps

3.2.1 Study alignment with institutional goals

The five pillars promulgated within Rhodes University are teaching and learning, research, community engagement, professional involvement and leadership. This project synergized and supported all five of these pillars to ensure alignment with the goals of Rhodes University while building the capacity of the next generation of pharmacy postgraduate students in a

new era of health promotion at Rhodes University. The progression of the research study was momentarily influenced through the alignment of the institutional and study goals which allowed for improved study mobilization and sustainability.

3.3 Participatory action research

The study was conducted using a mixed-method qualitative research design guided by the World Health Organization Workplace Health Promotion Model and a participatory action research (PAR) approach. Action research was used as a way for researchers to apply their knowledge to a particular field of practice in health sciences. Kurt Lewin made use of the action research approach to apply his psychological ideas to a practical endeavour. It was soon realised that for action research to be effective it has to be performed through a democratic participatory lens (to influence behaviour and decisions through empowerment) and that the autocratic coercion approach (through the use of fear and control to gain power over people) would not be effective. This is particularly appropriate in a context such as South Africa that engendered the autocratic coercion approach to influencing behaviour during the apartheid era (Abel, 2015; ANC, 1997). Research therefore developed towards an approach called participatory action research (PAR) (Adelman, 1993; Adelman & Fletcher, 1982). The participatory action research theory suggests that in order for the residents of an affected community to stimulate change, the residents themselves must be involved in the research process from the beginning. PAR combines theory with practice (Baum, MacDougall, & Smith, 2006; Bergold & Thomas, 2012; Zuber-Skerritt & Perry, 2002). The PAR approach used within this study was the community-based participatory research approach (CBPR).

3.3.1 Community based participatory research

Community based participatory research (CBPR) allows healthcare professionals to discover new ways to study and to address complex health and social issues to encourage social change (Mairhofer, 2015; WHO, 2008a). Participating in a CBPR project, the community can take greater responsibility for their own development, and, most importantly, shift their assumptions about what they can achieve on their own, without assistance from the government (Cundill et al., 2014). In this way, participants become co-developers in the CBPR to benefit their community, based on their own culture and understanding.

3.3.1.1 Community based participatory research principles

There are two crucial CBPR principles identified by Israel and her colleagues (Israel, Schulz, Parker & Becker, 1998):

- Recognising a community as a unit of identity: In their view, the concept of community is an aspect of collective and individual identity and is central to community-based research. Units of identity can represent membership in a family, a friendship network, geographic neighbourhood, etc. and these are all socially structured dimensions of identity, created and recreated through social interactions.
- Build on strengths and resources within the community: Israel and her colleagues point out that, to perform a CBPR project, the researcher can seek to identify and build on the strengths, resources and relationships that exist within communities of identity. By identifying and executing these factors, researchers will be able to address their communal health concerns. CBPR may seek to support or expand social structures and social processes that contribute to the ability of community members to work together to improve health. CBPR achieves the balance between research and action (Mairhofer, 2015).

3.3.1.2 Community Based Participatory Research Planning

To initiate a CBPR project, a topic important to the community must be selected, together with the aim and action for social change to improve the community's health, and to consequently limit health disparities. The figure below represents a model presented by (Cundill et al., 2014) to be used in the early stages in initiating a CBPR project.

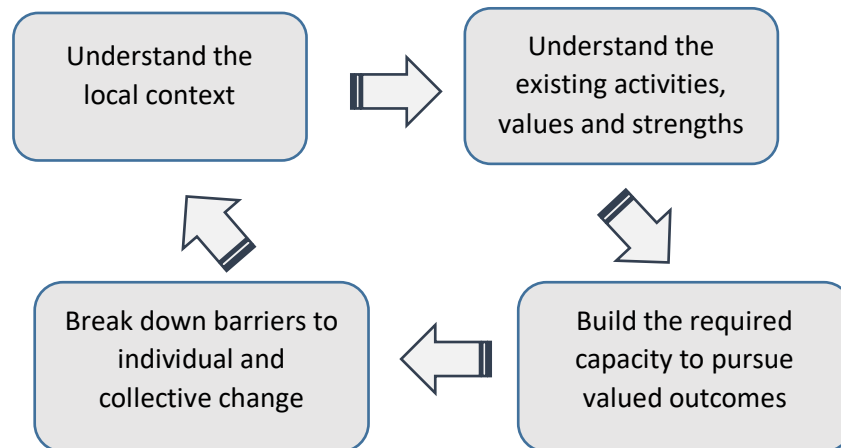


Figure 5: A model presented by Cundill et al. (2014) to be used in the early stages in initiating a CBPR project.

3.3.2 Mixed method research design

Mixed method research, which is considered to be the third methodological movement to quantitative and qualitative approaches, is a type of research design which involves both elements of qualitative and quantitative research approaches (N. K. Denzin & Lincoln, 2011; Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Teddlie, 2003). The utilization of a mixed method approach to research may assist in achieving a wider range of research outcomes and has been gaining popularity over the years (Norman & Huerta, 2006; Östlund, Kidd, Wengström, & Rowa-Dewar, 2011; Sandelowski, 2000; Strudsholm, Meadows, Vollman, Thurston, & Henderson, 2016; Weishaar, Amos, & Collin, 2015). In the current study, the mixed method research design guided the generation of rich data through; Focus Group Discussions (FGDs) (Appendix F) and Semi-Structured Interviews (SSI) (Appendix E) (used during exploratory phase of this study); and questionnaires, readability tests, Patient Education materials Assessment Tool (PEMAT) (S. J. Shoemaker et al., 2014) and Suitability Assessment of Materials (SAM) evaluation tools (Doak et al., 1996) (used during the development, implementation and evaluation phases of this study). The qualitative and quantitative aspects of this study are outlined in Table 6 of this thesis.

3.3.3 The interdisciplinary approach

The Community-Based Participatory Research approach recommends the collaboration between the academic researchers, the community based organization (Rhodes University and The Peer Educator Programme), and the community members (the Rhodes University grade 1-5 support staff members) (Hills, Mullett, & Carroll, 2007; Riffin et al., 2016). This collaboration provided the researchers with access to the community and promoted the sustainability of the project at both institutional and the broader external community levels.

This research was conducted by the following collaborating bodies:

I. Academic researchers

The academic researchers (the researcher and principal supervisor) who conducted the study are pharmacists by training and are based at the Rhodes University Faculty of Pharmacy in the Department of Pharmacy Practice. The study key stakeholders were the first level of contact. One of the co-supervisors were based at the British Heart Foundation Centre on Population Approaches for NCD Prevention, Nuffield Department of Population Health, University of Oxford and Rhodes University (recently moved to the University of Bath). The other co-supervisor is based at Rhodes University Business School, providing a rich balance of an interdisciplinary team.

II. The study key stakeholders

The key stakeholders mainly consisted of the support staff managers, institutional wellness specialist, the Human Resources Department, nurses from the Rhodes University Health Care Centre and support staff union leaders. The role and background of each key stakeholder in the study is briefly described below:

a) The Institutional Wellness Specialist (IWS)

The IWS was previously positioned as the HIV/AIDS Advocacy Officer for staff and students at the University. The IWS conceptualized and facilitated the Rhodes University Peer Educator Programme and was the logistical link between the researchers and the Peer Educators throughout the study.

b) The Human Resources Department (HRD)

The HRD was the logistical link between the researchers and the support staff managers at the University.

c) The Support Staff Managers (SSMs)

The support staff managers played a critical role in the needs assessment, participant meeting scheduling, and sustainability of the project. They also played a key role in influencing participant behaviour throughout the study. The SSMs governed the following divisions at the University: Food and Catering Services (preparation of meals for staff and students), Building and Maintenance (erect and repair infrastructure), Grounds and Gardens (maintenance of university grounds), Residential Operations (responsible for the proper functioning of university residential facilities), Central Cleaning (cleaning of university buildings), Engineering (maintain and repair of university vehicles and electrical appliances) and Campus Protection Unit.

d) The Rhodes University Health Care Centre (RU HCC)

The RU HCC was utilized as the central and key role in influencing participant behaviour in the study. The specialized services of the RU HCC nurses were promoted and used during focus group discussions and training sessions.

e) The RU Union Leaders

The union leaders were key in identifying the relation between the health of the university employees (support staff members) and its influence on the successful functioning of the workplace. They played a critical role during the needs assessment phase of the study.

All the key stakeholders formed part of the multi-disciplinary approach angle of the study and assisted with the planning, development and sustainability of the study.

3.3.4 Participants

The Peer Educators played the central collaborative role in the research study. The general support staff were involved during the execution of the health information pilot study and the initiation of the Workplace Health Promotion Training workshop. They are considered as the health information end-users. The study levels of influence are represented in the diagram (*Figure 6 and 7*) on the next page:

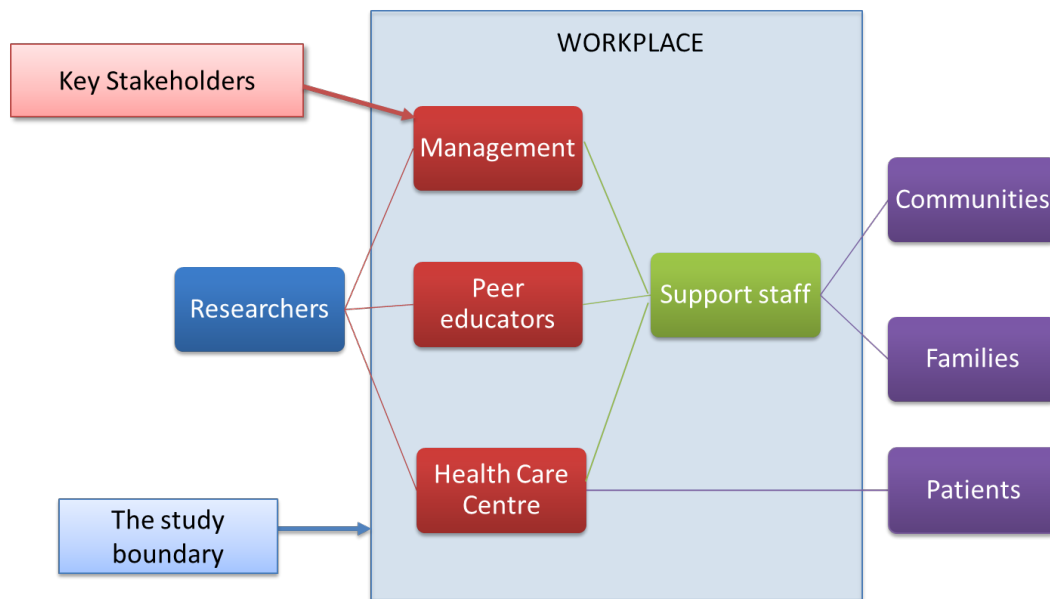


Figure 6: Representation of the levels of influence within the workplace health promotion programme

The study participants consisted of two groups illustrated below and will be explained in the sections that follow:

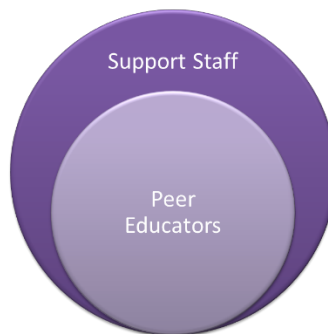


Figure 7: Study participant representation

3.3.4.1 The support staff:

The support staff participants were grade 1-5 non-academic staff members employed by the University. The support staff were representative of the following university divisions: Central Cleaning, Building and Maintenance, Food and Catering Services, Residential Operations, Grounds and Gardens, the Engineering division and the Campus Protection Unit. The general 1500 support staff members were considered as the health information end-users. The support staff end-user participants were involved in the pilot study phase and they were the individuals with which the Peer Educators interacted post the intervention phase of the research study.

3.3.4.2 The Peer Educators

The Peer Educator group is an already established group at Rhodes University consisting of 40 grade 1-5 support staff member sub-group as demonstrated in *Figure 7* above. The Peer Educators served as a resourceful platform to base the study on. The Peer Educators had similar demographical, cultural and socio-economic backgrounds. This study utilized this specific group of participants because they formed part of the institutionally recognised HIV/AIDS campaign and they are already working towards building trust amongst their fellow support staff peers. The peer educators previously performed the following tasks:

- Provided HIV/AIDS health related information
- Influence people's understanding of the epidemic
- Referred peers to help facilities
- Attended follow-up support, training and discussion meetings
- Raised awareness
- Distributed pamphlets
- Initiated further activities related to HIV/AIDS
- Liaise with other divisions for possible collaboration on activities

3.3.4.2.1 Peer Education and knowledge transfer

This study was done in participation with the Rhodes University Peer Educators supported by the peer education and knowledge transfer and evaluation theories presented under section 2.8-2.9 in this thesis. The theories identified in Section 2.8 of this thesis could be strategically used to perform contextual interventions such as, education-based peer interventions, social support based peer interventions, peer interventions targeting social norms, those that promote self-efficacy and advocacy-based interventions (Simoni et al., 2011). For the purposes of this study and the topic of tobacco use, these theories will not be considered. The main focus would be to transfer learning and training of adults within the workplace with the use of sensitive health information materials developed. The current study were supported by the following aspects of the Holton's HRD Model (Figure 2);

I. **Secondary influences:**

- a) Openness to experience: the curiosity and willingness to explore;

- b) Goal orientation (learning orientation): the tendency to pursue difficult learning challenges;
- c) Locus control (the internal locus): Is concerned with the trainees believing that they can improve their skills, change their abilities and motivation, through their own actions-by exerting effort in training.
- d) Job attitudes (organizational commitment): Improving work commitment (workers that have a more positive attitude towards organization would be more likely to engage in learning therefore improved performance. This could also contribute towards organizational benefits.

II. **Influences on organizational performance**: Which emphasizes the importance of the trainees to have the ability to align what they have learned in training to the strategic direction (goals) of their institution.

III. **Motivation to learn and to improve work through learning**

The revised Bloom's Taxonomy will guide the evaluation of Holton's learning outcomes and to support health literacy development in this study (Figure 2).

3.3.5 Method of sampling

The following criteria were used as the inclusion-exclusion criteria for the study participants:

The inclusion criteria were:

- Must be employed at the institution for at least one year
- Must fall into the support staff grade level 1-5
- Support staff managers of Grade 1-5 support staff
- Individuals involved with the health and well-being of grade 1-5 support staff

The exclusion criteria were:

- Support staff with a grade level above 5
- Staff member that have worked at the University for less than one year
- Students, academic staff and individuals from outside the Rhodes University community

A combination of two nonprobability sampling techniques (Barbour, 2001; Marshall, 1996; Social Research Methods, 2017) was identified and used in the study (mixed method implementation):

1. Convenience sampling
2. Purposive sampling (with specific focus on total population sampling).

In this study subjective sampling techniques took precedence over randomization techniques due to the type, nature and purpose of the study. Literature would argue that nonprobability sampling techniques are associated with severe limitations such as subjectivity and generalization, and it is considered judgemental, selective and biased. In this study, however, nonprobability sampling has shown to present with a wider range of sampling techniques that can be used separately through different phases of a research study. Nonprobability sampling was deemed suitable because the researchers had a small sample size with limited resources, time and workforce; it was more cost effective and, contrary to literature (Etikan, Musa, & Alkassim, 2015), was used to conduct generalizations within this study.

3.3.5.1 Convenience sampling

Due to the study type, nature and purpose (which was to investigate and improve workplace wellness) it seemed suitable to recruit participants from the workplace. All the participants recruited were employed at the same institution (with close geographical proximity) as the researcher and therefore demonstrated to be convenient, easily accessible and available. This sampling technique was used during the first phase of the research study to identify suitable participants.

3.3.5.2 Purposive sampling

As mentioned in Section 2.5.2 of this thesis, all the support staff peer educator participants recruited had similar demographical, cultural and socio-economic backgrounds. These characteristics were also shared between the general 1500 support staff members at the institution and therefore allowed for improved generalization within the context. The participants were all university support staff Peer Educators with substantial prior expertise in the field of health promotion. Because the study utilized the well-functioning institutionally recognised HIV/AIDS programme as a 'piggyback' strategy, the aim was, therefore, to expand on their baseline expertise, and utilize their relationship with their peers to construct a

comprehensive workplace health promotion initiative where they serve as useful sustainable agents to drive this initiative forward (Hudon et al., 2016).

3.4 Study Framework and Procedure Integration

The WHO Regional Office for the Western Pacific developed a workplace health and safety model in 1998 which can be used for the continual improvement of comprehensive workplace health promotion initiatives. The next section will elaborate on how the WHO workplace health promotion model was used to guide the methods in this study.

3.4.1 World Health Organization Workplace Health Promotion Model

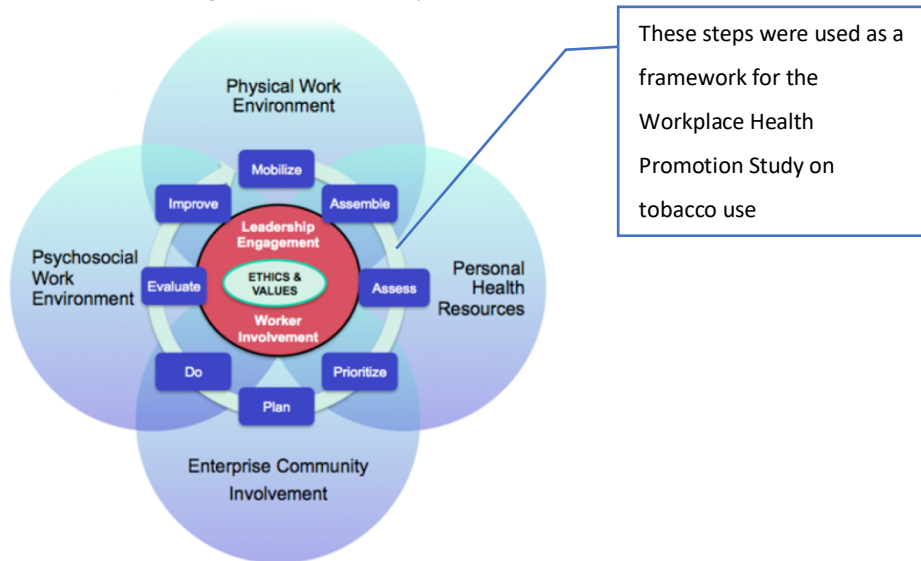


Figure 8: World Health Organization Workplace Health Promotion Model (WHO WHPM)

There are four main overlapping areas in which action towards a healthy workplace could be approached; Physical Work Environment (e.g. air, machines, chemicals, products etc. which would affect physical safety of workers), Personal health Resources (e.g. health services, information, resources), Enterprise Community involvement (e.g. activities, expertise, and other resources the enterprise engages in) and Psychosocial Work Environment (e.g. culture, beliefs, practices). To ensure that the health and well-being needs of all those concerned are met in a sustainable manner, the WHO recognized an organizational process of ‘ continual improvement’. The process of continual improvement involves the following steps; to mobilize, assemble, assess, prioritize, plan, do, evaluate and improve. This process of initiating and sustaining a workplace health promotion programme, must also involve synergizing leadership engagement, employee involvement and maintain the associated ethics and value standards.

The WHO WHPM was implemented in this study as follows:

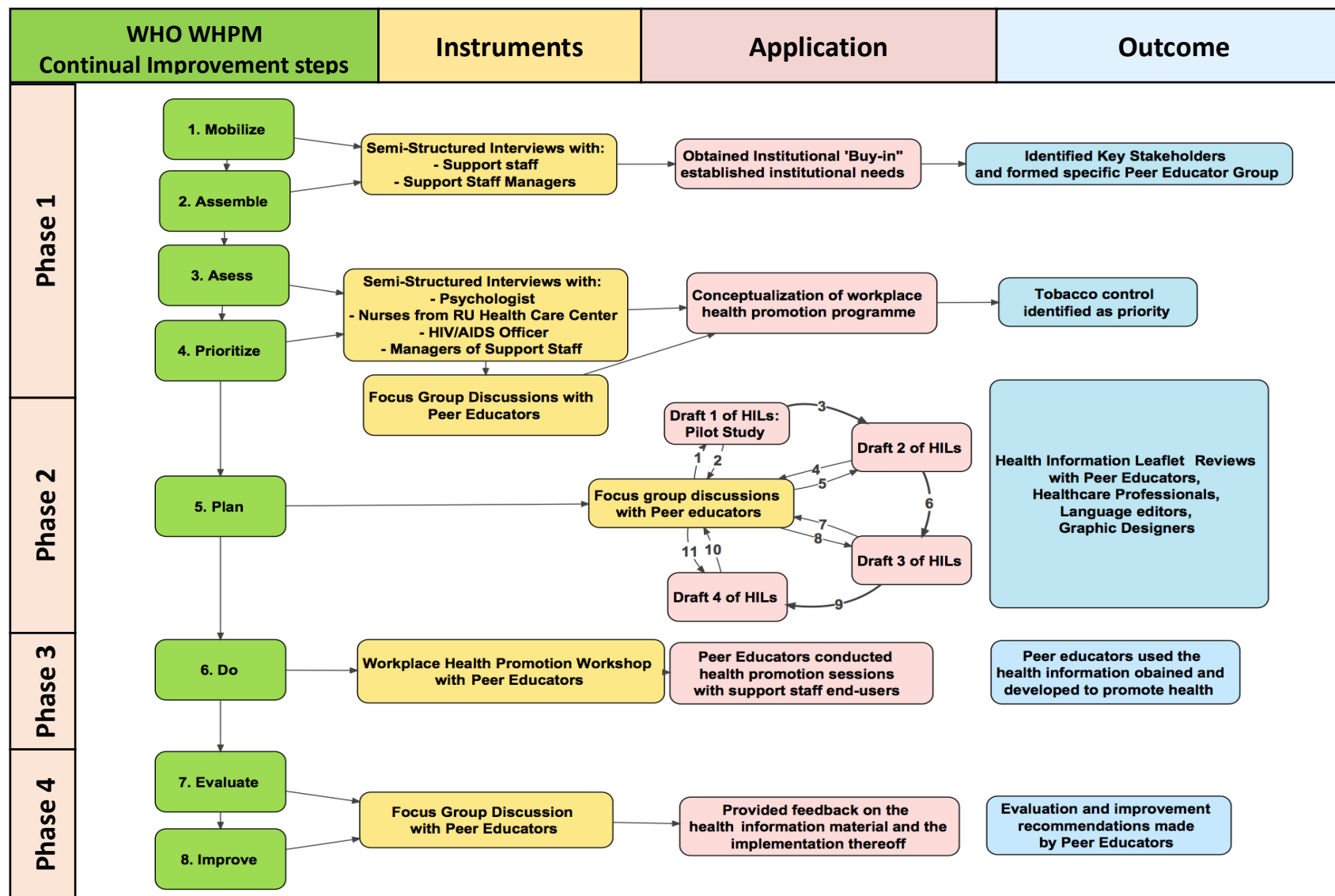


Figure 9: The implementation of the World Health Organizations Workplace Health Promotion Model within this study

i. Mobilize

This stage involved mobilizing and gaining commitment from the participants and key stakeholders to invest in change. This stage required a baseline assessment to have been conducted to obtain information about the needs, values, and priority issues of the institution. The following strategies (Table 5) were used to recruit, gain organizational commitment and stimulate mobilization from the participants, both key stakeholders and the health promotion peer educators. These strategies were also used in the following literature sources (Geldenhuys, Łaba, & Venter, 2014; NIMH, 2016; Zweben, Fucito, & O'Malley, 2009).

Table 5: Anticipated participant mobilization challenges

Anticipated mobilization challenges	Summary of interventions
High study demands	The study expectations formed part of the Peer Educators' daily scope of practice and therefore required no additional after hour activities. A study routine was created with two monthly feedback sessions during their lunchtime. The Peer Educators were assisted wherever they required assistance to alleviate their workload.
Increased ambivalence within population group affecting motivation	The Peer Educators were provided with as much information as possible about the topic and their responsibilities to reduce possible uncertainty and lack of motivation. To maintain the level of motivation required for the progression of the study, participants were constantly reminded of the important role they play at the University and the entire study was centred on their ideas and interests. Guest speakers were also invited to have educational talks with the peer educators.
Incentives	The Institutional Wellness Specialist coordinated these activities to ensure participation without disruption of the work schedule of the participants. During lunchtime, dining hall lunch was supplied to all participants so that data collection could be conducted effectively and efficiently. The Peer Educators also received workplace health promotion training, tailored health information leaflets. These tangible outcomes were also in response to the institutional demands and expectations.
Stimulating trust and reducing social	Stigma within the participants' group was reduced through creating a safe space, through conceptualizing a list of agreements within the group and

stigma towards tobacco users	through stimulating a supportive environment. Care was taken to ensure that the participant expectations were met. The participant confidentiality forms were thoroughly explained to the participants.
Literacy	A demographical assessment was conducted, and participants were allowed to express themselves in their home language. The health information was made user friendly.

a) Baseline assessment

Step 1:

A baseline assessment was conducted in 2015 to determine the relevance of a non-communicable disease (NCD) prevention and control programme for the support staff at Rhodes University. The baseline assessment was conducted by Ms. T. Chigumete and the principle supervisor of this study, "*Workplace Health Promotion: A Case of Rhodes University Support Staff*". The participants for the baseline assessment consisted of Rhodes University Peer Educators and grade one-to-five support staff who must have worked at Rhodes University for at least one year and University management. The baseline assessment was conducted using a mixed-method research approach (Kaur, 2016), through the use of focus group discussions and semi-structured interviews.

Step 2:

This step of the baseline assessment was conducted by Mr Duxbury and the principle supervisor of this study.

Step two of the baseline assessment was conducted through:

- a) Seven semi-structured interviews (SSIs) by the researchers with the University management at a time suitable to them.
- b) Two 60-minute voice recorded focus group discussions (FGDs) were conducted by the researcher with the 11 consenting Peer Educator Support Staff participants.

The aim of the second step was to evaluate their knowledge on workplace health promotion and tobacco related issues, obtain information on previous health promotion programmes held at the University and to investigate the need for a tobacco workplace health promotion programme for the support staff (which was one of the four main NCD risk factors identified by the participants during the first phase of the baseline assessment).

ii. Assemble

Based on the baseline assessment and the needs identified, the health promotion peer educators were requested to each choose one of the four topic groups. The health promotion peer educators had to make this decision based on their individual interests and in which group they would be most productive. As soon as the health promotion peer educators and key stakeholders had been mobilized, a tobacco workplace health promotion team was assembled, together with the resources required to implement a specific change in the workplace. According to Vodopivec and Hmelak 2015, a team functions with increased efficiency, generates ideas, learns from the experience of other members, shares the workload, improves communication skills, and acts as a supportive network for each individual (Vodopivec & Hmelak, 2015).

iii. Assess

Assessment was performed using the following tools and measures:

- a) Baseline knowledge assessment, which will allow for the post intervention impact assessment.
- b) Assessed the general health status of the support staff.
- c) The desired future prospects for the institution and workers were assessed. This entailed requesting ideas about how they would seek to improve their working environment and health, and what ways they believed their employers could assist them. It was important to ensure that everyone was allowed to comment, and to prevent inequalities based on gender, culture, ethnicity and other factors.

iv. Prioritize

The next segment was to prioritize the diverse factors that arose during the assessments. These factors were then prioritised according to which factors are more directly essential to health, and based on the capabilities of the health promotion intervention. Semi-structured interviews were conducted with key stakeholders and focus group discussions were conducted with the Peer Educators, to prioritize health needs and to establish a predominant health need (Figure 9).

v. Plan

After the baseline resources were collected, the workplace health promotion intervention was planned, integrating both support staff and institutional goals. This was focused on the priorities identified, and on the goals most readily attainable within the outlined timeframes.

The overall intervention had short-, intermediate-, or long-term goals. Health information Leaflets were developed collaboratively during the Phase 2 planning process of the study (Figure 9) through constant interaction with the participants.

vi. Do

In this step, the responsibilities for each planned action were assigned to various team members, with follow-up meetings being scheduled throughout the course of the study. A workplace health promotion workshop was conducted (Figure 9) to train the Peer Educators and to implement the health information leaflets developed.

vii. Evaluate

To evaluate the outcomes, it was important to identify which aspects of the intervention worked, and which aspects did not work, and why they may or may not have done so. A final focus group discussion was conducted with the Peer Educators to evaluate the intervention of the study and to suggest possible improvements (Figure 9).

viii. Improve

This step involved implementing changes based on the evaluation outcomes and building on the success that may have come from the initial intervention (Figure 9).

3.4.2 Data collection and organization

Data collection mainly occurred in the form of semi-structured interviews, focus group discussions guided by pilot-tested question guides, and quantitative analysis tools. The aim of such interviews was to identify participants' perceptions towards the topic. This approach to conducting interviews provides the researcher with one main advantage which is to allow for personal and direct interaction with the interviewees which also minimizes non-response rates (Fischer, 2006; Hogan, Dolan, & Donnelly, 2009).

3.4.2.1 Research instruments

Research instruments are often used by researchers as tools to measure, record and evaluate the data collected (Remler & van Ryzin, 2011). A variety of research instruments were utilized during the planning and evaluation of the research study (overview) can be seen in Table 6 below:

Table 6: Qualitative and quantitative research instruments used within this study

	Research Instruments	
	Qualitative	Quantitative
a) Phase 1	• Semi-Structured Interviews • Focus Group Discussions	Demographical Survey
b) Phase 2	• Focus Group Discussions	• Self-administered Questionnaire: - Acceptability and Comprehension Questionnaire • Suitability Assessment of Materials (SAM) • Patient Education Materials Assessment Tool (PEMAT) • Readability Tests
c) Phase 3	• Participatory Workshop	• Questionnaires: - Pre-intervention - Post-intervention - Post-post-intervention
d) Phase 4	• Focus Group Discussions	N/A
Other general instruments	Microsoft Office, NVIVO software, voice recorder and observational notes	N/A

a) Phase 1: The needs assessment, problem identification and confirmation

i. Semi-structured interviews

Seven semi-structured interviews (SSIs) were conducted by the researchers with the University management and key stakeholders at a time suitable to them. On average, each interview tool was about 20-45 minutes and consisted mainly of broad open-ended oral questioning to illicit a response. These voice recorded SSIs were conducted through the use of a pilot-tested question guide structured to evaluate their perceptions of workplace health promotion and tobacco related issues, obtain information on previous health promotion

programmes held at the University and to investigate the need for a tobacco workplace health promotion programme for the support staff.

ii. Focus group discussions

Two 60-minute voice recorded focus group discussions (FGDs) were conducted by the researcher with the 11 consenting peer educator support staff participants to evaluate their knowledge on workplace health promotion and tobacco related issues and obtain information on previous health promotion programmes held at the University. FGDs were also conducted to investigate the need for a tobacco workplace health promotion programme for the support staff and to work collaboratively on the intervention identified. FGD participants sat in a circular arrangement, as it was done in a similar study (Krueger, 2002). The FGDs were guided by a pilot tested question guide consisting mainly of 12 engagement, exploration and exit open-ended questions (K. E. Ryan, Gandha, Culbertson, & Carlson, 2014) to elicit responses, structured as follows:

- a) **Engagement questions:** "Please introduce yourself to the group and say why you chose to participate in the health promotion project?"
- b) **Exploration questions:** "Do you think such projects are important at the University and why? Would you consider tobacco use to be a concern at the University? If so, how could we work towards addressing the issue?"
- c) **Exit questions:** "Do you have any other questions, comments, or suggestions?"

Figure 10: Representation of interview style and question guide used during SSIs

All the participants were encouraged to comment and share in the discussions to generate a maximum number of different ideas and opinions from as many of the different participants as possible (Eliot & Associates, 2005). FGDs has been used as an effective tool in obtaining data prior to designing health initiatives and to provoke response from the participants (Shaping Policy for Development, 2009; Herber, Gies, Schwappach, Thürmann, & Wilm, 2014).

iii. Demographical survey

The aim of the survey was to determine and quantify the distribution of the demographical characteristics in the study group. The information collected is useful for study contextualization and for determining the degree of sample replication and generalization. It is also useful to determine possible relationships between the variables investigated (Gilovich, Keltner, & Nisbett, 2011).

b) Phase 2: The intervention

i. Focus group discussions

Five 60-minute voice recorded FGDs were conducted with the 11 Peer Educator Support Staff participants facilitated by the principal researcher. These FGDs were aimed to investigate the participant's beliefs, values and behaviour (Akpabio, Asuzu, Fajemilehin, & Bola, 2007; Motsomi, Makanjee, Basera, & Nyasulu, 2016) towards the problems identified in Phase 1. These FGDs were also utilized for planning and developing a culturally sensitive and contextually appropriate intervention. The FGDs were guided by a pilot tested question guide consisting mainly of 12 engagement, exploration and exit open-ended questions (Barnett, 2002; Center for Innovation in Research and Teaching, 2017; Kitzinger, 1994) to elicit responses.

ii. Self-administered questionnaire

The self-administered questionnaire (SAQ) was used as a cost-effective data collection instrument in this study. SAQs present the relevant questions for investigation as written material. This method of data collection provided an added advantage because the researchers had the opportunity to physically provide instructions and/or assist the grouped respondents when completing the questionnaire (Remler & van Ryzin, 2011). The SAQ investigated the acceptability and comprehension of the developed health information materials by the support staff end-users during the pilot study.

iii. Readability tests

Readability is a crucial measurement of reader comprehension and text difficulty evaluation and it guides the development of literacy sensitive information (Corcoran & Ahmad, 2015; Leroy et al., 2010). A readability formula functions through calculating the number of formal years of schooling needed to comprehend written material. The readability of a section of text is determined by four main properties: the numbers of words making up a sentence, the number of syllables a word consists of, the number of ideas emphasized in a sentence and lastly the continuity of the ideas in a text. A reader's reading level generally depends on the highest level of education attained. In order to access a larger

segment of the population, having a reading level at a lower grade will be an advantage (Bluman, Foley, & Chiodo, 2009; Polishchuk, Hashem, & Sabharwal, 2012) which enhances the readability and consequently the comprehension of the health information for low-literates.

The two main readability formulas used in this project are:

- **The Flesch-Kincaid formula:** This formula calculates text difficulty through obtaining the average length through dividing the number of words in the text into the total number of sentences. Secondly, the sum of all the vowels are obtained and divided into the number of words. These two values are then placed into the readability formula and the intended readability coefficient is determined. The coefficient obtained will fall in the range of zero to one hundred. The closer the coefficient is to 100, the more readable the text is considered (Izgi & Seker, 2012; Polishchuk et al., 2012).

- **The Simple Measure of Gobbledygook (SMOG) formula:** This formula calculates text difficulty through counting all the words containing three or more syllables within a word sample of 30 consecutive sentences (Badarudeen & Sabharwal, 2010). The answer will be in the form of a grade (Hedman, 2008). Harold McGraw developed a SMOG conversion chart which categorises the total polysyllabic word counts according to an approximate grade level starting from four to eighteen. Studies suggest that the SMOG formula is a more recommended formula to use in health literature due to its consistency of results, higher level of expected comprehension and the utilization of more recent validation criteria for determining reading grade level estimates (Wang, Miller, Schmitt, & Wen, 2013).

This method is also recommended by the National Cancer Institute.

- The Flesch Reading Ease Score, Gunning Fog, The Coleman-Liau Index, Automated Readability Index, and the Linsear Write Formula were the other readability formulas utilized as comparative instruments.

iv. Suitability Assessment of Materials (SAM)

The SAM evaluation tool is considered a useful tool in evaluating printed health materials as it looks at areas such as content, literacy demand, graphics, layout, learning stimulation and motivation, and cultural appropriateness (Doak, Doak, & Root, 1996). This assessment tool provides a more inclusive measure of the

variables that affect the reader's ability to understand the HIL and has shown to be useful in this study (Lewis, 2014). This method, however, should be used with caution especially when interpreting results from items with more subjective scoring criteria.

V. Patient Education Materials Assessment Tool (PEMAT)

The PEMAT is used to evaluate written patient health education material for comprehension and actionability (Agency for Healthcare Research and Quality, 2013; S. J. Shoemaker, Wolf, & Brach, 2014). Despite the advantages of this systematic evaluation tool, such as strong internal consistency and reliability, subjectivity should also be considered when utilizing this tool (Shoemaker, Wolf, & Brach, 2014).

c) Phase 3: Implementation

i. Participatory workshops

Participatory workshops, or training sessions, are intended to gather 40 participants to seek, extract and convey knowledge and solve problems. This is done through creating a collaborative and creative environment. Participatory workshops have proven to be useful, especially in the health sector where concepts are continuously evolving (Casapia, Joseph, & Gyorkos, 2007; Wells, 2015).

ii. Intervention analysis questionnaires

A pre-, post- and post-post-intervention of written SAQs were developed and utilized to ascertain the knowledge and understanding of the participants before and after an intervention. It consists of the exact same questions which allow for a direct comparison of the performance in each of the questions stated (Davis, 2002; Pem, Bhagwant, & Jeewon, 2016). The SAQs consists of both open-ended, close-ended and multiple-choice questions.

d) Phase 4: Evaluation

i. Focus group discussion

One 60-minute voice recorded FGD was conducted with the 17 Peer Educator participants facilitated by the principal researcher. These FGDs were aimed to evaluate the health information materials produced in the participatory workshop.

Other research instruments used

Data from SSIs, FGDs and participatory workshops was collected through the use of the Olympus WS-802® voice recorder and transcribed into Microsoft Office® Word documents. The data corpus was inserted into the Nvivo® data analysis software programme. A manual thematic analysis was also conducted. Researcher observational notes were also kept and stored.

3.4.2.2 Data collection procedure

Data collection occurred during the Phases depicted within Figure 11, of this study, below:

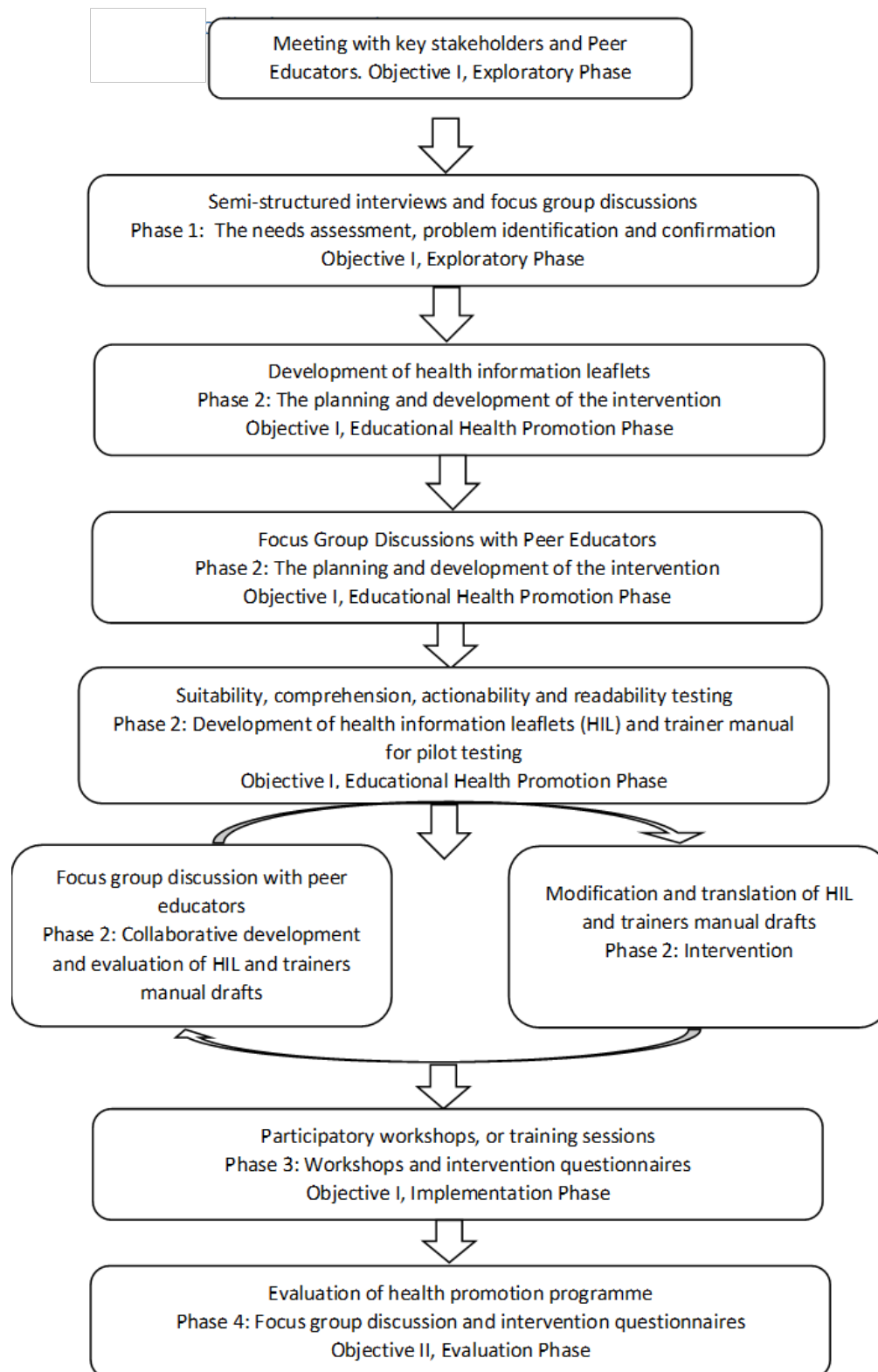


Figure 11: An overview of the data collection procedure used within this study

3.5 Ensuring reliability, validity, trustworthiness, objectivity and scientific rigour

(Guba, 1981) identified four trustworthiness factors which each researcher should address, irrespective of their research paradigm: truth value concern, applicability concern, consistency concern and neutrality concerns (Anney, 2014; Cohen & Waite-Stupiansky, 2011; Gadd, Karstedt, & Messner, 2011). In 1989, Wallendorf and Belk, contested Guba (1981) and suggested an additional concern be considered when conducting research and that is integrity concerns (Wallendorf & Belk, 1989). (Guba & Lincoln, 1982) and Wallendorf and Belk (1989) proposed that the following criteria can be used when assessing the scientific rigour of qualitative inquiry: credibility, transferability, dependability, confirmability and integrity. The above-mentioned criteria are suitable and useful in the qualitative analysis of this study.

3.5.1 Credibility

Credibility is the level of confidence that can be placed in the truth of the research findings (Holloway & Wheeler, 2002; Macnee, 2004). Credibility was enhanced through adopting the following strategies:

3.5.1.1 Triangulation

(Onwuegbuzie & Leech 2005), describes triangulation as involving the use of multiple and different methods, investigators, sources, and theories to obtain corroborating evidence to facilitate data comprehension and validation (Onwuegbuzie & Leech, 2005). It is the use of multiple data collection techniques and qualitative research tools to develop a comprehensive understanding of the area being studied (Denzin & Lincoln, 2011). Triangulation can also be utilized to minimize biases, such as measurement, sampling and procedural bias (Denzin, 1987). Denzin 1978 also identified four major types of triangulation. This study utilized data method triangulation. The researcher used different research instruments such as semi-structured interviews, focus group discussions, questionnaires, workshops, observational notes and document analysis to enhance the quality of the data from the different sources.

- i. **Document analysis** (Bowen, 2009) was used as a research method to assess and investigate policies and initiatives relating to workplace health promotion and tobacco control and prevention strategies.

- ii. **Semi-structured interviews** were utilized to explore the institutional managerial perspectives on issues relating to past Workplace Health Promotion initiative constraints and successes, and tobacco control and prevention strategies and policies.
- iii. **Focus group discussions** were conducted with the Peer Educator participants to explore their beliefs, attitudes and behaviour towards tobacco use and to investigate the cultural influences. It was also conducted to investigate the facilitating and constraining factors to conducting a Workplace Health Promotion initiative.
- iv. **Questionnaires** were utilized to obtain programme feedback to evaluate participant progress and as a data collection tool during the pilot study.
- v. **Workshops** were used as an educational, co-learning intervention tool. These workshops re-enforced the health information contained in the health information materials and provided the participants with practical ways of implementing Workplace Health Promotion activities.
- vi. **Observational notes** allowed the researchers to identify any non-verbal cues during researcher-participant interactions, and pick-up on participant interest and involvement in the programme.

3.5.1.2 Prolonged time of engagements in the field

Anney (2014) emphasized the idea that for the inquirer or researcher to understand the context of the study and to minimize the distortions of information collected, the researcher must immerse him/herself into the world of the participants. Trust between the researcher and the study participants is also one of the vital factors that gets improved when the researcher spends an extended amount of time in the field (Onwuegbuzie & Leech, 2007). Extended time in the field also equips the researcher with a deeper understanding of the participants' local construction and cultural context (Erlandson, Harris, Skipper, & Allen, 1993; Lincoln & Guba, 1985). This technique should be accompanied by approximately eight months in the field and the evaluation should be done after six-eight months of the intervention (Anney, 2014).

This triangulation technique was applied to the study through regular dedicated meetings with the participants. These meetings consisted of a 'meet and greet' where all the participants and researchers had the chance to get to know each other, FGDs, workshops and regular formal and informal interaction on the Rhodes University Campus throughout the course of the study.

3.5.1.3 Member Checking

Member checking is intended to enhance the verification process of qualitative data collection which in turn improves the validity of the study (Guba, 1981; Harper & Cole, 2012) (Harper, Cole, 2012; Guba, 1981). Member checking is performed through continuously testing data and interpretations as they are derived from the participants and is vital to ensure credibility of the data collected (Lincoln & Guba, 1985; Onwuegbuzie and Leech, 2007). The purpose of member checking is to eliminate or reduce the potential biases and obliteration of the researcher during the analysis of the data collected.

Member checking was conducted at the end of each SSI and FGD and re-confirmed (as an introduction) during the subsequent FGDs. The participants were requested to confirm the summary of the data collected during the discussions to ensure that the interpretations thereof were correct and true. If the interpretations were proven to be incorrect and untrue, the participants were requested to clarify and comment on any misunderstandings.

3.5.1.4 Peer Debriefing

Peer debriefing is intended to provide researchers with the opportunity to test their growing insights and to expose themselves to searching questions (Guba, 1981). Literature indicates that peer (Cohen & Waite-Stupiansky, 2011; Tobin & Begley, 2004) should be utilized as an opportunity to:

- Uncover granted biases, perspectives and assumptions that the researcher might be exercising
- Test and defend the research findings and procedures and to investigate whether the findings and procedures are reasonable and plausible.

The researcher regularly consulted with research peers, had regular meetings with his supervisor, and presented the research findings at conferences to obtain constructive feedback on the research findings and methodology.

3.5.1.5 Transferability

Transferability refers to the degree to which the results of the qualitative research study could be applied to other contexts or settings with other respondents (Maxwell, 2002). Transferability is the interpretive equivalent of generalizability (Bitsch, 2005; Tobin & Begley, 2004). Lincoln and Guba (1985) highlighted that generalizability is not a goal of qualitative research but the degree of applicability of the study is. Transferability is ensured through the provision of a 'thick description' and 'purposeful sampling' of the research context, methodology and process. Transferability may only be confirmed by the reader and not the researcher.

3.5.1.6 Dependability

Dependability refers to the stability of findings over time (Bitsch, 2005). Dependability involves the evaluation of the quality of the integrated processes of data collection, data analysis, the generation of theory, and the participants' recommendations of the study (Cohen & Waite-Stupiansky, 2011; Tobin & Begley, 2004). Dependability was applied to this study through using the following strategies: an audit trail, code-recode strategy, triangulation and peer examination (Chilisa & Preece, 2005; Krefting, 1991). Audit trail and the code-recode strategy will be discussed below as triangulation and peer examination have been discussed above.

i. Audit trail

An audit trail allows the researcher to undergo an examination of the inquiry process and product and as a validation tool (Anney, 2014; Bowen, 2009). The rich and elaborate research data (Seale, 1999) had to be traceable and the study had to be well documented (Shenton, 2004; Tobin & Begley, 2004). The following strategies were implemented to align with the requirements of an audit trail:

- a) All the raw data collected and analysed (SSI, FGD and workshop voice recordings; transcriptions; field notes; consent and confidentiality forms; pictures and videos; and summaries) were all archived.
- b) The minutes from each meeting were filed and archived.
- c) The study setting and context have been documented.
- d) A record of the study duration was reported.
- e) Number and demographics of the participants were reported.
- f) All documents used are fully cited in the References section.

ii. Code-Recode strategy

The code-recode strategy involved coding the data collected twice with at least a one-to-two-week gestation period in between each coding. This strategy is intended to assist the researcher with a deeper understanding of the patterns of the data (Cohen et al., 2011). The coded data were also evaluated by the principle supervisor.

The above mentioned strategies were used to ensure the reliability, validity, trustworthiness, objectivity and scientific rigour of the current study.

3.6 Ethical considerations

The following factors and procedures were followed when making ethical considerations:

3.6.1 Ethical approval

When conducting research that involves human beings - their health, living conditions, rights and well-being - ethical issues become important. Ethical approval from ethical bodies to conduct research on or with human beings is, therefore, required (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014; WHO, 2016b). In order to commence with the study, the research proposal had to be presented and defended in front of, and approved by the Higher Degree Advisory Committee of the Rhodes University Faculty of Pharmacy (Appendix A). Ethical approval was granted by the Faculty of Pharmacy Ethics Committee, Rhodes University. The 2016 Workplace Health Promotion on Tobacco Use project was granted ethical approval (PHARM 2016-04) by the Rhodes University Faculty of Pharmacy Ethics Committee on 05/02/2016 (Appendix B). These procedures had to be followed to assess and determine the applicability and feasibility of the research from an academic perspective.

The following ethical principles (Fouka & Marianna, 2011) were considered throughout the study

- **Respect for persons:** The participants were provided with informed consent forms and were not coerced into participating in the research study (Appendix C).
- **Beneficence:** The participants were not harmed and the benefits from participating in the research were communicated to the participants.
- **Justice:** All the participants were treated with equity and fairness during sample recruitment and study progression.
- **Non-maleficence:** Non-infliction of harm was ensured through constantly seeking oral consent throughout the progression of the study. Participants were also encouraged to express themselves (Sefton-Green, Thomson, Jones, & Bresler, 2011) in a way that is most comfortable to them.

3.6.2 Confidentiality

It is often difficult to predict or control information that might emerge especially in a qualitative research study. Protecting confidentiality therefore becomes critical (Remler & van Ryzin, 2011). During sample recruitment, the participants were presented with a participant invitation letter and confidentiality form (Appendix C & D). These forms were read, explained and presented to the eligible participants. The form outlined the following headings: Title of the project; purpose of the project; potential risks or discomforts; potential benefits; compensation for participation; participation and withdrawal; and participant rights. Confidentiality and anonymity were ensured by assigning unique participant code numbers.

3.6.3 Informed consent

Informed consent is considered a basic principle in research ethics (Gupta, 2013; Remler & van Ryzin, 2011). Informed consent is obtained within the opening minute or two of the interview and an explanation of the methods that are going to be used in the study is provided. The participants were then presented with a written informed consent form before the study commenced (Appendix D).

3.7 Conclusion

In this chapter the design of the research has been presented, along with a description of the research procedure that was followed. In the next two chapters, the results of the research are presented. Chapter 4 explains the design, development, testing and implementation of health information leaflets, while Chapter 5 presents the results of the research according to the phases of the research.

CHAPTER 4: Design, development, testing and implementation of health information leaflets

4.1 Introduction

This chapter will encompass the background and outline of the design, development and testing of the health information leaflets (HILs) used in this study as well as the key role players. The design, development, testing and implementation of the HILs were conducted during Phase 2 of the research study, as can be seen in Figure 9, Chapter 3 of this thesis.

4.2 Background

Having knowledge of NCDs and tobacco use may influence healthier lifestyles (Ha & Lopez, 2014). Printed health information materials are useful for enhancing health knowledge in individuals (Shieh & Hosei, 2008). However, the usefulness of health information material greatly depends of the reader's level of health literacy. Health literacy is a crucial determinant of health. The ability to read, interpret, and follow health instructions and health education materials is severely limited by the literacy level of the reader, further affecting those in the lower social-economic strata. Previous studies conducted on health information material in South Africa identified that the effectiveness of health information material depends greatly on its ability to cater for the diversity of cultural concepts within the communities (Evian, Ijsselmuiden, Padayachee, & Hurwitz, 1990; Mbananga & Becker, 2002; sahoboss, 2014). Health information materials are suggested to be pre-tested for factors such as clarity, consistency, language, comprehension and relevance. A study further suggests that health education materials, within this context, should be explicit, direct, and understandable by the end-users. Health information material research within South Africa lacks the synergy between the visual and cognitive processes with cultural, environmental and socio-economic status of community members (Hugo & Skibbe, 1991; Mbananga & Becker, 2002). Health information material developed, that ignore these connecting factors, such as health literacy, cultural differences which co-exists with inequitable socio-economic development, often proves to be problematic when developed outside the South African context.

The current study therefore, conceptualized, developed, analysed, implemented, and evaluated health information materials in an engaged participatory manner with the end-user

participants. This collaboration could have allowed for the health information material to be more culturally sensitive and contextually appropriate.

4.2.1 The HIL development and implementation participants

I. The tobacco peer educators

The tobacco peer educators (TPEs) were the group of peer educators who volunteered to participate in the educational intervention during Phase 1 of the study. The TPEs consisted of 11 members and each member actively participated in the development of the HILs. TPEs were also present during the workplace health promotion training workshops on tobacco control and prevention.

II. The research peer evaluators

The research peer evaluators (PREs) were fellow Master of Pharmacy candidates. The RPEs also worked on NCD risk factor health promotion projects at the institution. These RPEs assisted with evaluation of the HILs and provided formative feedback during the course of the study.

III. External healthcare professionals

In the attempt to obtain external feedback, validation and to run more effective workshops, external healthcare professionals were recruited. A group of nurses were invited to assess the HILs for content validity of the HILs, provide feedback on the content and design of the HILs and facilitate discussions with the participants. The knowledge and experience of the healthcare professionals were useful during the design and evaluation of the HILs. They also provided feedback on how to make the HILs more user-friendly.

IV. African culture and languages specialist

A local African culture and languages specialist was recruited to provide feedback and inputs on the cultural appropriateness of the HILs. The African culture and language expert also assisted with the translation of the HILs and evaluated the graphics and content of the HILs for contextual appropriateness and cultural sensitivity.

4.3 Brief overview of HIL development

The development of the HILs (Phase 2 of the research study) occurred through five main stages:

- i. **Stage 1:** The conceptualization of the first draft of the HILs (through literature review and FGDs with participants), evaluation and production of a modified first draft of the HILs
- ii. **Stage 2:** This phase involved the content validation (self-administered questionnaire, discussion), qualitative (discussion), and quantitative evaluation by the RPEs and healthcare professionals (Suitability Assessment of Materials, Patient Education Materials Assessment Tool, Readability tests, discussion). The feedback received during this phase was included in the modifications for draft two of the HILs.
- iii. **Stage 3:** Pilot testing of FGD evaluation question guide and Comprehension and Acceptability questionnaire. Pilot testing of three HILs.
- iv. **Stage 4:** Third Draft of HILs was developed from the feedback obtained in Phase 3. The HILs underwent qualitative and quantitative analysis again to produce the four drafts of HILs.
- v. **Stage 5:** The final language, graphics, content and layout editing was done and the final draft of the HILs was produced. The final draft was evaluated qualitatively and quantitatively for the last time.

4.4 Stage 1: The conceptualization of the HILs

In accordance to the participant needs identified during the SSIs and FGDs, HILs had to be designed, developed and evaluated, using a participant participatory approach, containing information on tobacco use prevention and control. Participant feedback and literature informed the content and design of the HILs throughout all the phases of development. The HILs were conceptualized, designed and contained information requested by the participants. Based on the results of the second objective (refer to *Educational health promotion phase* objectives of this study) three main topics were identified for the three HILs. The topics were as follows:

- i. *Tobacco use and our health*
- ii. *Why do people smoke tobacco?*
- iii. *How does smoking affect those around us?*

The topics identified were used to guide the literature search performed to develop the first draft and subsequent drafts of the HILs.

4.4.1 Background literature for HILs

Participants identified which aspects (content headings) they would find most useful to have included in the HILs. Based on the feedback obtained, an extensive literature review was conducted and evidence-based literature on HIL design, development and implementation; tobacco use and prevention was sourced. The content developed was continuously tested and presented to the participants during the development process as a form of validation and to ensure that the participant needs were met (Appendix O).

4.5 Stages 2-5: Design of HILs

In order for HILs to be more 'user-friendly', factors such as: more explicit titles, writing in active voice, having a readable font size, well-designed layout with sub-headings could be considered (Appendix P) (Corcoran & Ahmad, 2015). It is also crucial to understand that images and graphics will assist in improving reader comprehension and recall of health messages presented in the HIL (Kondilis et al., 2010).

The HILs were developed using Microsoft Publisher®. The literature-based recommendations were used to inform the conceptualization and design of the three HILs:

- i. **Content:** The health messages included in the HILs (Appendix H) has to respond to the participant needs and be suitable to address their identified health challenges. The content should therefore be relevant, up-to-date, accurate, culturally sensitive, concise and should improve reader comprehension and actionability (Turnbull, 2003; Yaghmale, 2003) (Appendix K & L).
- ii. **Sentence construction:** Sentence structure, noun phrase complexity and function word density should be considered when constructing health information materials. These methods may lower the perceived and actual difficulty of the text and improve the reader willingness and ability characteristics. This may lead to improved comprehension of the health literature presented (Leroy et al., 2010).
- iii. **Writing style:** To improve user-friendliness of the HILs, the information should be presented with simplified 'everyday' language using personalised pronouns where necessary. The use of complex terms and medical jargon should be avoided and,

where used, it should be explained in a manner suitable to the reader (Lake et al., 2007; Kitching, 1990). Writing in active voice can also improve the user-friendliness of the HILs.

- iv. **Format and layout:** The font size of the information presented has to be easy to read and visually appealing to the reader. Bold headings, different font sizes, bullet points, dark headings against light backgrounds and content boxing were techniques used to make important information more prominent. The HILs followed an A4 size, landscape, 6-plane, columned, tri-fold design to improve reader navigation through the health messages contained in the HILs (Centers for disease control and prevention, 2009; Whittingham, Ruiter, Castermans, Huiberts, & Kok, 2008). The HILs were printed on both sides with the six panels divided into three sections;

- **Section 1:** The first plane contained the title of the HIL and a related cover graphic.
- **Section 2:** Consisted of four inside planes which contained the illustrations and health messages relevant to the title on the first plane.
- **Section 3:** Contained a summary section, and interactive game, acknowledgements and contact details. This information was positioned on the middle-back plane of each HIL.

The use of stylised fonts, italics and capital letters are not recommended as they decrease the user-friendliness and effectiveness of the health messages contained in the HILs (Piddennavar & Krishnappa, 2015; Renuka & Pushpanjali, 2013).

- v. **Illustrations:** The illustrations used in the HILs have to be clear and uncluttered, relevant, appropriate, culturally sensitive and well-positioned to relevant text. The illustrations should aim to improve the understandability, actionability and recall of the health messages contained in the HILs. The illustrations used should be captioned with titles appropriate to the text to which it refers (Tutty & O'Connor, 1999).

4.5.1 HIL Content

The HILs contained information on the following health messages: Identifying and understanding the different reasons why people might use tobacco; what the chemicals are contained in tobacco products; how to identify these chemicals and how they affect the health of tobacco-users and passive smokers; tobacco use addiction and withdrawal; and ways to reduce tobacco use. These themes were spread over the three HILs entitled; *‘Tobacco use and our health’*, *‘Why do people smoke tobacco?’*, and *‘How does smoking affect those around us?’* A heading for each HIL content component is represented in Table 7 below:

Table 7: Outline of the headings contained in each of the three HILs

Health information leaflet title	HIL Plane number	Headings
‘Tobacco use and our health’	1	Tobacco use and our health
	2	What is tobacco?
		What is in tobacco smoke?
	3	What does tobacco do to our health?
	4	Smoking tobacco and our health
	5	You can reverse some of the effects of smoking!
‘Why do people smoke?’	6	Fun word game; Remember! (summary); Help line; Acknowledgements
	1	Why do people smoke?
	2	People might smoke because:
		Is smoking still attractive?
	3	Why do people think smoking is fun and relaxing?
	4	Why is smoking around friends and family bad?
		Peer pressure and smoking
‘How does smoking affect those around us?’	5	Ways to stop smoking
	6	Remember! (summary); Word Search; Help line, Acknowledgements
	1	How does smoking affect those around us?
	2	What is in tobacco smoke (summary and link to ‘tobacco and our health’ leaflet)
		Second-hand smoke
	3	Why is second-hand smoke more dangerous than smoking itself?
		Who is at risk of being harmed by second-hand smoke?
	4	Some effects of second-hand smoke on non-smokers
	5	How to avoid breathing in second-hand smoke?
		Second-hand smoke and human rights
	6	Money and tobacco use
		Remember! (summary); word game; help line; acknowledgements

4.6 Stage 2-5: Review of HILs

Often, written health education materials do not suit the health literacy needs of their intended audiences and could pose as a barrier to individuals taking responsibility of their own health (L. Ryan et al., 2014). It is therefore essential to perform the necessary readability and suitability tests (Lake et al., 2007; Lampert, Wien, Haefeli, & Seidling, 2016) to develop printed health materials that are more user-friendly, specifically to those with limited general or health literacy skills. Methods of evaluating printed materials are outlined in Table 8 below (Badarudeen & Sabharwal, 2010; Kim, Lee, & Yoon, 2015; Lake et al., 2007; Lampert et al., 2016; L. Ryan et al., 2014; Wang et al., 2013):

Table 8: Methods of evaluating printed health material evaluation

Method	Evaluation Tool
Direct	SSIs, FGDs, SAQs
Indirect	Design assessment tools (SAM, PEMAT), Readability tests

These methods could either be subjective (for example, SAM and PEMAT) or objective (for example, readability tests). As a result, thereof, it is often recommended that more than one evaluation tool is used to improve the accuracy of the results obtained. The use of each of the evaluation tools, mentioned in Table 8 above, are outlined under the *Data Collection and organization* section in Chapter 3 of the thesis.

4.7 Stages of HIL development and modifications for all three HILs

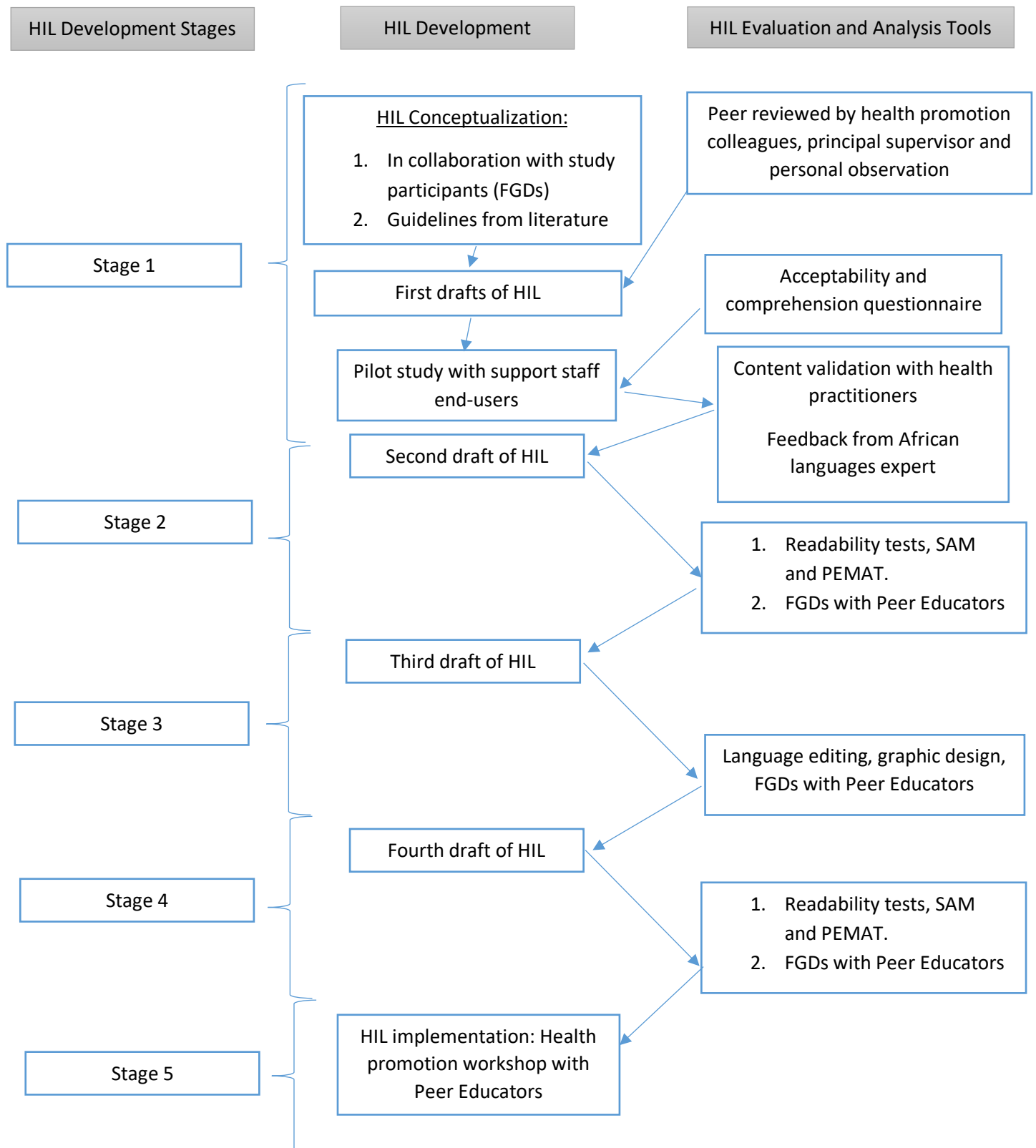


Figure 12: Overview of the HIL development process

4.8 Implementation of the health information

4.8.1 The health promotion training programme workshops

A four-day health promotion training programme was designed and implemented for the 40 Rhodes University Peer Educators. Each of the four NCD modifiable risk factors (tobacco, alcohol, unhealthy diets and physical activity) was allocated a day. The tobacco project was conducted on Tuesday (Table 9 below). The participants were provided with a self-administered pre- and post-intervention questionnaire. To improve the user-friendliness of the questionnaire, an isiXhosa translator was used to guide the participants through the questionnaire. The training programme focused on the capacity of Peer Educators to obtain, process, understand and translate tobacco-related health information in a culturally sensitive and contextually appropriate manner. The training programme was divided into three 90-minute sessions.

Table 9 below outlines the programme for the four-day workplace health promotion workshops conducted:

Table 9: Workplace health promotion workshop programme

Day	Session, facilitator and topic		
	8am-10:30pm	10:30am-12pm	1pm-4pm
Monday	Inauguration by the Rhodes University Vice-Chancellor, the Faculty of Pharmacy Dean, Manager of Catering Services, Rhodes University Business school (Co-Supervisor), IWS, Principal Supervisor	Introduction to NCDs: Retired Nurse from the South African Department of Health	Culture, myths, stigma and awareness: Lecturer from Rhodes University Business School
Tuesday	The researcher (Tobacco use WHP project): presentation, discussions, brainstorming and role play		Staff Wellness: Head of Rhodes University Human Resources Department The Golden Circle: Director of Rhodes University Community Engagement
Wednesday	Alcohol abuse: Counselling psychologist	Researcher presentation and workshop on the Alcohol WHP project	Finding your purpose: Manager of Rhodes University residential operations
Thursday	Healthy diet and physical activity: A Rhodes University Health Suite representative and Human Kinetics and Ergonomics Department at Rhodes University	Healthy diet and physical activity: Retired nurse from the South African Department of Health	Talks from: Head Nurse at RU HCC, Rhodes University Business School (Co-supervisor) and IWS

Session 1: Overview and collection of pre-intervention data (the first 90 minutes session)

The objective of the training programme and the content of the pre-intervention questionnaire were explained to the PE with the aid of an isiXhosa translator. The pre-designed structured questionnaire was used to collect the following data from the participants: personal and sociodemographic data and their knowledge on tobacco related health and socio-economic factors. The pre-intervention questionnaire was distributed to the participants. The objective of this session was to assess the participant tobacco-related knowledge before presenting the content of the training programme.

Session 2: Educational intervention (the second 90 minutes session)

The objective of this session is outlined in Table 10 below:

Table 10: Educational objectives and learning methods of Session 2

Session	Educational Objectives	Learning Methods
Session 2	<u>By the end of this session, the PE should be able to:</u> Identify the different reasons why people smoke, the chemicals contained in tobacco products that cause tobacco use addiction; tobacco use withdrawal; and ways to reduce tobacco use.	• Presentation by researcher and discussions, HILs and Microsoft® PowerPoint sides

i. Obtaining health information

A health education programme directed at the low-semi-literate PE was conducted to improve their knowledge of the factors that influence tobacco use and to promote the use of the World Health Organization's Workplace Health Promotion Model (WHO, 2010b). The participants were provided with a literacy level appropriate health information material resource pack containing the HILS. The researcher presented the content of the HIL using a Microsoft® PowerPoint presentation. The presentation was concluded with an open discussion.

ii. Processing and comprehension of health information provided

To improve the effectiveness of the educational intervention phase, descriptive videos and graphics were used with minimal text, in the presence of the isiXhosa translator. A question-and-answer presentation style was adopted to keep the participants engaged in the tobacco-

related concepts covered. Comprehension of the tobacco-related health information covered during the intervention phase was evaluated using a self-administered pre- and post-intervention questionnaire.

Session 3: Translating health information (the third 90 minutes session)

Table 11: Educational objectives and learning methods of Session 3

Session	Educational Objectives	Learning Methods
Session 3	<u>By the end of this session, the PE should be able to:</u> Identify possible communication barriers; translate tobacco-related health information to a low-semi literate population in a culturally sensitive and contextual appropriate manner using the HIL	• Role play (Appendix M), HIL, discussion and brain storming

The Peer Educators were divided into three groups and each group was provided with a physical copy of the HILs. During this session (Table 11 above), the peer educators had to translate the health information to the other members in the group (acting as the broader support staff members at the University) in the form of a role play. Each group had a peer educator, support staff members, a scribe and a reporter. As feedback, the groups were expected to record the user friendliness of the HILs, ‘What worked? And what did not work?’, when used in workplace health promotion. The study participants were also equipped with the completed HILs to distribute to their peers and to use as reference sources of information when needed in future.

4.9 The workplace health promotion tobacco peer educator’s manual

The workplace health promotion trainer’s manual was created in the exact same way as the HILs. The HILs developed were included into the trainer’s manual and the peer educators were provided with more in-depth explanations of each of the concepts contained within each HILs. FGDs were conducted with the 11 peer educator participants to explore their needs. The HILs developed were restructured in the form of a poster to raise awareness on the University campus (Appendix Q).

4.10 Conclusion

This chapter has described the design, development, testing and implementation of health information leaflets, following a procedure that ensured that the health information material developed was readable, actionable, suitable, user-friendly, culturally sensitive and contextually appropriate. The next chapter explains the results of the WHO WHP framework.

CHAPTER 5: Results

5.1 Introduction

This chapter will provide a comprehensive description of the SSI and FGD outcomes of phase one of the study. The exploratory phase was conducted to assess tobacco control in South Africa and other countries; to evaluate the existing tobacco health promotion policies and practices at Rhodes University; and to establish the need for and procedures to conduct a health promotion programme. These objectives were addressed through conducting SSIs with the key stakeholders and FGDs with the Peer Educator support staff. The SSIs and FGDs consisted of both open-ended and close-ended questions and probes were used where required. Probes were used to clarify vague responses from the participants; explore their related beliefs; and to challenge their counterfactual responses. Through using probes, the researcher merged the response from the lead question with that elicited by the probe. This chapter will demonstrate the outcomes related to the exploratory phase, health information leaflet conceptualization, development, implementation and the programme valuation.

5.2 Phase 1-5 results

5.2.1 Demographics

The participant demographic characteristics were collated prior to commencing with the data collection; SSIs and FGDs. The participant demographics are represented in the sub-sections below.

5.2.1.1 Key stakeholders

The key stakeholders (n=8) interviewed were both male (n=4) and female (n=4). Four of the key stakeholders identified their home language to be English and four identified English as their second language; their home languages were Afrikaans (n=2) and isiXhosa (n=2). The key stakeholder participants all had either a diploma, bachelor's degree or higher qualification.

5.2.1.2 Support staff

Phase 1 support staff participant demographic characteristics are represented in the Table 12 below. The majority of the volunteering participants (n=11) were Black African (90.10%), first language isiXhosa speakers (81.82%), while 9.1% were Caucasian (White) African, first language English speakers (18.18%). The age range for the support staff participants was between 36 and 57 years of age. The female sample size (81.82%) was larger than that of the

male participants (18.18%). The majority of the participants (72.73%), for the purposes of collaborative health material development, preferred to communicate and read in English.

Table 12: Peer Educator Demographics

Unique participant identifier	Gender	Age	Department of Employment at Rhodes University	Staff number	Highest educational grade obtained	Additional courses attained	Years of Employment at RU
1	F	39	Central Cleaning Services	██████	Grade 12	Short Course in "computers"	2
2	M	57	Central Cleaning Services	██████	Grade 12	Short Course in "computers"	13
3	F	53	Catering Services	██████	Grade 12	Short Course in "computers"	8
4	F	58	Catering Services	██████	Grade 10	Short Course in "computers"	14
5	M	48	Grounds and Gardens	██████	Grade 10	-	More than 1 year
6	F	Did not disclose	Catering Services	██████	Did not disclose	-	More than 1 year
7	F	Did not Disclose	Building and Maintenance	██████	Grade 12	"other certificates"	More than 1 year
8	F	44	Catering Services	██████	Grade 12	Short Course in "computers"	7
9	F	36	Catering Services	██████	Grade 12	Short Course in "computers"	3
10	F	47	Central Cleaning	██████	Did not disclose	-	12
11	F	43	Central Cleaning Services	Not disclosed	Grade 12	A short course in "computers"	9

5.2.2 Thematic analysis outcomes from semi-structured interviews and focus group discussions

A thematic analysis is considered to be a rigorous process of data familiarisation, data coding and theme identification and revision. The qualitative data collected was analysed thematically; manually and using the NVIVO® software. Thematic analysis allowed for the identification of initial codes, analysing common codes between data sets, and reporting of themes within the data (Braun & Clarke, 2006). The following figure 13 represents how the SSIs were analysed thematically to obtain the initial codes:

Profile	Data Item (Question and response)	Initial Codes
1	What does health promotion mean to you? Personally to me, it means that we need to promote the issue of health to all the Rhodes Community and health promotion is very wide and there is different topics that we can present to our people but basically the basic health knowledge of how to prevent most of these communicable diseases that's out there the sexually transmitted infections that's out there or just to have a basic healthy lifestyle and how to maintain that and how to promote that amongst everyone that is here at Rhodes University.	- Personal perspective - Defined health promotion - Urgency - Community - Health knowledge - Disease Prevention - Communicable diseases - Lifestyle - Health maintenance - Responsibility - Collaboration
2	What does workplace health promotion mean to you? At the workplace anything can happen we are also at risk at the workplace because we can get injured there can be occupational injuries at the workplace and because of the stressful circumstances we work under we can also be having psychological emotional stress and these factors can also influence our physical health so even when we are at the workplace because we spend so much hours here anything can happen to us at any time and then we also need to know what workplace health is and then they should also know that there is a place that they can at least come for their wellness, the whole wellness division is there so that the community of Rhodes can know that we are here to support them and whatever happens we are here to help them through that process.	- has a health background - Stress is a contributing factor - Psychological influence physical health - Long working hours - Workplace health - Community - Responsibility - Support the staff - help staff - we

Figure 13: SSI thematic analysis representation used to identify initial codes

These initial codes were then used to create a coding framework in the NVIVO® Software programme, which was then used for the further analysis of the data and validation of these themes. An example of how the programme was used is represented in figure 14 below:

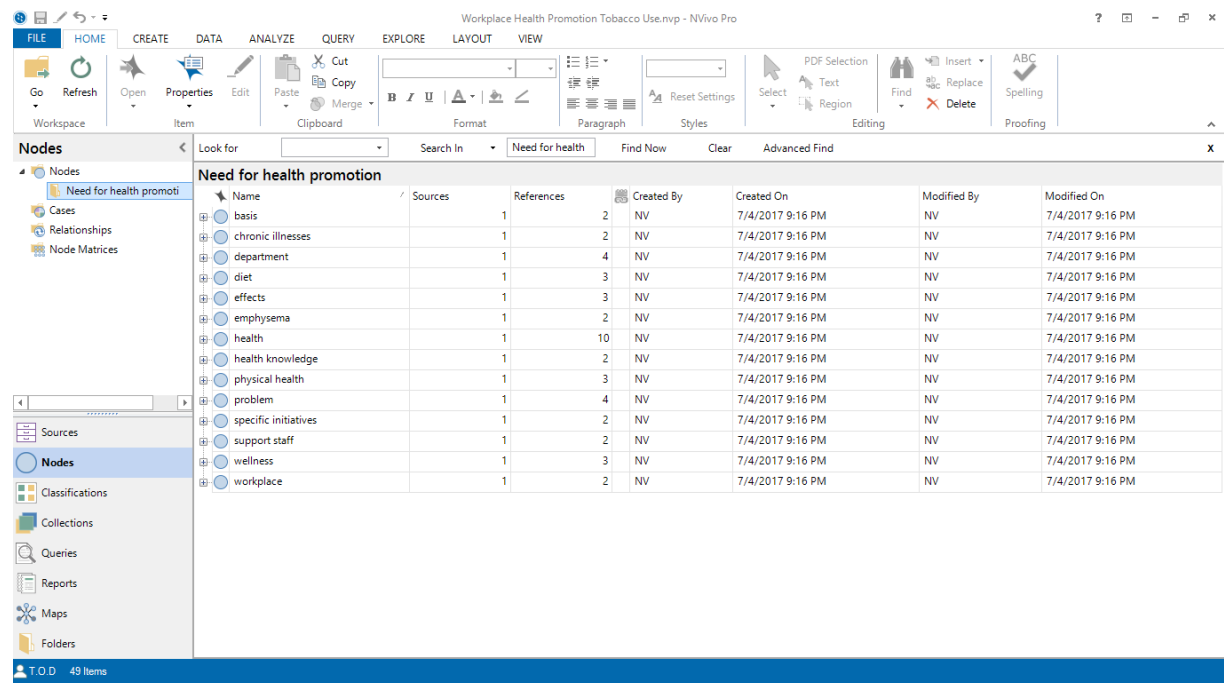


Figure 14: A representation of the re-coding performed using NVIVO® Software to analyse both SSIs and FGDs

The major themes that were explored during the SSIs included:

- i. The understanding of the term 'health promotion'
- ii. The understanding of the term 'workplace health promotion' in context
- iii. The need for and history of other health promotion activities that were held at the institution previously
- iv. The policies in place for tobacco control at the institution
- v. Analysing the successes and challenges of past health promotion initiatives
- vi. Brainstorming ways of conducting health promotion activities at the institution

The responses of the SSI participants were analysed and will be unpacked in the sections below:

I. Understanding the term 'health promotion'

To explore the variables of health promotion and suggest a sustainable way forward, a standardized definition of health promotion needed to be established amongst the SSI participants. Some of the responses that were obtained from the SSI participants (indicated as SSI-P1-8) are quoted below:

"Personally to me, it means that we need to promote the issue of health to all the Rhodes community and health promotion is very wide and there is different topics that we can present to our people but basically the basic health knowledge of how to prevent most of these communicable diseases... to have a basic healthy lifestyle and how to maintain that and how to promote that amongst everyone that is here at Rhodes University." - SSI-2

"Basically, informing people how to look after themselves, better than they do, with the correct dietary requirements, fitness...uhm...and generally looking after their body so that they are... uhm...they not abusing themselves" - SSI-1

"To me, health promotion is quite a new concept, I have been hearing about health promotion from the Department of Health and here at Rhodes it is quite a new concept...By promoting health most probably by having workshops awareness and also making people take care of their own health"- SSI- 4

'To promote people to take care of their own health, they need to stay healthy it's about a society that does not have any type of diseases in other words, you have to prevent diseases before they come to you"-SSI-4

"The health promotion is the issue always we talk about Rhodes and the management lets for example person started to work at Rhodes University with 100% in terms of health but later you found that that person's performance is going down according to the employer. - SSI- 3

Seven out of the 8 SSI participants knew what health promotion meant. The definition of health promotion was then explained to those who did not understand the term 'health promotion' and the discussion continued.

II. Understanding of the term 'workplace health promotion' in context

The participants were asked to provide their interpretation of the term *workplace health promotion*. Some of the SSI participant responses are represented below:

“At the workplace anything can happen, we (referring to the staff) are also at risk at the workplace because we can get injured. There can be occupational injuries at the workplace and because of the stressful circumstances we work under, we can also be having psychological emotional stress and these factors can influence our physical health. So even when we are at the workplace because we spend so much hours here, anything can happen to us at any time and then we also need to know what workplace health is and then they (referring to the other staff members) should also know that there is a place (referring to the Rhodes University Healthcare Centre) that they can at least come for their wellness, the whole wellness division is there so that the community of Rhodes can know that we are here to support them and whatever happens we are here to help them through the process.” – SSI-2

“I think that is where the employer, uhm, should be sort of advising his staff on better ways of looking after themselves...to... because of a healthier body and healthier mind there will be a better productivity within the workplace as well”- SSI-1

“The workplace need to take care of its own employees even though the employees themselves need to take care of their own health. But the workplace also need to come up with means and programs that will help employees to stay healthy. The workplace need to have its own wellness or health promotion policies in place. Something that I am not sure whether our own workplace does have those kind of policies so I think these are the things that we need to put in place.”-SSI-4

III. The need for and history of other health promotion activities that were held at the institution previously

The sub-themes identified were as follows; *'Disease prevention is better than cure'*, *'Non-communicable diseases'*; and *'Tobacco use'*. The participants were aware of the significance of disease prevention and its relation to non-communicable disease risk factors; in particular tobacco use.

Disease prevention is better than cure

There is a need for workplace health promotion programmes and research:

"This type of research that you are doing to me is very important it will not only help people stay healthy it will also help the university in terms of cost. Because if anyone dies of any type of diseases it is going to take some time to replace that particular individual and it will also cost the university lots of time and money recruit, train and relocate a new employee, it's called 'down-time'. Now if there is these types of initiatives, I strongly believe that the university will save a lot of costs."-SSI-4

"Some of the support staff are on medical aid and even those that are on medical aid still have to pay towards the medical aid. In other words, whether you are on medical aid or not there are costs that are involved. So to me it is very important that we need to prevent diseases before they arise."-SSI-4

The SSI participants mentioned that there are health promotion activities that are being held at the University and that is an important activity. They commented as:

"Yes, I can say that because on a daily basis that is what we (referring to the healthcare staff) are doing when we see clients as an 'individual' that is what we are doing for every person that comes in here (referring to the RU HCC). Say for instance a person comes in here with Flu, I'm going to give that person health tips like drink lots of water, you need to take some bed rest, eat your fruit eat your vegetables so that is just for something as simple as flu."- SSI-2

These health promotion activities were each conducted differently within each department:

"Well, what we do is we try and being in the food services we, uhm, training our staff continuously on the importance of feeding the students properly so that they have got sufficient energy in their body from their meals to go and be able to study in the lecture venue

and be focused and things like that, so we use those comparisons also to inform the staff of about if they eat healthily, then their productivity will be better...”- SSI-1

The Catering and Food Services division mainly focused on support staff health promotion activities related to healthy diets. Having more knowledge on healthy diets aided the support staff within this division to prepare food that is healthier for the university student residents.

“To my knowledge at this stage it is pretty much only the kitchen staff because of the fact that they working with food and they see the results and they see the benefits of what they doing through the results of the students.”- SSI- 1

The RU HCC also conducted health promotion talks on campus. The RU HCC performed activities both on individual face-to-face basis and group discussions:

“So health promotion happened from face-to- face individual basis but it also happens in group because when we go out to the residences we give health talks preventative care like family planning or if you get raped what you should do or if you do have these illnesses what should you do.”- SSI-2

A summary of the past health promotion activities conducted by the RU HCC are mentioned below:

- a) *“We also have lots of initiatives, we have pink drive where we promote **cancer awareness...***
- b) *We also go to the male residences where we **promote sexual health knowledge** about sex and then also how we can prevent HIV, male circumcision all those things we talk about no matter who you are an individual or you are in a group whatever the topic is...*
- c) *That is something that is ongoing and we do have campaigns First things First campaign where we are promoting all kinds of health like **blood pressure, sugar, TB awareness, doing pap smears, knowing your HIV status** and then during the month of march we are thinking about TB awareness that is ahead of us so we go according to the calendar from the department of health and*

we try to go with what the department policies are and then we give them the information...

- d) *Or as the need arises, some group will come and say sister, "we need a talk on this topic or this or whatever..." and then we will go to that group and we will give that information that they require."* – SSI-2

The health promotion activities are conducted with both the students as well as the grade 1-5 support staff but more so with students. It was mentioned that health promotion activities are mostly performed on grade 1-5 support staff that 'come in' to visit the RU HCC:

"Alright we are working with the support staff the grades one-to-five, that is the staff that we help and we do help them with their chronic illnesses and with any other projects we do for students we do also include the staff because we see them as the same because when a client comes in they do have the same health requirements that anyone else has.

Non-communicable diseases

These health promotion activities are centred more on chronic grade 1-5 support staff patients rather than more focused chronic disease prevention:

"we work with the chronics we work with the day hospital Settler's Hospital, and they come here at a monthly basis just to get their treatment but we do the monitoring of the disease like we do the screenings, the health promotion the diet, the lifestyle the exercise, all those stuff. So we try to support the staff as far we can" –SSI-2

The SSI participants collectively identified NCDs as a concern at the institution and identified tobacco use as a contributing factor.

"You know it's a big problem, people do not know what is happening with their physical health they do not go for that yearly screening, and people don't do that. And we know that people do not eat healthy diets for whatever reason, maybe it's too expensive to eat healthy food or whatever these is a lot of reasons why." –SSI-2

Tobacco use

SSI participants identified NCDs and unhealthy lifestyles (including tobacco use) as a “huge problem” at the institution:

“Plus people (referring to the support staff) abuse smoking, they abuse alcohol, and all kinds of food that has preservatives and so on, so they do end up with these diseases like hypertension, diabetes, cardiac problems, cholesterol problems and it’s a huge problem.”- SSI-2

One SSI participant identified observing less tobacco use incidences within his division:

“I think, uhm, just looking around the kitchens generally we have a very small percentage that do smoke which is quite, uhm, beneficial to us”- SSI-1

Tobacco use prevalence was more observed with the grade 1-5 support staff working in the university divisions such as Ground and Gardens and Building and Maintenance:

“we found that they are smoking packet of cigarettes (referring to the support staff)... once they were working in danger when they working with a mower that has got a, patrol at the middle, (referring to the gasoline fuelled lawn mowers used in the workplace) and they are not putting the mask (inhaling fumes) and we also have painters and they are smokers at the same time and there is nothing to protect them and there is no person that is there that monitor that process. Than that is one of the danger that we have and we found that later stage people have got chest pains and problems” – SSI-3

“It’s only when people (referring to the support staff) become ill that they want to make that change and while they are still healthy - it’s not the cigarettes it can’t be the cigarettes, they are totally in denial about that. But the truth of the matter is that smoking kills and it does cause all these illnesses.”- SSI-2

It was also identified that there no known health promotion initiatives on tobacco use control and prevention at the institution:

“No unfortunately not. Alcohol yes but not tobacco.”- SSI-1

Second hand smoking was one of the concerning factors raised:

“And then this whole concept about the effects of smoking around other people that is also very tricky behavioural stuff because I guess a lot of smokers think that they are not being offensive they do not think about the impact and some don’t frankly care.”-SSI-7

“In the last six years, no”-FGD-11

iv. The policies in place for tobacco control at the Institution

The participants identified that they are vaguely aware of tobacco control policies put in place by the institution but some claimed that there are none in place:

“That is a tough one, I really don’t know I mean at the wellness department we try our best to put policies in place but there is not, if there is even something on tobacco use, I don’t even think there is. The only thing that we know about is the legislation that comes from the government where people are advised not to smoke in front of others to smoke outside that is the only thing that I am aware of, from Rhodes University, no, there is nothing in place actually I don’t know about it, maybe there is something, I don’t know about it” – SSI-2

“The usual sort of, uhm, there is a smoking policy at Rhodes, uhm, I think you got to be 10 meters away from a building, uhm, but when I’ve seen them smoking, I’ve seen them away from the facilities and as I said I can maybe count on my hands who I know who smoke.” – SSI-1

Participants identified that if there are tobacco control policies that they are not visible or promoted:

“So that is why I am saying that we implement things across the structures and where we take things (referring to policies) and put it in your bag or drawer but the people don’t know the policies. Rhodes University need to implement the health promotion.” – SSI-3

“uhh, what I know is that the University are running the process of policy. I am pretty sure I am reading in the email currently, whether on Friday was reading producer guide, That smoking in the area in terms of tobacco but they are saying that you can’t smoke in a venue and you must be far away or there has been meters that you have been put by the government in terms of smoking. Then there are reminders in terms of those punishment and other things. But there is no one currently coming forward to teach them or to let’s say learn and teach.

Because now the policies are in place but there is no person that can promote that policy to make it understandable to workers.”- SSI-3

“There is none. Although I have been doing this. You know when I have HIV/AIDS awareness’s include other health and wellness programmes because it doesn’t help for me to only concentrate on HIV/AIDS people are dying every month due to other diseases not only HIV/AIDS.”-SSI-4

“There are no policies that I know of. The only thing that I know is that there are you know one cannot smoke in office, laboratories, lecture theatres but one can smoke outside. I have never seen something that says this is a smoke free zone.”-SSI-4

The interviewees mentioned that the focus was more on HIV/AIDS and not too much on health promotion of NCDs and its risk factors:

“Regarding health promotion things that are in place are things that are like HIV/AIDS workplace policies but not with health promotion”- SSI-4

iv. Analysing the challenges of past health promotion initiatives

It was identified by some of the SSI participants that there is a health-related knowledge gap amongst the support staff at the University and that stimulating behaviour change through health promotion activities proved challenging.

“There is definitely, you know and when we advise people about lifestyle and diet changes because it starts with that because you could have all the medications in the world but if you do not follow the correct lifestyle it’s not going to help you.”- SSI-2

The perception that certain types of disease only affect certain population groups was a barrier to conducting comprehensive interdisciplinary health promotion programmes. Convincing the institutional management to support health promotion activities was challenging:

“There is this myth at Rhodes that certain types of diseases are only for the lower income group staff members that thing tend to be a barrier. Let the management understand why it is very important for us to implement this programme.”-SSI-4

It was also mentioned that, to their knowledge, those health promotion activities that were conducted may have been inadequate, unsustainable, showed a lack of interest and that there is no one assigned to facilitate these programmes.

vi. Brainstorm ways of conducting health promotion activities at the Institution

The current theme constitutes of 19 sub-themes (Table 13) that represent the ideas that were brainstormed ways in which health promotion could be conducted, by the participants.

Table 13: The 19 sub-theme health promotion recommendations identified by the study participants

Sub-Theme	Quotations
Get 'buy-in' from institutional management	<i>"The management sometimes tend to be a barrier. So what is very important for us is that we manage to get the buy-in also from the management. Let the management understand why it is very important for us to implement this programme."</i> -SSI-4
The need for health promotion facilitators	The participants identified the need for skilled professionals to facilitate health promotion activities: <i>"We need professional people that can dealt with the matter."</i> - SSI-3 <i>"And I think we need to have health promotion facilitators it is important because there is no person that can drive it."</i> -SSI-6
Conduct a baseline study	It was suggested that in order to build resilience, the researcher has to conduct a baseline study of the study setting, context and current challenges: <i>"I always believe in research, always checking what the state of the University is at the present moment with regard to these type of initiatives. That is what I call the baseline. If there is none...then we need to do something in order to have those policies and programmes in place. If there is something...we need to check whether it does have an impact. If there are programmes in place, which I strongly believe that there are no programmes in place regarding to tobacco use at Rhodes University. So the first step is to look for the baseline, do a little bit of research and I think the research will inform us what type of programmes we need to implement at Rhodes University for us curb the use of tobacco."</i> -SSI-4
Having organizational structures in place	<i>"Is also about having organizational structures in place"</i> -SSI-7 The interviewee continued to state that policies need to be carefully analysed before radical implementation and that it is a multi-faceted issue. The decisions made should be as sensitive and contextual as possible and should strive towards being less offensive to everyone involved. It was proposed that the 'carrot-and-stick approach' would be suitable when dealing with conflict to rather encourage healthy behaviour and not be exclusive and offensive to anyone.

	<i>"When I worked in England where they banned smoking on our campus the whole campus so you not allowed inside the buildings, you got to go into the streets and smoke so they made it very difficult. But what did they do to the smokers, they made the smokers then feel like outcasts like they were not part of the community, like there weren't welcome so instead of negotiating with the smokers and saying "We don't want to have your cigarette butts on the ground, on our campus this is our problem you people need to go to a place to smoke, we want to send you, how do we do this together, how do we negotiate together?" Instead they made rules and set the smokers against them so it became a them-and-us rather we are in this together, this is what we are aiming for how do we do this together how do we find a middle point as it were?"- SSI-7</i> <i>"Rhodes University need to implement the health promotion. The university structures can assist with the implementation."-SSI-3</i>
Interdisciplinary participatory approach	It was recognised that for this health promotion programme to be successful, all the stakeholders from their various departments needed to work together towards a common goal: <i>"For a workplace health promotion programme to be successful, Rhodes University leadership has a vital role to play. Our commitment and support could commemorate and communicate the purpose and processes of workplace health promotion to all levels of the instisution"-SSI-1</i> <i>"So where are the other expertise on campus and certainly through the campus health centre there is access to psychologists. They might have really good ideas about other things that could help. What are their motivations and what are their wishes and hopes."-SSI-7</i> <i>"Maybe as a wellness department we tend to forget about smoking so we as the wellness department can also come to the party and more promote the dangerous effects of smoking." –SSI-2</i> <i>"Because let's take for example we have a clinic sanatorium (referring to the RU HCC), if actually that clinic can open to visit their department (support staff divisions). At least one session a year to remind workers (support staff)."-SSI-3</i> <i>"To implement to me is very easy we have number of structures in a University and the best way is to communicate with the trade union and the trade union will take the matter straight to the workers and spread to them easy and if we spread it easy it will be easy for them to implement and in the implementation we will see that whether its functional or dysfunctional." –SSI-3</i> <i>"So it's not an issue of in terms of an issue of the individual all of us must take the responsibility to be accountable to promote ourselves."-SSI-3</i> <i>"...link and connect the peer educators to healthcare centre and initiate the relationship and possible collaboration"-SSI-2</i> Obtain organizational 'buy-in' and keep in contact with the support staff participants:

	"there is a saying that 'nothing for us, without us'. So to me it is very important that we always have contact with the support staff members. Whatever programmes that we have or need to implement we cannot just we need to implement this without consulting with and getting the buy in from them (referring to the support staff). If we do have these programmes in place we also have to get the buy in from the managers, from the unions which are termed to speak on behalf of the employees. So everything at Rhodes University that want to be successful one have to get the 'buy-in' from the Unions and from the staff associations."-SSI-4
The holistic approach	<i>"It needs to be a total holistic approach and many people do not want to make that shift. It is one of the worst things for them to control to get into an exercise programme, don't even talk about that."</i>-SSI-2
Health education	There is a need to educate individuals on healthy lifestyle behaviours: <i>"And I think, if we think about health education, we think about all the scare stories about smoking but we don't educate people enough...So people need some psycho-education about that (referring to the social impacts of tobacco use, withdrawal and effects tobacco has on health)"</i>-SSI-7
Taking ownership of one's health	<i>"But we encourage that as far as possible because we see people who are committed, who take charge of their disease later on the pills disappear they don't need it anymore because they take control. But is difficult but I don't even want to talk about the abuse of smoking and alcohol (referring to the use thereof amongst the support staff)."</i>-SSI-2
Use 'shock' therapy	<i>"We need to tell them, I believe in shock therapy. What I would do, I would show them statistics, of people and with a certain disease and what it looks like what emphysema looks like, what asthma looks like what cancer looks like, the real picture, the signs and symptoms and show them these are the victims. Showing them physically what it does to a person and telling them that you can die and the terrible effects of smoking that's difficult. Because its legal to smoke, and that makes it more difficult to control because anyone can just go and buy a packet of cigarettes or whatever else they use, and they smoke and their children are smoking passively and that is how they learn from their parents. So I believe in showing them exactly what it does."</i>-SSI-2
Create Interest	Creating interest amongst the participants could be a facilitating factor to a successful workplace health promotion programme: <i>"I don't, uhm, I think interest...Ya"</i>-SSI-1
Use analogies	One of the interviewees used an example to illustrate what she meant: <i>"okay so... the arrive alive campaign is just a wonderful analogy...it says to arrive alive you need to stick to the speed limit you need to not drink and drive and you need to wear your seatbelt" and for those of use... do you drive (she asked the interviewer)? (The interviewer replied "yes")</i> <i>Exactly, and I find that such a useful analogy to talk to people about anything that surrounds tobacco use."</i>-SSI-7
Head knowledge and change in behaviour	Recognise that head knowledge does not necessarily lead to a change in behaviour:

	<i>"As a health practitioner we can think, we can have the head knowledge, and most of the time we will obey the law, but often we think...oh...No we won't. Okay... So that's the one thing that, having the head knowledge and changing behaviour is not necessarily a straight forward thing. That's the one thing."- SSI-7</i>
Recognise the social context	As part of the holistic approach to health promotion, it was recognised that external influencing factors to tobacco use behaviour should be identified and acknowledged: <i>"So it is a very difficult behaviour to change and then as you've indicated, the behaviour is situated in a social context as well...but you can think about graded ways and avoiding social situations where you will more naturally smoke or thinking about what does smoking do? How does it help you to socialize? What does it do for you and unpacking that? So those are all the complex things that for a smoker you need."-SSI-7</i>
Influence perception	When prompted with the difficult and common response given by tobacco users, "We going to die anyway so why should we worry about it?" the interviewee responded: <i>"That is true but it is also about the quality of one's life" you know...we all going to die but the nature of our death I mean a really nasty slow death because of lung cancer and I saw both of my grandparents die because of you know smoking related stuff and everybody got stories about that."-SSI-7</i> <i>"If we tell them that smoking is bad then maybe they will understand why we are trying to make them stop smoking so you need to change the perception of a person about what smoking does for him. That is so difficult."-SSI-2</i>
Acknowledge psychological/emotional stimulus	<i>"Often it's something worrying you or it might be social stimulus, so how do you shift that so that you can then get over that moment feeling you need to smoke"- SSI-7</i> <i>"People are very reluctant to change they also do not like negative information if they have chosen a lifestyle, that is the one they want to stick to it is the one that gives them comfort because we have had lots of excuses of why people smoke"-SSI-2</i> <i>"to control their weight they don't want to be fat, they smoke because they have got anxiety problems, they smoke because their parents smoked or they smoke because it's cool to smoke, so those perceptions and things we need to change"-SSI-5</i>
Acknowledge and be sensitive to their behaviour	<i>"So you could say, often a good psychological thing is to agree but then outweigh, rather than say no no no no no it's not the way to think about it."-SSI-7</i> <i>"Using a bad names they need our support to remove them from that area to come in a positive way to approach them so that is my way on how to deal with the matter in terms of my opinion."-SSI-3</i>
Tobacco use is habitual	<i>"It's habitual, and it's in a social context."-SSI-7</i>
Distracting and healthy activities	One of the interviewees used a personal experience example to suggest ways to finding alternatives when experiencing a tobacco craving: <i>"When she felt that she needed a second smoke she need..."</i>

	<i>I. to step outside and have a little bit of fresh water and just doing that so replacing the activity with another activity can be very useful. Another healthy activity!</i> <i>II. A healthier activity (laughing).</i> <i>III. But whether its chewing gum or what it is some people, you know, different people use different things but it's about what is provoking you to smoke at that point in time and after its anxiety as you say." –SSI-7</i>
Conducting focus group discussions	It is important to explore the participants' initial knowledge related to the topic during the exploratory phase of the research. Each of the key stakeholders including the participants has to be transparent with what he/she is capable of contributing to the participatory programme. These boundaries should be kept: <i>"Be clear about which knowledge you have and what knowledge they have and how to draw from other knowledge that are around. Be honest about what you do know and say to them when you don't know everything. You can't know everything yet. I know this, but I also know how I can make links into other things."-SSI-7</i> The researcher and focus group participants also need to be aware of and be able to manage the group dynamics: <i>"What became clear from the discussion is that we also have behaviour dynamics happening here, we have conflict, and together we need to think about what strategies are there because I am not an expert."-SSI-7</i>

These were the general suggestions made by the SSI participants (the key stakeholders) to conduct an effective workplace health promotion programme on tobacco use, control and prevention.

5.2.3 Findings from Focus Group Discussions

5.2.3.1 The tobacco use control project

The study participants expressed their experiences with tobacco use and its impact on health and the socio-cultural aspects of life. Tobacco use was considered to be expensive, addictive, unhealthy and were said to be influenced by age, culture, emotions, and social pressures. The main themes extracted from the focus group discussions were as follows:

i. The participants identified reasons to why they chose the tobacco project:

The participants were requested to share why they chose the tobacco use control and prevention workplace health promotion programme and what their expectations were. The participants wanted to become more aware of the health effects of tobacco use and felt a strong responsibility towards raising awareness and educating their peers on the topic. Their responses were as follows:

“The reason I chose tobacco was because I want to learn more about tobacco”-FGD-1

“I chose tobacco because one of my family members is troublesome, so I want to learn more so that I could teach him how dangerous it is”-FGD-4

“I wish I could be in a tobacco free society”-FGD-5

“I chose tobacco because I love to help others because I don’t want to watch them go through what my mom went through because she died of tobacco”-FGD-6

“I want to learn more about tobacco to help the people”-FGD-7

“I would like to be a peer educator because I need to help some people learn to get more information. That is when I could help people when they have a problem then I can get information to refer people from where they can get help. I chose tobacco because I am also a smoker, so I want to stop that.” -FGD-8

“I chose tobacco because I got my brothers at home that I want to help”- FGD-9

The participants were asked if they think that it is important to have such health promotion initiatives. The participants responded by expressing the importance to, gain knowledge, share information and educate their peers on tobacco use in the workplace. Their responses were as follows:

“It helps the people around the university because it avoids that problem mustn’t continue...it is to give advice and to get advice from people who are teaching about the HIV’s or all the problems like tobacco”-FGD-8

“I think the information, it helps a lot when you do things and you do not know how harmful they are until someone tells us that they are... knowledge is power, it can liberate you from something that you have been doing for years and you didn’t know that it is dangerous”-FGD-10

Tobacco use is harmful to the health of individuals

The participants identified that tobacco use is harmful to the health of individuals.

“A person that smokes, you not only killing yourself, you are killing the people around you as well because passive smoking is just as bad as smoking...children and babies get affected by the smoke”-FGD-6

The comment made by the FGD-6 participant stimulated a response from another tobacco user in the group:

“Even myself, I used to smoke... ‘the rolling one’ (referring to the more cost effective roll-your-own tobacco cigarette) when I am getting drunk... because I want to get that high... but I don’t smoke amongst the persons in the house”-FGD-11

The participants started to continue the conversation amongst themselves without constant probing from the interviewer. It was noticed that there was some confusion about how tobacco harms the body and which tobacco product is more dangerous than the other:

“I think the pipe is less dangerous than the cigarette because the pipe has a filter inside it keeps all that chemicals in the pipe so a lot of danger is not there with the pipe where with the cigarette it is straight through (referring to the inhalation of tobacco smoke into the body).”-FGD-6

One participant explained that the tobacco smoke lifts straight from his mouth to his brain without passing through other organs and the smoke dwells in his head to give him relaxation. He then asked the question, *“Does it really happen like that?”-FGD-11* pointing swiftly with his fingers from mouth to the top of his head.

Tobacco was considered to be an expensive commodity that is addictive and which causes conflict in households.

“Tobacco is expensive and when they start they feel that they are addicted and you will find that they (referring to tobacco user) will take your bread money and buy tobacco instead. I comes to the stage where you can’t leave money lying around. So it just causes a lot of conflict within the house.”-FGD-3

“I knew a guy who come to work with a packet is cigarettes in a canton and when he goes home it will be only two packets of cigarettes.”-FGD-11

“I buy (naming a specific brand of tobacco cigarettes) today, tomorrow it is finished and when I smoke, I don’t think about the risk I just put it behind me.”-FGD-8

Social and cultural influences of tobacco use (in the isiXhosa culture specifically)

A participant commented that the use of tobacco in front of children is inappropriate. It negatively influences children to experiment with the use of tobacco in the absence of adult supervision:

“You do see the younger ones up in the location and see the older ones trying to smoke...the way they do it is so cool... We were young so 12 or 13. We used to take a newspaper or the ‘Yellow Pages’ (local telephone directory) and then we go to the bushes and we find dried leaves. I was growing up in the rural areas, they used to take cow dung dry it and just put it in there (referring to the newspaper of ‘Yellow Pages’) just to mimic them from...we used to just smoke a plain paper just to get a feeling of what was going on. To me as an adult smoking in front of children you end up killing them because they were not present when we smoked the paper and in that paper there in smoke, ink chemicals these possible dangers... some of us used to be so sick, we got chest pains and migraines. It brings a negative influence.”-FGD-3

Community members influences tobacco use through sending youth to buy tobacco products for the elders:

“when you send your child to buy tobacco for you, you are training them because they use to send us and when we buy it we pretend to smoke when it is not even lit up...everyone where I grew up used to do it...and some of these guys are still smoking (in adulthood)”-FGD-3

"I was smoking to have fun with my friends...you starting as a peer pressure and then you graduate from a paper to cigarettes to weed to drugs"-FDG-3

"When you are a kid...you like to see the oldest people that are smoking so when you see that older people smoking then you see that it is nice. When you start once, take one cigarette, rolling the papers...it's not easy for you to stop. I started smoking when I was 15 years old now I am 48 years old but I am still smoking"-FGD-8

Emotional triggers of tobacco use

"When I started work... when I came back, Jesus Christ I was smoking and then my head was coming like this (pointing to his head) like there is something inside my head (referring to anxious feelings) and when I take one cigarette... I don't know how many will come after that (referring to taking more cigarettes after that) that's the problem I have. I don't know how I can stop"-FGD-8

"it's the stress... as soon as you take that first puff it feels like your like is coming back into place again"-FGD-6

"My daughter smokes and she always when she is upset with the drivers on the road. It lessens her stress and I can't see that, I really can't see that."-FGD-6

Tobacco use, age and culture

It is considered inappropriate for youth to smoke tobacco in front of elders:

"in Xhosa, no... its illegal you can't smoke in front of an elder so you kind of envy the Coloured people (referring to the mixed-race population in South Africa) when you see a young man of young boy smoking in front of the father. Culturally we are not allowed to smoke in front of elders so we steal it."-FGD- 3

Traditional healers influence the use of tobacco:

"but then again, it's like when you have your traditional healers amongst you, it used to be encouraged to smoke to rise up the ancestors it's a cultural thing. So culturally it depends on where you grew up in because we used to see women smoking outside so you knew when you are a woman you can smoke. So you can't wait to be a woman."-FGD-2

"I was talking about the age, you have to be a certain age to smoke."-FGD-3

“From high school to tertiary I smoked. Another thing I think contributing to smoking is availability cigarettes were not as easily available then as they are now.”-FGD-2

“The distinction between elders and young women was that the elders would smoke and then the young women would not smoke because they need to get to that distinction that they are the elders of the family now”-FGD-2

“An old lady earned the right to smoke, in our culture. It has to do with status. You know that you have achieved it... she is proud.”-FGD-2

The participants then went forth to mention that it is not common for youngsters to use tobacco in their culture and it is therefore unacceptable.

“Our culture seem to define what we do as individuals. I would rather go to my ancestral grounds smoking...”-FGD-3

“We have mixed expectations”-FGD-4

The participants identified culture to be a barrier to influencing healthy behaviour but have identified culture to be evolving:

“This will be a challenge because we are going in, facing all these cultural barriers but culture is evolving”-FGD-5

“There is a cultural shift here...”-FGD-1

5.2.3.1 Understanding the importance of health

The exercise below was conducted as an ‘ice-breaker’ during a focus group discussion, to demonstrate the interrelation between *work, life and health*. All three are important to live a healthy and productive life. The participants understood and identified the link between health and the role that health plays in living a long and productive life.

The participants were requested to respond with the first word that comes to mind when they hear the following words. These were their responses:

a) Life

- i. **Preserve:** Life is precious, and we only get to live once. So, if there are any measurements that are in place or something that you can do to live longer...”-FGD-3
- ii. **Protect:** “Life should be protected, like the Pharmacy Department is doing things to protect us from diseases and illnesses”-FGD-1
- iii. **The spirit of UBUNTU:** “Being there for each other, caring for each other. You are nothing without the next person...humanity.”-FGD-2

b) Health

- i. **Health:** “Keep healthy... and watch your own health, you will have a longer life”-FGD-6
- ii. **Balance:** “Health is spiritual, spiritually you need to be healthy and physically you need to be healthy, emotionally you need to be healthy. You actually need a balance to maintain your life.”-FGD-3

c) Work

- i. **Life:** “Work is part of life.”-FGD-5
“You can’t survive without work. That is why it is a part of life. That’s why even for your health you need to go to the doctor with money”-FGD-7
“It balances your life out. Without work you stress and with stress you could die”-FGD-6
“For the country’s economy also”-FGD-8
- ii. **Earn:** “Means to an end. Make a living”-FGD-4

- iii. **Provision:** “You get to provide for your siblings, your family, you can’t pay labola...”-FGD-3
- iv. **Responsibility:** “Sense of responsibility”-FGD-8
- v. **Marriage:** “It pays labola and when one spouse is not working it kind of puts a strain in the relationship”-FGD-5

5.2.3.2 Phase 1: Development of the HILs

Phase one consisted of the HIL conceptualization, pilot study and content validation. The results of these three processes are as follows:

Conceptualization

The FGD analysis has indicated:

The need for more information on tobacco use control and prevention. The link between tobacco use and health. Smoking has been identified as being the most prevalent form of tobacco use. The participants therefore continuously mentioned the effects of passive smoking on individuals. The tobacco users in the group have requested for means to reduce their use of tobacco. Participants requested to explore and understand the reasons why individuals use tobacco. The barriers to promoting health and tobacco use influences and effects (health, culture, finances, relationships with others and other social factors). That once the information is obtained they would use the for-health promotion activities, “to help others”.

These factors were carefully analysed and three HILs were identified to incorporate all these health challenges and requests. Because of the workplace and culture, these HILs needed to be culturally sensitive and contextually appropriate. It should be noted that whenever the term(s) ‘smoke or smoking’ is used it refers to the smoking of tobacco products only. Three HIL titles were identified with the participants:

- a) ‘Tobacco use and our health’ (HIL 1)
- b) ‘Why do people smoke?’ (HIL 2)
- c) ‘How does smoking affect those around us?’ (HIL 3)

Feedback from colleagues, supervisor and personal scrutiny

After the HILs underwent personal scrutiny, the HILs were handed in to obtain feedback from the health promotion colleagues (peers) and from the principal supervisor. The feedback obtained is outlined below:

- a) Modify graphics, substitute with more relevant, appropriate and clear good illustrations.
- b) Correct grammatical errors
- c) Modify layout to use spacing more efficiently
- d) Modify fonts to be more consistent and easy to read
- e) Separate different sub-topics into different logical columns with appropriate headings

Pilot Study

Pilot study participants were recruited for the evaluation of the second draft. The pilot study was conducted at a central location, and at a time convenient to all participants. A participant invitation letter provided details of the project and the role of the participants. Consenting participants signed the participant consent form before the pilot study started. Participants were provided with the HIL and requested to thoroughly read through it. They were requested to circle any words, phrases, and sentences they might consider difficult to read or understand in the HIL. This was followed by recording the feedback given by the participants for the acceptability and comprehension of the HIL, and included comments on the layout, text, relevance of the pictures used, and the culture sensitivity of the information and pictures used.

I. Pilot study participant demographics

This phase consisted of nine consenting Rhodes University support staff. See Table 14 below.

Table 14: Pilot study participant demographics

Characteristics		Number of respondents
Gender	Male	4
	Female	5
Age (years)	20-30	1
	31-40	4
	41-50	6
	51-60	1
Race	Black	9
Home language	isiXhosa	9
	Shona	-
	English	-
Highest level of education	Grade 10	2
	Grade 11	4
	Grade 12	3
	Tertiary	-
Employed	Full-time	9
Total number of participants		9

II. Acceptability and comprehension questionnaire for HILs results

Table 15: Acceptability and Comprehension questionnaire used to evaluate HILs in Pilot study

Questions asked	HIL 1 Response (%)			HIL 2 Response (%)			HIL 3 Response (%)		
	Yes	No		Yes	No		Yes	No	
Did you understand all the pictures?	77.8	22.2		33.3	66.7		11.1	88.8	
Were any of the pictures culturally or religiously offensive to you?	0	100		22.2	77.8		44.4	55.5	
Were the pictures helpful to you?	100	0		33.3	66.7		77.8	22.2	
Do you think the HIL needs more pictures?	0	100		77.8	22.2		88.8	11.1	
Was the word size easy to read?	100	0		55.5	44.4		88.8	11.1	
Did you understand all the words in the HIL?	88.8	11.1		33.3	66.7		66.7	33.3	
Do you think more information is needed in the HIL?	11.1	88.8		11.1	88.8		55.5	44.4	
What do you think about the amount of text in the HIL?	Too much	Just right	Too little	Too much	Just right	Too little	Too much	Just right	Too little
	0	100	0	22.2	66.7	11.1	11.1	88.8	0
To what extent does this health pamphlet help you understand the risks of tobacco use?	Very helpful			Somewhat helpful			Very helpful		
Do you have any further comments or suggestions?	“Yes, because is not right to smoke in front of child” (referring to the culture and context specific figure 4, located on the cover page on the HIL.)-PSP-2			“Some of the pictures are doing are wrong, you can see right from wrong”-PSP-9			“very wrong, can’t smoke in front of non-smoker”-PSP-4		

5.2.3.3 Phase 2: Content validation, readability and suitability

This phase involved the content validation (self-administered questionnaire, discussion), qualitative (discussion), and quantitative evaluation by the RPEs and healthcare professionals (Suitability Assessment of Materials, Patient Education Materials Assessment Tool, Readability tests, discussion). The feedback received during this phase was included in the modifications for draft two of the HILs.

I. Content validation

The HILs were provided to the five healthcare professionals at the RU HCC to utilize their practical experience in the field and knowledge to validate the HIL content. Each evaluator was provided with a questionnaire (Appendix N). The results are represented in Table 16 below:

Table 16: Feedback obtained from the healthcare professionals (HCP) for HIL content validation

Question	HIL 1: 'Tobacco and our Health'			HIL 2: 'Why do people smoke?'			HIL 3: 'How does smoking affect those around us?'		
	Response % (n)		Remarks	Response % (n)		Remarks	Response % (n)		Remarks
	Yes	No		Yes	No		Yes	No	
Is the information contained in the HIL accurate?	100 (5)	0	"You may add to "what is tobacco- can be inhaled as well"-HCP-4	100 (5)	0	"Was a good idea to way up reasons why people smoke versus the harmful effects smoking may give you"-HCP-4	100 (5)	0	-
Is the information suitable for the target population (RU Support staff)?	100 (5)	0	-	100 (5)	0	"The terminology used is easy to understand"-HCP-4	100 (5)	0	"but be careful of terminology that target group may not understand e.g. chemicals
Would you consider the information contained in the HIL biased?	0	100 (5)	"No, it is not biased. It is suitable for everyone!! Adult and children"-HCP-5	0	100 (5)	-	0	100 (5)	-
Would you consider the information contained in the HIL current and up-to-date?	100 (5)	0	"The use of pictures to explain the effects of tobacco on health is good/shocking"-HCP-4	100 (5)	0	-	80 (4)	20(1)	"the information is current and up-to-date"-HCP-5
Does the information contained in the HIL adequately cover the topic?	80 (4)	20(1)	"Smoking and how it affects the environment is not covered"-HCP-2 "It does cover the topic"-HCP-5	80 (4)	20(1)	"I would put more emphasis on the diseases which are directly caused by smoking e.g. hypertension, cardiovascular accident, emphysema"-HCP-2	80 (4)	20(1)	"It is too general. Many RU staff suffer from hypertension, cancer, cardiac problems and diabetes mellitus. Bring it back to them"-HCP-2 "No, more information needed on the topic. Leaflet too scanty"-HCP-4

Questions	HIL 1: 'Tobacco and our Health'	HIL 2: 'Why do people smoke?'	HIL 3: 'How does smoking affect those around us?'
Any other comments or suggestions?	I. "because smoking is so expensive-it negatively affects our mental health"-HCP-2 II. "The game at the end of the leaflet makes it fun too!!"-HCP-4 III. "Good information"-HCP-5	I. "We do have many staff who are pregnant-what about telling them about low birth weight babies born to pregnant smoking moms?"-HCP-2 II. "Good information"-HCP-5	I. "Statistics are good evidence to change people's behaviour. The prices of cigarettes are not covered"-HCP-2 II. "Good information"-HCP-5

II. African languages expert

The HILs were provided to the African Languages expert for feedback. The African languages expert recommended that the graphics and personal pronouns used be a representation of the HIL end-users and be more contextually appropriate. The graphics were then changed to best suit the African isiXhosa population as this population makes up the majority of the study participants. By making these modifications, the HIL would become more culturally sensitive, appropriate, attractive and more user-friendly. Modifications made according to the African languages expert can be seen in Table 23.

III. SAM and PEMAT results

All three HILs were handed to health promotion colleagues (peers) to evaluate the leaflets for suitability, actionability and appropriateness. The results for all three leaflets for both phases (2 and 4) of development are represented in Tables 17-19.

a) 'Tobacco use and our health' HIL

Table 17: SAM and PEMAT results for the 'Tobacco use and our health' HIL

			Draft 2				Draft 4			
Peer Reviewer			1	2	3	Average Score	1	2	3	Average Score
Evaluation Tool (%)	Suitability Assessment of Materials (SAM)		17.5	17.5	12.5	15.8	45	29	65	46.3
	Patient Education Materials Assessment Tool for Printable materials (PEMAT)	Understandability Score	32.25	25	36.4	31.2	29	30	73.3	44.1
		Actionability Score	0	0	0	0	16.7	16.7	50	27.8

b) 'Why do people smoke?' HIL

Table 18: SAM and PEMAT results for the 'Why do people smoke?' HIL

			Draft 2				Draft 4			
Peer Reviewer			1	2	3	Average Score	1	2	3	Average Score
Evaluation Tool (%)	Suitability Assessment of Materials (SAM)		73.7	45	60	59.6	76	60	72.5	69.5
	Patient Education Materials Assessment Tool for Printable materials (PEMAT)	Understandability Score	83.33	50	60	64.4	86	78.5	90.9	85.1
		Actionability Score	40	40	66.7	48.9	60	100	80	80

c) 'Smoking and the people around us' HIL

Table 19: SAM and PEMAT results for the 'How does smoking affect those around us?' HIL

			Draft 2				Draft 4			
Peer Reviewer			1	2	3	Average Score	1	2	3	Average Score
Evaluation Tool (%)	Suitability Assessment of Materials (SAM)		55	50	57	54	75	82.5	72.5	76.7
	Patient Education Materials Assessment Tool for Printable materials (PEMAT)	Understandability Score	68.7	62.5	75	68.7	81.3	68.8	87.5	79.2
		Actionability Score	66.7	66.7	50	61.1	83.3	83.3	100	88.9

IV. Readability Results

a) 'Tobacco and our Health' HIL

Table 20: Readability results for the 'Tobacco use and our health' HIL

	Readability Formula	Optimal level of Readability	Draft 2	Draft 4
Readability	Flesch Reading Ease Score	60	21.9 (Very difficult to read)	54.9 (Fairly Difficult to read)
	Gunning Fog	< 12	25 (Extremely difficult to read)	14.2 (Hard to read)
	Flesch-Kincaid Grade level	< 12	25.1 (College graduate and above)	13.1 (College)
	The Coleman-Liau Index	< 12	10 (Tenth grade)	8 (Eighth grade)
	The SMOG Index	< 12	11.1 (Eleventh grade)	9.1 (Ninth Grade)
	Automated Readability Index	< 12	30.9 (College graduate)	14.2 (21-22 yrs. Old) (College level)
	Linsear Write Formula	< 12	33.7 (College graduate and above)	17.5 (College level and above)
Readability consensus			Grade level 22: very difficult to read. Collage graduate	Grade 9: Standard/Average for 13-15 year olds.
Word Statistics	Syllables	Total number of words	180	362
		Average number of syllables per word	1	1
		Total percentage of single syllables in text (%)	111	213
		Total percentage of double syllables (%)	58	57
		Percentage of 3 or more syllables in text (%)	6	12
	Font		Calibri	Tw Cen MT
	Font Size		11	14
Graphics	Number of images used		6	10

b) 'Why people smoke?' HIL

Table 21: Readability results for the 'Why do people smoke?' HIL

	Readability Formula	Optimal level of Readability	Draft 2	Draft 4
Readability	Flesch Reading Ease Score	60	65.8 (Standard/average)	67.2 (Standard/Average))
	Gunning Fog	< 12	11.5 (hard to read)	11.2 (Hard to read)
	Flesch-Kincaid Grade level	< 12	10.3 (Tenth Grade)	8.5 (Ninth Grade)
	The Coleman-Liau Index	< 12	8 (Eighth grade)	9 (Ninth grade)
	The SMOG Index	< 12	6.8 (Seventh grade)	8 (Eighth Grade)
	Automated Readability Index	< 12	11.7 (17-18 Yrs. Old) (Twelfth grade)	9.4 (13-15 yrs. Old) (Eighth and Ninth grade)
	Linsear Write Formula	< 12	14 (College)	11.2 (Eleventh Grade)
Readability consensus			Grade 10 (14-15 years old. Standard/ Average reading level)	Grade 9 (13-15 years old. Fairly easy to read)
Word Statistics	Syllables	Total number of words	530	428
		Average number of syllables per word	1	1
		Total percentage of single syllables in text (%)	71	69
		Total percentage of double syllables (%)	24	21
		Percentage of 3 or more syllables in text (%)	5	10
	Font		Arial	Franklin Gothic Book
	Font Size		9	11
Graphics	Number of images used		13	11

c) “How does smoking affect those around us?” HIL

Table 22: Readability results for the 'How does smoking affect those around us?' HIL

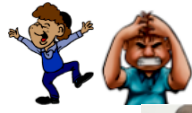
	Readability Formula	Optimal level of Readability	Draft 2	Draft 4
Readability	Flesch Reading Ease Score	60	16.7 (very difficult to read)	54.7 (Fairly difficult to read)
	Gunning Fog	< 12	30.1 (Extremely difficult to read)	15 (hard to read)
	Flesch-Kincaid Grade level	< 12	28.2 (College Graduate and above)	13.4 (college)
	The Coleman-Liau Index	< 12	7 (Seventh Grade)	7 (Seventh Grade)
	The SMOG Index	< 12	13.3 (College)	9 (Ninth Grade)
	Automated Readability Index	< 12	33.1 (College Graduate)	14.5 (College Graduate)
	Linsear Write Formula	< 12	40 (College Graduate and above)	18.1 (College graduate and above)
Readability consensus			Grade Level 24: Very difficult to read. College level	Grade 12: Fairly difficult to read. 17-18 year olds
Word Statistics	Syllables	Total number of words	416	408
		Average number of syllables per word	1	1
		Total percentage of single syllables in text (%)	25	66
		Total percentage of double syllables (%)	67	26
		Percentage of 3 or more syllables in text (%)	8	8
	Font		Arial	Arial
	Font Size		12	14
Graphics	Number of images used		10	10

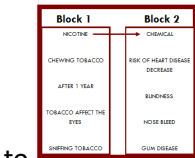
The readability consensus scores have improved for all three of the HILs and so have the Flesch-Kincaid Grade Level formula scores. The SMOG Index scores, however, only improved for the ‘Tobacco and our Health’ and ‘How does smoking affect those around us?’ HILs.

V. Modifications made according to FGD feedback and African languages expert

The participants were provided with draft 2 of the HILs. These HILs were used to explore their health information needs and make modifications. The modifications made to produce the third draft of each HIL are represented in table 23 below.

Table 23: Modifications made according to FGD feedback and African languages expert

HIL design aspects		Modifications made	Participant feedback
Folding options		From Z-fold to Trifold	"I think the trifold design reads better than the Z-fold design"-FGD-3
'Why do people smoke?'	Panel 1: Cover graphic	 changed to 	"I see a very small guy smoking"-FGD-3 "and I see someone that very upset dude"-FGD-6 Participants collectively and African Languages Expert referred to the pictured being cartoons and mentioned that it is not appropriate for the end-users.
	Panel 2 :Summary of Myths: "People might smoke because:"	 changed to 	Participants agreed that the myths mentioned is true. "this is actually true"-FGD-3 "models of that, they smoke to lose weight... makes them loose appetite...models they do that" (referring to the myth of smoking makes you look attractive) attractive-FGD-7 "Some mix smoking with coffee to lose appetite"-FGD-12 "smoking makes you cough all the time"-FGD-7 African Languages Expert referred to the pictured being cartoons and mentioned that it is not appropriate for the end-users.
	Panel 3: Explanation of how nicotine works in body and symptoms of withdrawal	The layout was improved. Cartoons were removed.  changed to 	Agreed to the content on this panel. "When he doesn't smoke he is angry but when he smokes it calms him down" (referring to personal experience from a friend)-FGD-4 "I think it is true"-FGD-3 "when you smoke, that goodness that you get is because of the nicotine"-FGD-8
	Panel 4-6	Cartoons were changed to more appropriate images:  changed to	African Languages Expert referred to the pictured being cartoons and mentioned that it is not appropriate for the end-users. The participants agreed that the content is appropriate and suggested no changes. "Play sport"-FGD-8

		 The other changes that were made can be seen (Appendix H)	
HIL design aspects		Modifications made	Participant feedback
'Tobacco use and our health'	Panel 1-6	Modifications made:  changed to  changed to 	Participants did not suggest any changes to be made on this leaflet. The only changes that were made was those suggested by the African Languages Expert. It was noticed that the participants were not familiar with the game on panel 6. It was therefore decided to change it. The image on panel 4 was included because the participants collectively suggested having a picture of a human body with arrows pointing towards the areas where tobacco has health effects.
'How does smoking affect those around us?'	Panel 1-6	Modifications made:  changed to 	Participants collectively and the African languages expert referred to the pictures being cartoons and mentioned that they are not appropriate for the end-users.

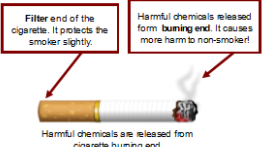
5.2.3.4 Phase 3: Development of the fourth HIL draft

The modifications made during this phase of the HIL development process represent the production of the fourth draft of each HIL. The changes made during this phase were influenced by the language editor, graphic design specialist and the principal supervisor.

The readability, SAM and PEMAT results for the fourth draft are represented under Phase 2 of the development process and can be seen in Tables 17-23. The changes made by the graphic designer can be seen in Appendix H. The final modifications made are represented in the table below:

Table 24: Representation of the modifications made during the development of the fourth HIL draft (Appendix H)

HIL design aspects		Modifications Made	Participant feedback
'Why do people smoke?'	Panel 1: Cover graphic	 changed to  These graphics were removed because the words used to describe them were clear and did not require additional illustrations to clarify them: 	The principal supervisor suggested a more appropriate cover graphic.
	Panel 4		This picture was removed because it was considered to be inappropriate as it did not represent the isiXhosa culture
	Layout	Layout of graphics and text was changed	Graphic designer prompted the change
'Tobacco use and our health'	Panel 1-6	 changed to 	This picture was removed by the graphic designer because it was represented twice. The other image of tobacco snuff was kept.
	Layout	Layout of graphics and text was changed	Graphic designer prompted the change

HIL design aspects	Modifications made	Participant feedback
'How does smoking affect those around us?'	Panel 1-6  changed  to Second-hand smoke is more dangerous than smoking  - The smoke that burns off at the end of the tobacco product has more harmful chemicals than the smoke breathed in by the smoker Harmful chemicals are released from cigarette burning end  Cigarette filters - This is because there is no filter at the burning end of the tobacco product Changed to  Filter end of the cigarette. It protects the smoker slightly. Harmful chemicals released from burning end. It causes more harm to non-smoker! Harmful chemicals are released from cigarette burning end - This is because there is no filter at the burning end of the tobacco product Panel Four was removed and replaced with Some effects of second-hand smoke on Non-Smokers  X unhealthy lungs when breathing in tobacco smoke  X Harmful, fatty substances build up in the blood vessels when constantly breathing in harmful substances The longer you breathe in second-hand smoke the more harmful substances build up in your body!	This modification was made because it was inappropriate to the end-users and unclear. It was suggested that a clearer representation of the cigarette and its parts should be used and that the text was complicated. Panel four had a table representing stages of lung and heart damage due to tobacco use. This change was suggested because the Draft 3 version appeared to be more complex, text dense and difficult to understand. It was also changed because the participants suggested that the use of pictures tend to be more effective. So, the text was substituted for more explanatory images.
Layout	Layout of graphics and text was changed	Graphic designer prompted the change

5.2.3.5 Phase 4: Readability, SAM and PEMAT

The results for this phase is represented under Phase 2 in tables 17-23

5.2.3.6 Phase 5: HIL implementation and workshops

Table 25: Comparison of Pre-, Post- and post-post-intervention Knowledge on 'Tobacco and our Health HIL' among the intervention group

Title of the Leaflet	Question	Answer options provided	n (%)			Frequency (%) correct answers. [n (%)]		
			Pre-Intervention	Post-Intervention	Post-Post Intervention	Pre-Intervention	Post-Intervention	Post-Post Intervention
Leaflet 1: 'Tobacco and our health'	Does chewing tobacco and using tobacco snuff harm our health?	Yes, chewing tobacco and using snuff is harmful to our health	21 (65.625)	27 (84.375)	13 (81.25)	21 (65.625)	27 (84.375)	13 (81.25)
		No chewing tobacco and using snuff are not harmful to our health	3 (9.375)	3 (9.375)	3 (18.75)			
	Is smoking tobacco harmful to the whole body?	Yes	24 (75)	29 (90.625)	14 (87.50)	24 (75)	29 (90.625)	14 (87.50)
		No	8 (32)	1 (3.125)	2 (12.5)			
	Does tobacco smoke contain harmful chemicals?	Yes	26 (81.25)	30 (93.75)	15 (93.75)	26 (81.25)	30 (93.75)	15 (93.75)
		No	4 (12.5)	1 (3.125)	1 (6.25)			
	It is not possible to stop using tobacco?	True	3 (9.375)	6 (18.75)	3 (18.75)	29 (90.625)	26 (81.25)	13 (81.25)
		False	29 (90.625)	26 (81.25)	13 (81.25)			
	Quitting smoking can make us healthier	No, Quitting will not make us healthier	3 (9.375)	0 (0)	0 (0)	25 (78.125)	29 (90.625)	16 (100)
		Yes, it is never too late to quit	25 (78.125)	29 (90.625)	16 (100)			
Mean ± s.e.	-	-	-	-	-	78.13 ± 4.07%	88.13 ± 2.30%	88.75 ± 3.64%

n: The number of participants who attempted to answer the question

Frequency: No. of participants who answered the question correctly

Pre-intervention: No. of participants who answered the questions correctly during the pre-intervention quiz

Post-intervention: No. of participants who answered the questions correctly during the post-intervention quiz

Post-Post-intervention: No. of participants who answered the questions correctly during the post-intervention quiz

Table 26: Comparison of pre-, post- and post-post intervention knowledge on 'Why do people smoke tobacco? HIL' among the intervention group

Title of the Leaflet	Question	Answer options provided	n (%)			Frequency (%) correct answers. [n (%)]		
			Pre-Intervention (32)	Post-Intervention (32)	Post-Post Intervention (17)	Pre-Intervention	Post-Intervention	Post-Post Intervention
Leaflet 2: 'Why do people smoke tobacco?'	Why do people begin to smoke?	To relax	2 (6.25)	1 (3.125)	2 (11.76)	18 (56.25)	25 (78.125)	13 (76.47)
		Because they are bored	3 (9.375)	0 (0)	0 (0)			
		Their friends smoke tobacco	6 (18.75)	2 (6.25)	0 (0)			
		All of the above	18 (56.25)	25 (78.125)	13 (76.47)			
		Other reasons	3 (9.375)	3 (9.375)	2 (11.76)			
	Is tobacco really addictive?	No, tobacco is not addictive	2 (6.25)	1 (3.125)	0 (0)	28 (87.5)	30 (93.75)	17 (100)
		Yes, tobacco is addictive	28 (87.5)	30 (93.75)	17 (100)			
	Who is most likely to become addicted?	School children	3 (9.375)	1 (3.125)	2 (11.76)	28 (87.5)	29 (90.625)	14 (82.35)
		Only people in the workplace	1 (3.125)	1 (3.125)	1 (5.88)			
		Anyone can become addicted	28 (87.5)	29 (90.625)	14 (82.35)			
	What does nicotine do to the tobacco user?	Nicotine makes our heart work harder	3 (9.375)	1 (3.125)	5 (29.41)	17 (53.125)	25 (78.125)	8 (47.06)
		Nicotine gives a feeling of pleasure	3 (9.375)	1 (3.125)	0 (0)			
		Nicotine makes you addicted to tobacco products	8 (25)	5 (15.625)	4 (23.53)			
		All of the above	17 (53.125)	25 (78.125)	8 (47.06)			
	Stress is not a tobacco withdrawal symptom	True	16 (50)	14 (43.75)	8 (47.06)	15 (46.875)	18 (56.25)	9 (52.94)
		False	15 (46.875)	18 (56.25)	9 (52.94)			
	Smoking can make us less productive at work	True	23 (71.875)	25 (78.125)	17 (100)	23 (71.875)	25 (78.125)	17 (100)
		False	7 (21.875)	7 (21.875)	0 (0)			
Mean ± s.e.	-	-	-	-	-	67.19 ± 7.25%	76.17 ± 5.39%	76.47 ± 9.24%

n: The number of participants who attempted to answer the question

Frequency: No. of participants who answered the question correctly.

Pre-intervention: No. of participants who answered the questions correctly during the pre-intervention quiz

Post-intervention: No. of participants who answered the questions correctly during the post-intervention quiz

Post-Post-intervention: No. of participants who answered the questions correctly during the post-intervention quiz

Table 27: Comparison of pre-, post- and post-post intervention knowledge on 'How does smoking affect those around us? HIL' among the intervention group

Title of the Leaflet	Question	Answer options provided	n (%)			Frequency (%) correct answers. [n (%)]		
			Pre- Intervention	Post- Intervention	Post-Post intervention	Pre- Intervention	Post- Intervention	Post-post Intervention
Leaflet 3: 'How does smoking affect those around us?'	IS there a safe way to smoke?	Yes	3 (9.375)	0 (0)	1 (6.25)	29 (90.625)	31 (96.875)	15 (93.75)
		No	29 (90.625)	31 (96.875)	15 (93.75)			
	How can a person avoid breathing in second-hand smoking?	Ask smokers not to smoke inside buildings	8 (25)	6 (18.75)	3 (18.75)	17 (53.125)	21 (65.625)	10 (62.50)
		Open windows	2 (6.25)	1 (3.125)	0 (0)			
		Avoid areas where people smoke	1 (3.125)	3 (9.375)	3 (18.75)			
		All of the above	17 (53.125)	21 (65.625)	10 (62.50)			
	How does cigarette smoke affect the lungs of a second-hand smoker?	Cigarette smoke is not harmful to the second-hand smoker	0 (0)	1 (3.125)	0 (0)	28 (87.5)	29 (90.625)	16 (100)
		Smoking makes the lungs black and makes it hard to breath	28 (87.5)	29 (90.625)	16 (100)			
	Money spent on tobacco can be used for basic family needs such as:	Food	2 (6.25)	1 (3.125)	0 (0)	23 (71.875)	27 (87.10)	15 (93.75)
		Education	0 (0)	2 (6.25)	1 (6.25)			
		Healthcare	3 (9.375)	1 (3.125)	0 (0)			
		All of the above	23 (71.875)	27 (87.10)	15 (93.75)			
		None of the above	1 (3.125)	0 (0)	0 (0)			
	Tobacco smoke from the burning end of the tobacco product is not harmful to the non-smoker.	True	11 (34.375)	9 (28.125)	3 (18.75)	17 (53.125)	22 (68.75)	13 (81.25)
		False	17 (53.125)	22 (68.75)	13 (81.25)			
Mean ± s.e.	-	-	-	-	-	71.25 ± 8.05%	81.80 ± 6.19%	86.25 ± 6.67

n: The number of participants who attempted to answer the question

Frequency: No. of participants who answered the question correctly.

Pre-intervention: No. of participants who answered the questions correctly during the pre-intervention quiz

Post-intervention: No. of participants who answered the questions correctly during the post-intervention quiz

Post-Post-intervention: No. of participants who answered the questions correctly during the post-intervention quiz

5.2.4 Researcher observations

The participants were actively involved in the open discussions. It was observed that the participants understood the content covered and contributed to the discussions effectively. However, on presentation of the pre- and post-intervention questionnaire, some participants had difficulty reading, processing and responding (in writing) to the printed questionnaire. The researcher constantly made use of common analogies such as; “the body is a car, it needs to be taken care of properly for it to work well and it needs clean fuel” (representing and demonstrating what could happen when harmful chemicals from tobacco products are ingested into the body).

5.2.5 Translating health information

After the role play the peer educators had a shared suggestion referring to the use of a HIL: *“First approach without the leaflet, when I went there, I was like myself, they were more interested, and they were not bored... Direct approach does not work, you can’t just give them the leaflet or tell them to stop smoking”* referring to the importance of engaging with the end-users instead of just providing them with health information. After the participants conducted the role play they collectively came up with a guide to performing a health promotion activity related to tobacco use that is culturally sensitive and contextually appropriate:

1. Hand out the leaflet
2. Explain the HIL based on your personal experience
3. Make use of the illustrations in the HILs to reinforce the text
4. Evaluate the readiness for behaviour change.
5. Don’t be judgemental
6. Be aware of potential communication barriers
7. It is important to listen, ask questions and have a conversation with them. ‘Read them’
8. Use the local language, if possible
9. Acknowledge the positive behaviours
10. Be aware of influences (family, culture, peers)
11. Distribute HILs through social media
12. Use the HIL to have talks with youth (e.g. in schools) as well
13. Use the leaflets during World No Tobacco Day
14. Be a role model!

5.3 Programme evaluation: final focus group discussion

The final FGD was open-ended and unstructured where the participants shared their experiences, effectiveness of the programme and how they integrated what they have learned into their current role as a Peer Educator, what the challenges were with do so and how did they overcome these challenges.

Question: Did you learn anything from the workplace health promotion programme? Did you include it into your work and how did you do so?

"I have learned one thing from the workshop about being a second-hand smoker. So now...I am more vigilant and try to avoid second hand smoke as much as I can when I see someone who is smoking."

This participant recognised that the programme assisted him/her in recognising the dangers of second-hand smoking and can be more vigilant of smoking related health risks. The information aided the participants to take care of their health better.

The next participant identified himself to be a smoker during the first FGD and this is what he learned from the workshop:

"I, as a smoker, I did not know that there is a 'cure' for smoking and your lungs become black and breathing heavier than the usual, than normal."

He acknowledges that the programme aided to raise awareness about the tobacco related health aspects and for both these two participants it helped them become more aware of their health.

Question: The participants had to translate what they have learned from the workplace health promotion workshops to their fellow support staff members and the Peer Educators who did not attend the workshops. The researcher then probed for them to comment on their experiences with doing so. These were some of the responses:

"How can I say that... you know when you have to translate information, in a way it gives a good feeling, that empowering feeling that you know something and that it is something that is very helpful that you can share with others. Because we know when it comes to smoking... there are so many myths that go around and that you can able to say, "but it doesn't go like that". If I smoke a certain amount, it will be unhealthy. Just to have that information to see

that health wise, it is affecting you... It even shed the light on second-hand smoking” (acknowledging what another fellow participant mentioned).

The participant acknowledges the importance and usefulness of obtaining health information and the role it plays in translating health information with the intention to promote health and prevent tobacco related health conditions. She refers to obtaining helpful information and sharing that information with others as a form of empowerment.

In some cases, the programme stimulated the participants to improve their knowledge base on the use, effects and prevention of tobacco use. The following participant commented as follows:

“Personally, I have learned a lot about smoking. I did more ‘underground research’ because my parents are smokers. To find out why and how the smoking was.”

The following question was asked: What was challenging in transferring this information to others?

“It is not easy... they say of effects of their finances and work, but I basically just tried to educate them on how to be more healthy.”

“Another thing I have noticed to people I have been talking to ... They seem to think that they are in control of what they are doing when they are smoking... when you start to ask questions, you realize what effects smoking does to your body. It is only then that they now start to be more cautious.”

This participant identified that it was through asking questions and engaging with tobacco users that she could understand their behaviour and to influence healthy behaviour. This approach to promoting health is crucial and it is something that they were exposed to during the workplace health promotion workshops.

Question: When you spoke to them... how did you overcome communication barriers?

“I have a friend...oh... she is a heavy smoker and I thought... how am I going to speak to her because I can’t just go to her and say, “you have to stop smoking” and she smokes like two packets of cigarettes a day. So, the best thing I could do was to take the package (referring to the workplace health information workshop resource pack containing the HILs) and play

around with it because it got that picture of the brown lungs and from the experiment (referring to the infographics used in the HILs and the 'lung experiment' video used during the workshop). The only way to get her was to say, "joh, choma (slang for friend), your lungs is going to be like that" and I pointed to the picture in the pamphlet. It was up to me to remind her, not to stop but trying to reduce (referring to tobacco smoking behaviour)."

This participant commented on the way she thought best to use the health information material developed and acknowledged that the use of graphics and videos play could be an effective health promotion tool. She used this technique to approach one of her tobacco using friends. She acknowledged how the use of pictures improved the user-friendliness of the HILs:

"So, I think the picture thing, on the pamphlets, is actually working more than the words because not everyone can read."

The participant also found the HILs and health promotion techniques discussed during the workplace health promotion workshops useful in educating their close relatives:

"I also use it to educate my children and my parents"

Some participants also referred to how this programme has affected their relationships with their peers:

"My friends (referring to colleagues at work), when smoking and they see me they 'dab' (extinguish their cigarettes) and put them away under stones. So, when they see me they say, "oh...that guy (referring to himself-the peer educator) is coming and they dab their cigarettes and put their matches (items used to ignite a cigarette) away."

The peer educators developed a sense of ownership of the workplace health promotion programme and applied what they have learned and experienced during the programme in their daily lives.

"I think it is very important for us as Peer Educators to push this (referring to the workplace health promotion programme) with our own. We are going to organise health talks in our kitchens (referring to University dining halls) and with our close ones, family, friends and all that..."

5.4 The outcomes of the workplace health promotion tobacco peer educators manual

Feedback obtained when FGDs were conducted with the participants on the first draft of a peer educators manual, was that they found the manual to be too text dense, and that it was not a user-friendly medium of education. Taking into account that the peer educators could be classified as a low- to semi-literate population, it was therefore decided that a workplace health promotion workshop would be more appropriate medium through which to implement the HILs that had been developed. The first draft of the trainer's manual was therefore not completed (See Appendix I). The HILs were also re-organised in the form of a poster to be placed in various areas on the University campus to raise awareness (See Appendix Q).

5.5 Conclusion

Chapter five has outlined the thematic analysis and the scientific end-user testing outcomes. This chapter also presents the outcomes from the process of developing, implementing and evaluating the workplace health promotion workshops. Chapter five included participant suggestions for conducting a comprehensive workplace health promotion programme on tobacco use and it demonstrated the outcomes of a collaborative peer educator approach to health literacy development. In the next chapter, the research outcomes will be discussed relative to existing literature.

CHAPTER 6: Discussion

6.1 Introduction

The intervention described in this thesis resulted in a significant improvement in the tobacco-related health knowledge of the Rhodes University Peer Educators. The intervention also produced scientifically tested, tailored, culturally sensitive and contextually appropriate health information materials through the utilization of a participatory action research approach guided by the WHO WHP Framework. This chapter will discuss how research results compare to and contrast with published research. This chapter will discuss workplace health promotion influencing factors, the development of HILs, health empowerment and social capital, and the use of the WHO WHP Framework to encourage engaged collaborative leadership development.

6.2 Workplace health promotion

A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety, and wellbeing of all workers, and to ensure the sustainability of that workplace (WHO, 2015c). The findings of this study correlated with the WHO definition of what a healthy workplace should comprise of. This study facilitated collaboration between stakeholders in the workplace to promote health and wellbeing which could in turn decrease the effects of tobacco related diseases on work productivity, absenteeism and profitability of the Institution. The positive outcomes of this study also concur with that of other studies (Baicker, Cutler, & Song, 2010; Bertera, 1990; Dellve et al., 2007; Eng, Moy, & Bulgiba, 2016; Justesen, Eskerod, Christensen, & Sjøgaard, 2017; O'Donnell, 2002; Pescud et al., 2015; Yen, Schultz, Schaefer, Bloomberg, & Edington, 2010).

6.2.1 Workplace health promotion policies

To support the efforts made by the Alma Ata Declaration and push the agenda of health promotion initiatives in the workplace, the development of comprehensive, sensitive and contextual health promotion policies could be the first step. Health promotion policies were, however, not common at Rhodes University but by the time the current study ended, the HIV/AIDS Officer's designation changed to Institutional Wellness Specialist with the intention of extending the HIV/AIDS awareness programme to encompass other institutional health challenges, like NCDs and its four major risk factors. These institutional changes are an

indication of how the link between policy and practice was achieved within the time frame of the current study. These institutional changes were also facilitated through constant interaction with institutional management and the cumulative efforts of four health promotion projects on the four modifiable NCD risk factors: Tinatsei Chigumete “*Workplace Health Promotion: A Case Of Rhodes University Support Staff*”, Fadzai Mushoriwa “*Health promotion: Approaches to dietary salt reductions*”, which proceeded the current study by one year; and Praise Marara “*Workplace health promotion: Harmful use of alcohol*”, which ran parallel to the current study. The majority of the participants in this study have identified that they were not aware of any health promotion policies at Rhodes University and the same could be said for tobacco control and prevention policies. The lack thereof resulted in health promotion activities that were not as effective and sustainable. The participants also considered that having these health promotion policies in place, specifically those focusing on NCD risk factor control and prevention (such as tobacco use), could be beneficial to the workplace. It could be useful to raise awareness and execute those policies that do exist within all levels of the institution. The implementation of workplace programmes that are policy-based has proven to be useful in other institutions as well (Barclay, 2015; Després, Alméras, & Gauvin, 2014; Dooris & Hunter, 2007).

6.2.2 The challenges to workplace health promotion

This study explored the various factors that affect the success of a workplace health promotion initiative. The factors identified were: exploring, acknowledging and synergizing employer and employee expectations and demographical backgrounds; lack of interest; the non-existence of a health promotion facilitator; and conducting health promotion activities that are effective and sustainable. Some of these factors were also identified under the ‘Anticipated mobilization challenges’ identified within the methodology section of this study (Chapter 3.10).

Literature indicates that more research could be done on the factors that influence participation (Harden, Peersman, Oliver, Mauthner, & Oakley, 1999; Nöhammer, Stummer, & Schusterschitz, 2014). It is ultimately through understanding these influencing factors that interest in programme participation could be developed. These factors were then addressed in the current study by following an interdisciplinary approach to health promotion. Both the employees and employers were therefore engaged during the development and

implementation of the health promotion project and, once their needs were identified, their interest in participation improved and they took ownership of the project which was also identified in Pescud et al. (2015). This approach was recommended by the WHO Workplace Health Promotion Framework as a key step during the mobilization phase of the research project (Punnett et al., 2009; WHO, 2011) and also proved to be effective in the current study. Sustainability was also recognised by the participants in the current study as a challenge to health promotion programmes at the institution. The already established and well-functioning HIV/AIDS awareness Peer Educator programme was therefore utilized as the 'piggyback' strategy for the current study. This programme provided the foundation for the workplace health promotion project on tobacco use, and it also aided with the sustainability of the programme.

6.2.3 The facilitating factors to workplace health promotion

The participants of this study identified 19 main themes (refer to Table 13 on page 108) that they regard as important considerations when planning and implementing a workplace health promotion programme on tobacco use. These factors concurred with some of the factors identified in a scoping review (Weiss, Liliefjell, & Magnus, 2016). The 19 main themes were collapsed into 9 sub-headings discussed below.

6.2.3.1 Obtain 'buy-in' from institutional management

The extent to which the employer is involved in a health promotion programme could either facilitate or constrain the development of the programme. It was therefore suggested by the participants in this study that the management of an institution should be carefully approached and convinced of the importance of implementing a workplace health promotion programme and of the benefits that it might have for the institution (e.g. improved productivity, decreased medical expenses to name a few). Engaging both management and staff is essential to the sustainability of the programme and to ensure a good response rate to the activities planned. This approach to health promotion sustainability is also supported by the findings of other literature sources (Aldana et al., 2012; Eng et al., 2016; Glasgow, McCaul, & Fisher, 1993; Pescud et al., 2015; Rager, Leutzinger, Hochberg, Kirsten, & Chenoweth, 2008).

6.2.3.2 The need for health promotion facilitators

Assigning a responsible health promotion officer or body was suggested as a workplace health promotion facilitating factor. The participants in the current study expressed a need for professional individuals to facilitate comprehensive workplace health promotion programmes. Literature, however, has indicated that a more effective way of assigning a health promotion facilitation body was to identify and investigate already existing well established programmes at the institution of choice and utilize such programmes (as a 'piggyback' strategy) to conduct more sustainable well-functioning workplace health promotion programmes (Eng et al., 2016; Fertman, 2015). The current study utilized the same principles and instead of assigning this responsibility to a single individual or entity, the participant needs were addressed through facilitating shared responsibility across an interdisciplinary platform consisting of both managers and the institutional HIV/AIDS awareness Peer Education programme. This strategy improved the efficacy and efficiency of the workplace health promotion programme on tobacco use as well as the three other comprehensive health promotion projects. The 'piggyback' strategy was also useful because it reduced the HIV/AIDS stigma related to the Peer Educators as they are now seen as promoting healthy living and not only HIV/AIDS related aspects.

6.2.3.3 Conduct a baseline study

To build resilience through conducting a comprehensive workplace health promotion programme on tobacco use and prevention, the status of the institutional factors can be investigated. The exploratory phase within the current study therefore focused on exploring the foundational tobacco-related health knowledge, practices, health beliefs, institutional structures, successes and failures of past health promotion programmes, and the facilitating and constraining factors to developing effective comprehensive workplace health promotion programmes. Exploring the status of the current study context demonstrated to clarify current practices and beliefs at the institution and provided the platform to build a rational workplace health promotion programme. Conducting a needs and contextual assessment is a key component to developing and implementing a successful and sustainable workplace health promotion programme. These strategies are also suggested by other studies (A. Lee, Chan, Ho, Wong, & Ng, 2004; Wright, Williams, & Wilkinson, 1998).

6.2.3.4 Having organizational structures in place

Organizational structures should propagate the organizational elements that represent the ways in which people come together to socialize and address their concerns. It is a way for individuals to come together, to identify problems, and to plan action to resolve the problems. The current study participants identified that organizational structures would allow for the analysis of policies and the implementation of sensitive and appropriate policies to prevent the radical implementation of policies and workplace health promotion programmes which could be detrimental to the institution in the end (please refer to section 5.3). Having functional organizational structures in place could also promote future sustainability of a workplace health promotion programme. The WHO Workplace Health Promotion Framework reinforces this strategy to promote health in the workplace and it was kept as a core component of this research study. This approach to health promotion was also reinforced within other health promotion studies and frameworks (WHO, 2011; CDC, 2016b; Henning, Warren, Robertson, Faghri, & Cherniack, 2009; Laverack, 2004; Kumar & Preetha, 2012).

6.2.3.5 Interdisciplinary participatory approach

Universities are known to function as isolated, discipline-specific departments, incentives and mechanisms (Unger et al., 2003). In the current study, through the utilization of an interdisciplinary approach to health promotion (on a topic that required interdisciplinary thinking), synergizing efforts for the acknowledgement of both employee and employer expectations became easier. Participants needed to see their employees acknowledge and prioritize their health needs and work together with them to develop an action plan to improve their health and wellbeing for the greater good of the institution. It was therefore useful to explore multiple contextual levels of tobacco use to produce a more complete picture of the total cultural context. This method allowed for the researchers to investigate tobacco use on a micro level (intrapersonal and interpersonal influences) (Unger et al., 2003). This approach to tobacco use research has also been recognised by other studies and South African Universities and suggests the application of an interdisciplinary approach to tobacco use control and prevention programmes (Bazzani, Sánchez, Bazzani, & Sánchez, 2016; Bulotaitė et al., 2017; Ricketts & Kaluzny, 1987; Unger et al., 2003; UWC, 2017).

6.2.3.6 The holistic approach

The 1986 Ottawa Charter of health promotion outlined health to be (WHO, 1986):

“...Created and lived by people within the settings of their everyday life; where they learn, work, play, and love.”

In order to stimulate healthy workplace settings, it's essential to recognise that the place or social context in which people engage in daily activities and their environmental, organizational, and personal factors interact to affect their health and wellbeing (WHO, 1998). The participants in this study have recognised and suggested that a holistic approach be adopted when planning and implementing the workplace health promotion programme on tobacco use control and prevention. To address the participant needs in this study, the researcher therefore investigated and explored these factors (e.g. social determinants of health and workplace factors that influence health) during the FGDs with the participants in the exploratory phase of this study (Section 4.3 of this thesis). The factors specific to the study population were then included in the health information materials (e.g. culture, peer pressure, financial pressures associated with tobacco use, social media influences, family, mental health influencers - such as workplace related 'stress' - and other personal factors). These factors were all incorporated in the HILs and health promotion workshops specifically with regards to tobacco use. The WHO and other sources of literature also emphasized the importance of adopting a holistic approach when conducting health promotion activities (WHO, 2017a; Berg & Sarvimäki, 2003; Kumar & Preetha, 2012; Lardon, Soule, Kernak, & Lupie, 2011; Steenbeek, 2004).

6.2.3.7 Utilizing 'shock' therapy and appropriate analogies

Study participants suggested the use of explicit graphical representations and analogies when promoting health and literature supports this strategy (Bruce, 2000; Eng et al., 2016; Gazzinelli et al., 2010; Graham & Brookey, 2008; Lauster, Lauster, & Srivastava, 2013; McNicol, 2017; Park & Zuniga, 2016). They indicated that it would be useful for the health information material and workshops to illustrate the effects that tobacco use has on their health. To address the participant needs, the researchers incorporated graphical videos, pictures of damaged lungs from tobacco smoke and other physical features affected. With the support and influence of the Health Belief Model included in the Bachelor of Pharmacy curriculum to influence behaviour change, common analogies were therefore made during

the workshops in the current study such as: “the body is a car, it needs to be taken care of properly for it to work well and it needs clean fuel (representing and demonstrating what could happen when harmful chemicals from tobacco products are ingested into the body)”. The results section of this study indicated that it was the concepts that were explained using explicit illustrations and analogies that contributed the most to memory retention (evaluated by the post-post-intervention questionnaire in the results section of this theses).

6.2.3.8 Acknowledge psychological/emotional stimulus and be sensitive

Participants identified that tobacco users are reluctant to change and approaching them with a patronising attitude may not facilitate interaction for discussion and health promotion. It was therefore suggested by the participants in the study that health promotion activities be conducted in a sensitive, non-judgemental and supportive manner. Positive discussion was therefore stimulated in the current study through acknowledging an individual’s current health beliefs and practices and encourage behaviour change through outweighing the risks. Literature also indicates that the tobacco users’ perceptions of their health should be acknowledged, respected and approached in a sensitive manner (Gullotta & Bloom, 2003; Patwardhan & Chewning, 2010; Roberts, Kerr, & Smith, 2013; Trall, 1957). This strategy contributed to making the workplace health promotion programme more sensitive and contextually appropriate.

6.2.3.9 Provide tobacco users with alternative and healthier options to reduce tobacco use behaviour

In the attempt to increase the actionability of the HILs and to respond to the participant needs, one column within each HIL provided healthier alternatives to tobacco use. These strategies are often intended to distract the tobacco user’s cravings and adopt healthier behaviours. Literature also suggests utilizing this method in tobacco control and prevention health promotion activities and has proven to be useful and improved the actionability of the health information material in this study (Health, 2012; Hernandez-Reif, Field, & Hart, 1999).

6.2.4 Cultural factors, attitudes, practices and beliefs that contribute to tobacco use

In order to promote health effectively in the current study, it was important to understand the community's perception of their health and illness, behaviours, and habits that influence their health, and how culture interacts with environment, economics, and politics to affect health, as represented in the results section of the thesis. The cultural beliefs of a specific community influence their healthcare practices and local concepts about illness (Armenakis & Kiefer, 2007). Preventative measures are essential, specifically in the Black isiXhosa South African population where an increased prevalence in the use of tobacco products is observed (Reddy, Zuma, Shisana, Kim, & Sewpaul, 2015). This increase may be largely due to two main factors: 1) increased focus on tobacco use marketing within these populations (Gilmore, Fooks, Drope, Bialous, & Jackson, 2015; K. Lee, Eckhardt, & Holden, 2016) and 2) the evolution of isiXhosa culture (as identified by the study participants under Chapter 4.3).

The dependence on cultural tobacco use may increase the vulnerability of this population to the influence of transnational tobacco companies and actions to prevent such public health disasters are critical. An increase in tobacco use consumption might be due to tobacco use influences from youth to adulthood. It is recognised that adult tobacco use, in this cultural context, influences youth (apart from culture) through: smoking tobacco in front of youth, sending them to shops to buy tobacco products and through creating the idea that the older you are, the more 'rights' you have to use tobacco. Elders within the isiXhosa culture are said to have earned the right and therefore the status to smoke tobacco. It is therefore perceived by youth to be something to idealise and strive towards as they become older. The way in which the elders smoke the tobacco is also perceived to be 'cool' and a picture reference has been made to acknowledge this in HIL 2 (Appendix H). These factors are prompting youngsters to experiment with more unsafe methods of tobacco use in private and has proven to stimulate addiction from this age, despite possible financial constraints in the current study.

The indirect encouragement of tobacco use within the isiXhosa culture from a young age; tobacco products becoming more readily available; and the status perception of tobacco use, were considered as isiXhosa cultural factors that impact tobacco use. It is because of these reasons that the workplace health promotion Peer Educators, in this study, feel hopeful that through desensitizing cultural boundaries and denormalizing tobacco use through consistent health promotion activities, the culture of tobacco use may become less prominent.

This study has demonstrated the importance of understanding and responding to employee wellness and health belief systems and has shown to be beneficial to the workplace. It stimulated critical interaction between employers and employees which could lead to the development of more effective sustainable relationships between the stakeholders. Studies suggests that developers of workplace health promotion programmes should attend to organizational work climate as well as personal health characteristics of employees in an effort to increase programme impact (Sloan & Gruman, 1988). Failure to acknowledge these characteristics may lead to inadequate healthcare provision, worsening health and impact the productivity of tobacco users in the workplace (Arousell & Carlbom, 2016).

6.3 Development of sensitive health information materials

6.3.1 The use of health information materials

Health information materials are frequently used as the medium to communicate written health information in health promotion (Anthea Colledge, Car, Donnelly, & Majeed, 2008; Herber et al., 2014; Protheroe, Estacio, & Saidy-Khan, 2015; Rimal & Lapinski, 2009). Written health information material are still used to improve awareness and knowledge, change attitudes and beliefs, assist vulnerable individuals adopt and maintain healthy behaviours (Bull, Holt, Kreuter, Clark, & Scharff, 2001; Harvey & Plumridge, 1991; Kreuter, Farrell, Olevitch, & Brennan, 2013). HILs were therefore chosen in the current study as a medium to communicate written health messages. Some of the main advantages of using HILs are that the readers can control the pace at which they read and understand the health information; and they could refer back to the information when required (Bersellini & Berry, 2007; Shieh & Hosei, 2008). In the current study, the HILs were developed in collaboration with the peer educator participants; it was assessed for suitability, readability and comprehension; validated by a group of practicing healthcare professionals; and examined by an African languages and culture expert for culture sensitivity. These approaches to HIL evaluation were also conducted by Mottl-Santiago, Fox, Pecci, & Iverson (2013), Badarudeen & Sabharwal (2010), Rhee, Von Feldt, Schumacher, & Merkel (2013), Rhee et al. (2013) and Shieh & Hosei (2008).

6.3.2 Enhancing readability of HILs

As the debate continues on which readability formula is the most appropriate to indicate actual text difficulty, the Flesch-Kincaid formula and the Simple Measure of Gobbledygook

formula have been identified to be the most useful in evaluating health material, with SMOG being the most preferred formula (Flesch, 1948; Mc Laughlin, 1969; Wang et al., 2013; Begeny & Greene, 2014). The use of readability tests, however, has been identified to contain certain discrepancies; it fails to account for differences in the readers' dialect and cultural backgrounds (Rezaee & Norouzi, 2011; Simpkins, Simpkins, & Holt, 1977) and readability formulas are often unsuitable for the target audiences' literacy levels (Badarudeen & Sabharwal, 2010; Cherla et al., 2013). The recommended readability for written materials used in health promoted is also inconsistent; 5th-6th grades (Estey et al., 1991; Griffin et al., 2003) should not exceed an eighth-grade level (Bluman et al., 2009). The readability tests were conducted in the current study, but the readability tests were used in conjunction with other end-user testing techniques.

Despite the improvement in the readability scores between the first draft and the fourth draft of all three HILs, all the readability scores have been considered inappropriate according to the literature recommended readability scores. The literature recommended readability scores also contrasted with that of the readability programme (My Byline Media, 2017) which indicated an optimum level of readability <12, thereby granting the readability scores of the HILs suitable for the end-users. The accuracy of readability formulas remains questioned, but it at least serves as a guide to improving the user-friendliness of health information materials. Medical terminology could have contributed to the high readability score. To validate the accuracy of the readability scoring, an Acceptability and Comprehension Questionnaire was utilized in the pilot study and end-user testing techniques (for example, FGDs) were utilized, in addition to the readability programme, to evaluate the readability of the fourth drafts of the HILs. The readability formulas were used as a guide for the researchers to be more aware of the HIL readability improvements quantitatively but it was the HIL end-users who were the ones to actually be involved in making changes for the HILs which also contributed to the HILs being more contextually based.

6.3.3 Suitability of the health information material

Characteristics such as visual attractiveness, cultural and motivation factors should be considered and tested in the development of written health materials (Meade & Smith, 1991). The SAM (Doak et al., 1996), PEMAT (S. J. Shoemaker et al., 2014) and readability tools have therefore been used, and aided in enhancing the suitability, readability and comprehension

of the HIL. The SAM evaluation tool was useful in the current study for evaluating the content, literacy demand, graphics, layout, learning stimulation and motivation, and cultural appropriateness of the HILs. This assessment tool provided a more inclusive measure of the variables that affect the reader's ability to understand the HIL, which concurred with that of another study (Lewis, 2014). These tools identified an improvement in the suitability, readability, and actionability of all three HILs. This method, however, should be used with caution especially when interpreting results from items with more subjective scoring criteria. Despite the advantages of the PEMAT tool, such as strong internal consistency and reliability, it is essential to consider subjectivity when utilizing this tool.

6.3.4 Content validation and cultural sensitivity evaluation

Content validation of health information material is encouraged (Helitzer, Hollis, Cotner, & Oestreicher, 2009; Kulukulalani, Braun, & Tsark, 2008; Pluye et al., 2014; Sousa, 2014). The current study therefore compiled a content validation questionnaire and requested five nurses from the local RU HCC to evaluate all three HILs to ensure that the information was relevant, substantive, current and up-to-date and accurate. The content validation phase was also conducted to investigate any possible content related biases which the researchers might have overlooked. These health care professionals were approached because they interact with the support staff at the University on a regular basis and therefore aided in developing more contextually appropriate HILs. The content of all three HILs in the current study were deemed valid and appropriate to the end-users. A local, Rhodes University graduate African languages and cultural expert was also approached to evaluate cultural appropriateness of the HILs. There were a number of changes identified by the expert and those can be seen in Table 23 of this thesis. This approach to HIL evaluation could have aided in producing HILs that were more culturally sensitive, appropriate, appealing and user-friendly.

6.3.5 Bloom's taxonomy to support health literacy development

Disease prevention forms the foundation of the public health system. The successful execution of disease prevention is compromised when communication barriers exist between the health information translator and the health information recipient, especially within the indigenous minority and socio-economically disadvantaged communities (Benjamin, 2010; Lambert et al., 2014). These barriers may comprise of any factor which might compromise the ability of an individual to gain access to, understand, and use health information in ways to

promote and maintain good health. Literature has identified that despite the growing interest in health literacy, very little research has been done to understand these communication barriers and the confusion surrounding health literacy and its connection to healthcare outcomes remains.

The levels of cognitive rigour of Bloom's taxonomy could be used to support and strengthen the levels of health literacy development, namely, information access, processing, understanding, and applying knowledge gained to make informed health decisions. In the current study, Bloom's taxonomy was most appropriate for engaging with the complexity of health literacy development and also through providing that additional level of analysis allowing for the study of cognitive complexity, knowledge and skill. This strategy to health literacy development is also supported by other researchers (Chan, Matthews, & Kaufman, 2009). The usefulness of Bloom's taxonomy will be outlined in the sections below: because the study participants were low-semi-literates and indicated little knowledge of tobacco related health literacy, the Bloom's taxonomy lower order domain will be referred to more.

6.3.5.1 Access to tobacco-related health information

Health literacy cannot depend on the skills of the health information recipient alone. Health literacy is therefore an organizational value that should be a part of the core business and incorporated into all levels of health service planning (Walsh, Shuker, & Merry, 2015). The initial points of entry into the South African healthcare system are the nurses and pharmacists. Pharmacists therefore are optimally positioned to provide health information to the communities they serve and promote health literacy (Baur & Brach, 2013; Carlisle, Jacobson, Di Francesco, & Parker, 2011). The participants in the current study identified the need for access to health information, specifically to tobacco use, the need to improve their knowledge on tobacco use, its influencing factors and health effects and identified health information materials to be an appropriate strategy. The researchers therefore worked collaboratively with the study participants in the current study to develop appropriate health information materials on tobacco use.

6.3.5.2 Processing the health information obtained

Processing information involves emotional, cognition, content and process knowledge, and requires the organizational skills to effectively sort through information (Strauser, 2013).

Individuals process information visually, audibly, and through tactile/kinaesthetic processing. The current study focused on facilitating both visual and audible processing.

i. Facilitating visual processing of HILs

The use of visual materials are an effective tool in health promotion for low- to semi- health literates. Visuals were specifically useful in HIV/AIDS health education initiatives in South Africa (Carstens et al., 2006). The participants in the current study requested the use of more pictures in the HILs. To respond to the participants' needs, the researchers made use of culturally sensitive and contextually appropriate pictures in the HILs. The use of bright colours and relatable visuals lead to improved HIL appeal and could therefore encouraged engagement with the health information. In the current study, the visuals were also used to facilitate comprehension and to amplify the written text used in the HILs. To enhance the relatability and appropriateness of pictures in the HILs in this study, cartoon images were replaced with realistic pictures. These pictures contained individuals of the same ethnicity, culture and demographical backgrounds as the end-users. These visuals were approved by the end-users in the current study and they agreed that the HILs were culturally sensitive and contextually appropriate and enhanced text understandability. The layout and format of the HILs in the current study were uncluttered, structured and visuals were well-positioned to relevant text. This approach to health information material development was also used in other studies and literature where using visuals as a communication tool for low-literates also proved to be effective (Brotherstone, Miles, Robb, Atkin, & Wardle, 2006; Centers for disease control and prevention, 2009; Chase, 2014; Choi & Bakken, 2010; Peter S. Houts, Doak, Doak, & Loscalzo, 2006; P.S. Houts et al., 1998; P.S. Houts, Witmer, Egeth, Loscalzo, & Zabora, 2001; Park & Zuniga, 2016; Piddennavar & Krishnappa, 2015; Renuka & Pushpanjali, 2013; Tutty & O'Connor, 1999; Whittingham et al., 2008). In South Africa where two-thirds of the population cannot read basic health educational material, visual material can be an effective tool in health promotion for low-literates. Using relatable and relevant visuals in HILs of the current study to initiate the memory recall of foundational knowledge enhances engagement with the health information material and facilitates the '*remembering cognitive domain*' of Bloom's Taxonomy.

ii. Facilitating audible processing of health information

Audible processing was mostly facilitated in the current study through verbal health communication during health promotion activities and the workplace health promotion workshops. Due to the demographical differences between the researchers and the study participants health communication was approached sensitively. The workplace health promotion workshops were accompanied by an isiXhosa translator and the participants were encouraged to interact and express themselves in the language of their comfort (despite the indication by the participants for the programme to be conducted in English). The researchers communicated to the participants in English and the following factors were used to facilitate verbal communication and facilitate audible processing by the participants: complex explanations and terms were avoided or explained simply through the use of relevant analogies; key information was repeated and communicated slowly and clearly to the participants; the participants were provided with copies of the health information material to refer to during verbal discussions; and the researchers used visual cues to reinforce information communicated verbally. Regular feedback discussions between the researchers and the participants were used as a form of validation to effective verbal health communication attempts. This approach to verbal health communication coincided with that of other studies (Brindley & Reynolds, 2011; Care, Smedley, Stith, & Nelson, 2003; Egan, Bérubé, Racine, Leonard, & Rochon, 2010; Thorne, 2006).

6.3.5.3 Understanding health information

The comprehension of the health information material developed was facilitated using visual cues and illustrations within HILs that were used during the workplace health promotion workshops within this study. Verbal communication techniques as mentioned in section 5.6.1.2 of this thesis could also have facilitated comprehension of the health information material. The semantic integration when interacting with health information material is therefore an important comprehension process that supports the construction of the memory (J. Chin et al., 2015). Literature also indicated that the text should be readable based on the literacy levels of the readers to improve the comprehension of written health messages. The readability of written health messages is the objective measurement of the reading skills required to understand the written text (Badarudeen & Sabharwal, 2010; Baker, Newton, & Bergstresser, 1988; J. Chin et al., 2015; Leroy et al., 2010; Morrow & Conner-Garcia, 2013; Sakai, 2013). The current study therefore utilized readability formulas and participant formative feedback strategies, such as SAM, PEMAT and FGDs, to develop and evaluate the health information material. These strategies were useful in improving the appropriateness of the HILs in this study. Through the inclusion of contextually appropriate visuals, personal pronouns and cultural aspects into the HILs and the use of analogies during workshop discussions in this study, the health messages became more relatable and personal. This approach to improving health information material understanding also corresponds to that of the lower cognitive domain of Bloom's taxonomy. The pre-, post-, and post-post intervention questionnaire indicated a significant improvement in the comprehension and memory recall of the health information presented.

6.3.5.4 Knowledge into practice

As an unexpected outcome of this study, the volunteering participants expressed their willingness to explore tobacco use, help their peers and were already motivated and committed to becoming agents of change (refer to the results section of this thesis). Further motivation from the researchers were therefore not required in this study but were further improved through mediating the collaboration and alignment of institutional and employees' goals and expectations. Participant motivation was further facilitated in this study through focusing on integrating cultural and contextual concepts into the health promotion

programme. These factors are all considered facilitators to knowledge transfer (E. Holton & Naquin, 2005).

In the current study, the critical phase of knowledge transfer by the peer educator participants were facilitated using the following strategies in the WHP workshops: illustrative Microsoft® PowerPoint presentations by the researcher; content discussions; brainstorming and role play. Role play is considered to be a spontaneous acting out of real-life situations by the peer educators while other group members watch and learn through seeing and discussing how people might behave in certain situations. Role play activities are therefore used as an active learning experience and not as a passive learning experience (McSharry & Jones, 2000; Ments, 1999; Nestel & Tierney, 2007). Role play in health sciences and health promotion have been used as an effective tool for learning and knowledge transfer (Joronen, Rankin, & Astedt-Kurki, 2008; Joyner & Young, 2006; Karavoltsov, 2015; Taylor, 2000). The participants in the current study had to act out a health promotion scene where they used the HILs as a tool to disseminate health information to their peers. By the end of the workshops in the current study, the participants were able to identify the different reasons why people smoke, the chemicals contained in tobacco products that cause tobacco use addiction; tobacco use withdrawal; ways to reduce tobacco use; identify possible communication barriers in health promotion; and translate tobacco-related health information to a low-semi literate population in a culturally sensitive and contextual appropriate manner using the HILs. In addition to this activity the peer educators planned and initiated an additional health promotion session with their peers, who were unable to attend the WHP workshops, to transfer what they have learned and apply theory to practice. Based on their experiences and as a form of evaluation and reflection on applying theory to practice, the peer educators in the current study developed a list of guidelines which they consider essential in workplace health promotion on tobacco use in their context (please refer to Section 5.2.5 of the results section). Through the outcomes identified during the translation phase in the current study, it was evident that the participants developed their health literacy and worked their way up the Bloom's taxonomy hierarchy. The participants in this study utilized the segmented elements learned in the WHP workshops coherently to understand, apply, analyse and produce new elements to workplace health promotion that are useful in their contexts and that is culturally sensitive.

6.4 Health empowerment and social capital

This study aimed to facilitate the collaborative action for individuals to take ownership of their lives and health. Participants also developed the skills to understand and promote health in ways that are culturally sensitive and contextually appropriate and to better equip them to solve personal, societal and workplace health challenges. Active participation in such programmes builds self-confidence and self-reliance and this was acknowledged by the participants (Results section of the thesis: Programme evaluation). These characteristics constitute the essence of health empowerment and the strengthening of social capital (Andersen, Jørgensen, & Larsen, 2011; Beaudoin, Thorson, & Hong, 2006; Erben, Franzkowiak, & Wenzel, 2000; Institute of Medicine (US) and National Research Council (US) Committee on the Science of Adolescence, 2011; Wakefield & Poland, 2005, 2005). Community empowerment can therefore be linked to individual and organizational empowerment (Israel, Checkoway, Schulz, & Zimmerman, 1994). Social capital, community capacity, and empowerment are suggested to be effective strategies to strengthen social protective factors. By drawing on the ethical underpinnings of social justice, community empowerment is a strategy that attempts to reduce social inequalities through emphasizing a bottom-up approach in the intervention in which it is applied (Wallerstein, 2002) and it has been a useful strategy within this study.

6.5 Engaged leadership development through using the WHO WHP Framework

For sustained workplace health promotion, all levels of organizational leadership need to be engaged and health promotion needs to be institutionalized. For the effective inclusion of workplace health promotion into organizational structures, specifically in developing countries such as South Africa, organizational leadership needs to recognize the interconnectedness of the causes, promote relationships across disciplines and catalyse systemic change through health related policies and infrastructure (Eriksson, Axelsson, & Axelsson, 2011; Skarholt, Blix, Sandsund, & Andersen, 2016; WHO, 2009b). The *7th Global Conference on Health Promotion* highlighted the improvement in the Human Development Index of countries that execute higher levels of health promotion capacity. The *Regional Strategy for Health Promotion 2006* (WHO, 2006) also proposed that priority be given to collaborative leadership interventions in health promotion that build capacity specifically for NCD prevention with particular focus on the primary preventative level (WHO, 2014a). These priorities were reinforced with the Health-in-all (HiAP) approach during *The Eighth Global*

Conference on Health Promotion in 2013 (WHO, 2013c). One of the programmes that was the champion in collaborative leadership and capacity-building health promotion approaches was the *ProLead programme* (WHO, 2012c) initiated by the WHO Western Pacific Region (WPRO) in 2004. These programmes all promote knowledge creation through the development of health information to be used in health promotion and leadership strengthening; activities structured towards active adult learning such as workshops and role play, participation and strengthening of subject matter comprehension; interdisciplinary action; and promoting the participation of health promotion practitioners (Skarholt et al., 2016). The current study therefore aimed to facilitate action towards the above-mentioned priorities through the use of a multifaceted NCD risk factor such as tobacco use.

Developing leadership for health, especially in the South African context that is facing the quadruple burden of disease, is essential to combat public health concerns. This study, therefore, synergized the principles of CBPR and the WHO WHP Framework and focused on encouraging certain health promotion leadership 'soft skills' in the Peer Educators similar to another study (Walker, 2003):

6.5.1 Planning

In the current study, the participatory action research aspect allowed participants to be actively involved in the planning, development, implementation and evaluation of the workplace health promotion programme. Active participation was an advantage because it provided participants with exposure and experience to how a culturally sensitive and contextually appropriate workplace health promotion programme is planned. Participants had to critically reflect on current circumstances to formulate a clear purpose; identify the anticipated critical facilitating factors and barriers; establish strategies of implementation; and be involved in the monitoring and reporting of results (reporting their experiences on engaging with support staff during health promotion activities to evaluate the usefulness of the HILs). These principles are critical when planning a health promotion programme and concurred with literature (Lardon et al., 2011; Lisiński & Šaruckij, 2006).

6.5.2 Self-awareness

Participants had to critically evaluate their motives of behaviour and external influences to better comprehend and facilitate the holistic approach to health promotion. They constantly had to reflect on their actions, feelings, thoughts and observations. These exercises may have allowed the participants to become more self-aware and it's only through understanding their 'internal world' that they could better understand the context of the multi-dimensional tobacco issues within the isiXhosa culture (Duval & Silvia, 2002; Healy & Mc Sharry, 2011; Kumar & Preetha, 2012; Rungapadiachy, Morris, & Howarth, 2008). Self-awareness also facilitates behaviour change through self-reflection (Brandell, 2014; Crisp & Turner, 2010; Gary & Philipson, 2015; O'Toole, 2012; Rehabilitation, 2013).

6.5.3 Communication and interpersonal relations

In the current study, through practice and interaction, the Peer Educators developed a list of factors that they consider fundamental to communicating with the support staff through health promotion (Phase 5 of results section: Translating health information). These factors spoke to being aware of communication barriers; being non-judgemental, using relevant forms of communication such as written health information and/or illustrations; the importance of listening and discussion; and using local languages, amongst others. In the current study, the participants actively strived towards utilizing the above-mentioned strategies to inform and influence individual and community related health decisions to enhance the health of their support staff peers.

Health promotion is a form of interpersonal communication. It consists of the exchange of information, education, and the provision of social support and these factors have proven to have a positive impact on participant health outcomes in the current study and others (Thorne, 2006). The ability to relate to colleagues was therefore an important consideration for the Peer Educators in the current study because it may facilitate expressions of dignity, respect and understanding which would allow for a deeper understanding of their colleagues' health needs and related challenges (Kreps, 2015; WHO, 2009d; Mittelmark, 1999; Berkman, 1995; Edgar & Volkman, 2012).

6.5.4 Teamwork in health promotion

The support staff members were a 'group' that volunteered to become part of a Peer Educator 'team'. In the current study, the team had a common goal (to promote health and wellbeing with their peers); to work collaboratively and coordinate health promotion activities on tobacco use with their peers and stakeholders; and meet regularly with one another to plan, develop, implement and review these health promotion activities. In shifting towards becoming a team, the peer educators had to make decisions and take actions which they might not have had the intention to do as individuals. Peer education has therefore been used effectively in this study as a health promotion strategy. They had to think and act collectively in the best interest of their support staff peers. The participants also re-enforced the meaning of teamwork through recognising the essential principle of "*UBUNTU*" (an isiXhosa phrase) that directly translates to, "*a person is a person through other persons*".

To better understand and address the impact of tobacco use, the health promotion team in the current study had to work collaboratively to investigate the influencing factors of tobacco use and act accordingly. In the current study, teamwork also added to the sensitivity of the programme because teamwork is built on respect of individuals' feelings and autonomy. Teamwork is a critical component within leadership for health promotion. Literature has identified that teamwork in health promotion has become a critical and effective component within primary healthcare and proves rather challenging to achieve by one individual alone. Teamwork is a critical approach to solve complex problems in organizational contexts and high-level cognitive processes for individuals (Babiker et al., 2014; Bosch & Mansell, 2015; Burton & Ormrod, 2011; Eriksson, Orvik, Strandmark, Nordsteien, & Torp, 2017; Hagemann & Kluge, 2017; Tzenalis & Sotiriadou, 2010).

6.5.5 Health development through health empowerment

In the current study the Peer Educators were involved in understanding local cultural and social influencers on tobacco use at the institution; collaboratively developed health information materials on tobacco use; and used the tobacco HILs to promote health to the general support staff at the institution. The purpose of health promotion is to develop others (support personal and social development) through providing information, health education, and enhancing life skills (WHO, 1986). Health promotion could therefore improve an individuals' understanding of their health (to make better informed health decisions) through

the provision of health information and health education in a way that recognizes their community contexts and cultural differences. Health promotion could therefore be said to facilitate individuals to gain greater control over their decisions and the actions that might affect their health. Taking ownership of one's health is fundamental to health empowerment (WHO, 2009c; Kumar & Preetha, 2012; Laverack, 2004; Tengland, 2007).

6.5.6 Decisiveness and adaptability

In the current study, Peer Educators had to develop their decision-making skills because health promotion requires the practitioner to adapt to different individuals and situations. It was therefore useful, in the current study, to improve the knowledge of the peer educators on culture sensitivity, tobacco use and health promotion first before the researchers encouraged them to practice health promotion. Improving their knowledge may have improved their readiness to make informed decisions, render judgements and take purposeful action. Literature states that improving knowledge is the first step to improving the decisiveness of individuals which is considered to be an interdisciplinary leadership competency (Koelen & Ban, 2004; Mutsatsa, 2015; Negandhi et al., 2015).

6.5.7 Forward vision

In the current study, participants expressed the need to “help others” and, for them to do that, they requested assistance to improve their knowledge on tobacco use and its influencing factors. The participants had to evaluate the topic from all its multiple perspectives, understand the current context of tobacco use and develop a future-orientated goal to effectively promote health on tobacco use. A leader has to be rooted in his/her past and focused on the present challenges to achieve a future goal (Friedman, 2008).

These are some of the leadership competencies that were focused on and encouraged during the implementation of the workplace health promotion programme on tobacco use in the current study. This section is a representation of the link that exists between health promotion and leadership development, how these two factors interrelate and how CBPRA and the WHO WHP Framework can be used to facilitate that. This pro-active approach to disease control is what the participants in the current study emphasised and is still working towards.

6.6 WHO WHP Framework and health promotion collaboration

To investigate and address the need for a workplace health promotion programme, the Workplace Health Promotion Framework compiled by the WHO in April 2010 was used as a conceptual framework in the current study. The framework required the researchers to explore, plan, develop and implement a workplace health promotion programme using a 'whole-systems' approach with both the involvement of staff and their employers. The WHO has identified four avenues to influence the health status of the employees that an employer, working in collaboration with employees, can use and the way in which these four avenues are addressed depends of the health needs identified: the physical work environment, the psychosocial work environment, personal health resources and enterprise community involvement (which is similar to the influencing factors mentioned in Holton's HRD Model).

The physical work environment influencers were explored in the SSI and FGDs and were identified to not have a direct impact on this study. It should, however, be considered that tobacco use could have possible associated safety dangers when used in the presence of hazardous chemicals. As mentioned under the results section of this study, a participant mentioned that he observed workers smoking tobacco while operating gasoline fuelled lawn mowers. Occupational hazards like these could have dire consequences to the health of the workers and to the employers. It is therefore essential to employ policies and conduct health promotion activities to raise awareness and prevent these hazards from occurring (Ulutasdemir, Kilic, Zeki, & Begendi, 2015).

The current study has identified that feeling overworked could have an impact on the mental health of employees. Organizational culture and work organization are identified by the WHO as factors influencing the psychosocial work environment within the workplace. The participants in the current study expressed that a shift in the organizational culture and work organization within the institution, towards a more supportive and healthy workplace, would be ideal. Psychosocial factors are also known as work stressors. One of the participants in the current study identified that when he is stressed due to workplace related influences he resorts to smoking tobacco to lift his mood. These tobacco related behaviours were experienced in other studies as well (Hughes, 2003; Halpern & Taylor, 2010; Jordan, Khubchandani, & Wiblishauser, 2016). These types of behaviour motivated for the inclusion of '*Ways to stop smoking*' in the 'Why do people smoke tobacco?' HIL of the current study

which outlined distractive techniques that the tobacco user could explore when craving tobacco use. Several researchers have investigated the link between the psychosocial factors of health and the workplace and, in conclusion, expressed the importance of recognising the effects that the workplace might have on the psychological health of their employees (Woo & Postolache, 2008; Halpern & Taylor, 2010; Rajgopal, 2010; Portoghese, Galletta, Coppola, Finco, & Campagna, 2014).

Literature suggests that to conduct a comprehensive tobacco control programme, committed leadership and adequate health resources are more effective in preventing and controlling tobacco use (Bondurant & Wedge, 2009; WHO, 2011). The current study therefore worked collaboratively with the participants and RU HCC to initiate the relationship and promote the availability of health services at the institution. The current study also collaboratively worked towards developing health information materials for use by the Peer Educators at the institution. The employers were also provided a space to interact with their employees and play a role to motivate and support their employees' efforts to maintain healthy personal lifestyles. The provision of free health promotion services (through developing and implementing health information materials) by the Peer Educators also contribute to improving the health literacy of the general support staff members at the institution and therefore stimulates enterprise community involvement. These factors are all considered essential when conducting a comprehensive workplace health promotion programme (WHO, 2010b; Hassard et al., 2012). The continual improvement process model strives towards developing the following key factors in the workplace: leadership engagement, involving workers and their representatives, gap analysis, learning from others and sustainability. In the current study, the continual improvement process model guided the approach to mobilizing institutional leadership within the project (methodology section of this thesis: *Participants and Study Framework and Procedure Integration*). The WHO WHP Framework could only be used as a WHP conceptualization guideline in this study as it did not contain practical approaches to performing WHP programmes in various workplace contexts and it is a relatively new framework. The researchers in the current study therefore used the WHO WHP Framework in addition to other models and theories, as set out in the *Literature Review* and *Methodology* chapters of this thesis.

6.7 The use of participatory action research approaches

Participatory action research approaches allow for graduate research to be more relevant to professional and organizational learning and develop human, social and professional competencies. Action research approaches are therefore more appropriate than more traditional research methods because they also develop professional competencies within the organization through conducting shorter programmes at the workplace; developing programmes that are more relevant to the workplace rather than experiential classroom research; it is a project based-approach to learning; and it collaboratively solves real-life issues significant to the workplace (Kindon, Pain, & Kesby, 2007; O'Reilly-de Brún et al., 2015; Zuber-Skerritt & Perry, 2002). PAR approaches also support health promotion through improving research quality, empowerment, sustainability and capacity building (Jagosh et al., 2012).

The CBPAR approach was effectively used in this study to orientate the participants (Institution and staff members) towards a common goal and shared vision. The CBPAR approach empowered individuals to be proactive in solving health challenges in their workplace and created a sense of ownership and responsibility as Peer Health Promoters. Utilizing a CBPAR approach allowed for participants to have their skills and expertise acknowledged and valued during the research process, through providing their voice and being actively involved in accurately understanding and addressing their workplace related health challenges. In order for the participants to stimulate change in their workplaces, they have to be involved in the research process from the beginning. The CBPAR approach also stimulates bidirectional project benefits; reduces research fatigue; prevents the participants from being passive recipients of information and encourages culturally sensitive and appropriate project development (McQuiston, Parrado, Martínez, & Uribe, 2005; Mubuuke & Leibowitz, 2013; Zuber-Skerritt & Perry, 2002). The outcomes of this study also concurred with that of other studies (Adelman, 1993; Culhane-Pera et al., 2010; Entwistle, Renfrew, Yearley, Forrester, & Lamont, 1998; Hills et al., 2007; Hudon et al., 2016).

6.8 Conclusion

Having presented the results in the previous two chapters, this chapter discussed the significance of the study outcomes in relation to the literature. The significance of using a collaborative peer educator approach to health literacy development and workplace health promotion was discussed, and how the WHO WHP and related theoretical models aided in achieving the outcomes. This chapter also discussed the culturally sensitive approach to workplace health promotion on tobacco use that was adopted here, and in particular, how in developing a novel approach that was sensitive to the isiXhosa culture, stimulated health empowerment. Finally, the approach to developing peer educators as leaders in health promotion and the significance thereof was discussed. The following chapter will outline the main conclusions of the study.

CHAPTER 7: Conclusion

7.1 Introduction

This chapter will outline the deductions made from the research outcomes as well as then study strengths, limitations, implications and recommendations for future research.

7.2 Summary of Purpose, process and Outcomes of the study

The aim of the current study was to develop, implement and evaluate the effectiveness of a culturally-sensitive and contextually-appropriate collaborative workplace health promotion literacy programme on tobacco use. Objectives related to this aim entailed adopting a collaborative approach to peer education, which utilized tailored health information leaflets that had been developed with the assistance of the peer educator support staff at Rhodes University.

This process was guided by the World Health Organization Workplace Health Promotion Framework. This participatory action research was designed to improve the tobacco-related health literacy levels of low- to semi- health literate employees through collaborative health promotion approaches. In line with this participatory approach, the thesis also set out to attain the following procedural objectives:

Table 28: The four phases of the procedural objectives of this project

Phase	Objective	Outcome
Exploratory	To assess the successes achieved by other countries and South Africa in their approach towards tobacco based policies and practices	The development and amendment of tobacco related policies are essential to combat this public health concern. The outcomes were reported in (Duxbury, Rath, Maraj, Bosman, & Srinivas, 2016). This objective was integrated into the literature review section of this thesis.
	To assess tobacco-related health promotion policies and practices at Rhodes University	It was identified by the study participants that the Institutional policies related to tobacco use and health promotion could be strengthened (Section 5.2.2). By the time the current study ended, the government propagated HIV/AIDS Officer's designation changed to Institutional Wellness Specialist with the intention of extending the HIV/AIDS awareness programme to encompass other institutional health challenges, like NCDs and its four major risk factors.
	To establish facilitating and constraining factors related to tobacco use at Rhodes University.	The participants proposed contextual and collaborative approaches to workplace health promotion as a means to curb tobacco use.

Phase	Objective	Outcome
Educational health promotion	To design a health promotion educational intervention to address tobacco use related challenges, as raised by the key stakeholders and peer educators	The participatory action research approach to health promotion allowed for the conceptualization, development culturally sensitive contextual HILs and workshop.
	To design and test the culturally sensitive and appropriate health information leaflets to be used in the educational intervention with the Rhodes University Peer Educators	Through the use of scientific end-user testing techniques, accessible, culturally sensitive and contextually appropriate HILs were produced.
	To design a health promotion manual to be used for future health promotion interventions by the Rhodes University Peer Educators	As feedback during FGDs with the participants, they identified a manual to be too text dense and less user-friendly for a low- to semi-literate population. It was therefore suggested that a workplace health promotion workshop would be more appropriate to implement the HILs developed. The trainer's manual draft was therefore not completed. Refer to Appendix H and I. The HILs were therefore also re-organised in the form of a poster to be placed in various areas on the University campus to raise awareness (Appendix Q).
Implementation	To conduct health promotion training workshops with volunteering Rhodes University Peer Educators for sustainable future implementation of health promotion on tobacco use for support staff.	A comprehensive four day health promotion workshop was conducted (refer to section 4.8, 5.2.3.6 – 5.3) and Appendix M). The workshop facilitated the active participation of both staff and employees. A significant increase in tobacco-related health knowledge identified after the workshop. The participants also managed to compile a suitable guide to workplace health promotion in their context based on their knowledge transfer experiences (Section 5.2.5)
Evaluation	To evaluate the resultant tobacco health promotion programme by the Rhodes University Peer Educators.	Participants identified that the current study developed their knowledge on tobacco-related health aspects and health promotion. The use of graphics facilitated HIL comprehension and memory recall. The participants were empowered to live healthier lifestyles and to educate their family and peers on what they have learned (Section 5).
	To evaluate Peer Educator recall on the tobacco related health information discussed during the training workshops	The memory recall evaluation showed that the participants could still remember the content covered during the workshops, as indicated in the results of the post-post questionnaire.

Non-communicable diseases (NCDs) cause one of the most significant global public health threats and tend to impact those more in developing countries during their most productive years, making them a significant contributor to poverty and a serious barrier to economic development, especially to those at the lower end of the social gradient. The NCD risk factor, tobacco use, is indicated to have a major impact on the workplace, work productivity and absenteeism and vice versa. The current study discovered that there was a health knowledge gap related to tobacco use amongst the peer educator support staff participants and that the University's approach to workplace wellness could be strengthened to be more inclusive, effective, contextually appropriate and sustainable.

Some of the themes to emerge from the focus group discussion analysis were factors such as workplace related stress, peer-pressure, personal beliefs, culture and common tobacco myths. These were the participant-perceived influencing factors to tobacco use within this context. The study participants therefore prompted the need for a workplace health promotion programme on tobacco use. To address the participants' needs, the researchers used the already existing HIV/AIDS Peer Educator Programme as a 'piggyback' strategy for the current study and to facilitate sustainability of the current programme. The study participants suggested the following facilitating factors to conducting a comprehensive workplace health promotion programme at the University: mobilize both staff and employee participation and strengthen organizational structures; conduct a baseline study; follow an interdisciplinary and holistic approach; utilize 'shock' therapy and common analogies; acknowledge psychological/emotional stimulus and be sensitive; and provide actionable steps to reduce tobacco use.

The peer educator support staff participants collaboratively conceptualized, designed, developed, analysed, implemented and evaluated three health literacy appropriate HILs related to tobacco use. These three HILs were also collaboratively evaluated and validated by the general support staff end-users (pilot study), an African languages and culture expert, five nurses from the local RU HCC, graphic designer, language editor, peer health promotion postgraduate colleagues and the principal supervisor. The HILs were evaluated through a series of scientific, end-user testing approaches. The HILs were tested for readability, comprehension actionability and suitability. The SAM, PEMAT, Comprehension and acceptability questionnaire, validity tests, readability formulas and other end-user testing

approaches (such as FGDs) deemed the HILs to be readable, understandable, actionable, culturally sensitive and contextually appropriate.

To facilitate peer educator knowledge transfer, a four-day health promotion training programme was conducted to improve user friendliness, memory retention and recall of the HILs to improve tobacco related health literacy aspects at the institution. The effectiveness of memory recall was evaluated using a pre- and post-, and post-post-intervention questionnaire. The training and learning theories identified were helpful in designing the implementation and evaluation phase of the current study (aspects of Bloom's taxonomy and Holton's Human Resource Development Model) and to investigate knowledge transfer. The study participants were also provided with extra copies of the completed HILs to distribute to their peers and to use as reference sources of information when needed in future. The researchers found that culture has a major perceived influence on tobacco use. This was particularly so for members of the Black isiXhosa culture where tobacco is used as a medium to communicate with ancestors, and it is perceived that the older one is, the more 'rights' and status they have to use tobacco in public. These behaviours were identified to be idealised by the youth within this context. It was therefore imperative that these concepts were discussed in the HILs and within the WHP workshops.

The researchers found that comprehensive health promotion activities assist with building knowledge and skills mutually, which plays a vital role in sustainable development and systemic change. The collaborative development of appropriate health information materials and the health promotion programme promoted ownership and facilitated responsibility, participation, leadership 'soft-skill' development and facilitated health empowerment. Health promotion is useful as a useful tobacco control method in rural South Africa, aids in modifying social norms and denormalizing tobacco use. Despite technological advances, printed and appropriate health information materials have proven to still be a relevant and effective strategy to health empowerment and health promotion within this context. Awareness on tobacco-related health concerns were effectively raised through illustrations in the HILs and workshop discussions in this study. The continued involvement of institutional managerial representatives from the start assisted with this programme in being a more sustainable option for this workplace health initiative.

7.3 Strengths, limitations, implications and recommendations

Qualitative research is often criticised for being biased, small scale, lacking rigor and validity and reliability remaining as a challenge.

7.3.1 Research validity

The validity of the research conducted in the current study was strengthened through the use of methodological triangulation amongst the other approaches mentioned in the methodology section of this thesis. The researchers used various methods such as semi-structured interviews, focus group discussions, observations and questionnaires in the phases of this study. In the current study, the use of computer programmes (NVIVO® Software and the My Byline Media® readability programme) that have been used to analyse data collected and researchers made use of relevant literature sources to correlate research findings to strengthen validity. The validity of the NVIVO results were correlated to a manual thematic analysis conducted and end-user testing techniques were used to validate the readability scores obtained. Validity in the current study was also strengthened through recording data objectively and comprehensively through the use of voice recorders, an external translator, peer review and five healthcare professionals. The researchers therefore recommend the use of professional external reviewers/experts, end-user testing techniques and validated computer programmes to improve the validity of health promotion research outcomes.

7.3.2 Research quality representative of researchers and participant skills

Research quality is often indicative of the skills of the researchers and participant skills which may be influenced by biases and idiosyncrasies. To limit research influences through researcher bias and idiosyncrasies, the researchers decided to follow the engaged community-based participatory action research approach to health promotion. The student researcher improved his research competency skills through attending various postgraduate capacity building workshops held by the Rhodes University Centre for Postgraduate studies and obtained a certificate in Academic Journal Writing for Publication SCA 7615. The student researcher also has a background in health sciences and health promotion, presented research findings at national and international conferences and formed part of a health promotion research team facilitated by a National Research Foundation rated Principal supervisor with specialized research skills in health promotion.

The participants, however, were not professionally trained to be health educators but were a group of pioneer peer educators who focuses on health promotion. In the current study, however, the peer educators' health belief systems, demographics and experience with the HIV/AIDS Peer Education programme formed the basis of this study and their health education skills were secondary to that. To improve the health promotion competencies of the Peer Educators, the researchers conducted a four day health promotion workshop with both formative and summative evaluation aspects. The researchers therefore recommend that these workshops continue and that future refresher courses be conducted with the Peer Educators for continuing professional development. The researchers also recommend that institutional management and support staff continue to build their relationship to strengthen workplace wellness at Rhodes University.

7.3.3 Data collection and analysis

In qualitative research, the form and volume of data for analysis and interpretation may be time consuming. The researchers improved data collection and analysis efficiency through utilizing computer programmes such as NVIVO® software and voice recorders. Self-reported data discrepancies were reduced through constructing anonymous questionnaires and obtaining group consensus to limit possible participant efforts to impress the researcher and social desirability bias. Limitations with relation to researcher presence and its influence on participants' responses were challenging to avoid. The findings in qualitative research are also difficult to characterise in a visual way, so it can therefore be useful to graphically map out research outcomes (such as thematic themes identified).

7.3.4 Sample size

The sample size of the current study (n=11 for tobacco peer educators; n=32 for workshop participants) would be considered small. These sample sizes were, however, observed in another qualitative study as well (Latham, 2013). Large sample sizes are challenging in this context because of the nature in which qualitative studies are conducted and the volume of qualitative data collected, as well as the timeframe constraints of a two year Master's project. In contrast to this, a small sample size allows for the researchers to develop participant trust and relationships more effectively which in turn could facilitate more dependable and valid data collection outcomes (Crouch & McKenzie, 2006). The sample size also depends on data

saturation borders and the study setting only had 40 employed peer educators where 11 peer educators volunteered to be participants in the current study.

Literature would argue that nonprobability sampling techniques are associated with severe limitations such as; subjectivity, generalization, judgemental, selective and biased. In this study, however, nonprobability sampling has shown to present with a wider range of sampling techniques that can be used separately through different phases of a research study. Nonprobability sampling was deemed suitable because the researchers had a small sample size with limited resources, time and workforce; it was more cost effective. Generalizability of this study is not attempted due to the small sample size, however, it is context specific for the study participants.

7.3.5 Lack of prior research studies on the topic

The researchers in the current study identified a lack of research done within this context and study setting (South Africa, Grahamstown, tobacco use within the workplace, isiXhosa culture and related health beliefs) and with using the WHO WHP framework in qualitative research. It was therefore essential for the researchers to draw on literature conducted elsewhere on similar participant demographics, contexts and settings. Participants' responses were therefore also critical in contextualizing this study.

7.3.6 Longitudinal effects

Due to the timeline restrictions of this study, it is recommended that future research could include a longitudinal study, with a broader scope, that extends to evaluate behaviour change with health evaluation and monitoring aspects.

7.3.7 Fluency in isiXhosa language

The researchers are not fluent in isiXhosa which might have created a communication barrier. To address this, a bilingual moderator was present during the four days of the workshop who was an African languages and a culture expert to allow for those participants who felt more comfortable to express themselves in isiXhosa. These translations were validated by an isiXhosa acquaintance.

7.3.8 Further recommendations

This study contributed towards developing accessible and sensitive health information material and resulted in a significant increase in the participants' tobacco related health knowledge. The adoption of a collaborative approach to the research, empowered the participants to be agents of change amongst their peers in the workplace. The study also demonstrated that the collective use of external expert reviewers, end-user testing techniques and validated computer programmes could collaboratively improve the validity of health promotion research outcomes. This study could be 'built-on' future studies in the following five ways;

Firstly, future research should measure the cost effectiveness of the programme and to explore the factors affecting behavioural changes more in-depth using a qualitative approach.

Secondly, collective action could be taken towards preventing the use of tobacco, specifically within the child, youth and female population, by resorting to appropriate education and awareness campaigns that would help to create a healthier population for sustainable development.

Thirdly, the use of analogy strategies, as in this study, could be modified and applied to other contexts and settings of health promotion.

Fourthly, the 'piggyback' strategy to support programme sustainability could be used to promote workplace health at other South African institutions with similar organizational structures as Rhodes University.

Fifthly, readability tests should be accompanied by end-user testing techniques to improve outcome validity.

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Appendices

Appendix A: Faculty of Pharmacy Higher Degree Committee approval



RHODES UNIVERSITY

Faculty of Pharmacy • Grahamstown • 6140 • South Africa

February 8, 2016

Mr Theodore Duxbury
Faculty of Pharmacy
RHODES UNIVERSITY

Dear Theodore

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: Tobacco Use

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,

A handwritten signature in black ink, appearing to read 'G. C. Wells', with a long horizontal flourish underneath.

Prof. George C. Wells

Chairperson: Faculty of Pharmacy Higher Degrees Advisory Committee

Appendix B: Rhodes University Research Ethics Committee



RHODES UNIVERSITY

Grahamstown • 6140 • South Africa

FACULTY OF PHARMACY

Tel: +27 (0)46 603 8381 • Fax: +27 (0)46 603 7506 • E-mail: dean.pharmacy@ru.ac.za • PO Box 94, Grahamstown, 6140, South Africa

5th February 2016

Dear Prof. Srinivas and Mr. Duxbury

Re: Ethical approval by the Faculty of Pharmacy's Ethics Committee
(Tracking Number PHARM 2016-04)

We are pleased to inform you that the Faculty of Pharmacy's Ethics Committee grants you ethical approval for your research entitled:

Workplace health promotion: Tobacco 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

Appendix C: Participant Invitation Letter

Title of the Project: Workplace Health Promotion, tobacco use

Dear Participant,

You are kindly invited to participate in a research study conducted by Mr Theodore Orlando Duxbury, a master's student from the Faculty of Pharmacy, Rhodes University. If this letter contains anything that you do not understand you may ask the above-mentioned researcher. If you are willing to participate, you will be asked to sign a consent form.

Purpose of the project

This project is intended to promote health in a workplace setting.

Potential risks or discomforts

I do not foresee any potential risks or discomfort that may come from you participating in the research project.

Potential benefits to the participant

This project will increase your awareness of how tobacco use affects your health and social well-being. After this study, you may also help others to have a better understanding of the risks of tobacco use.

Can you participate?

To participate in this project, you must have worked at Rhodes University for at least one (1) year.

Compensation for participation

You will not receive any payment or any other compensation for participation in this project.

Will your role in the project be kept confidential?

Any information that is obtained in this project and any information concerning you will remain confidential. Such information will only be disclosed under your permission or as required by law. Mr Theodore Orlando Duxbury and his supervisors will be using the information gathered in his research and other publications.

Is your participation compulsory?

No, it is not compulsory for you to participate. It is your choice to participate or not to participate. All discussions in this project will be voice recorded. If at any point you feel the need to withdraw from the project, you are allowed to withdraw at any time without consequences of any kind. You are also allowed to refuse to answer any questions you do not want to answer. You will not be penalized for withdrawing from this study

Participant rights

If you have any related questions about your rights as a researcher participant, please contact

Researcher: Mr Theodore Orlando Duxbury at g12d6619@campus.ru.ac.za (cell: +27 72 567 0238)

Researcher's Supervisor: Professor Sunitha Srinivas at s.srinivas@ru.az.za

Appendix D: Participant Informed Consent Form

Project Title: Workplace health promotion, tobacco use at Rhodes University

Name of Researcher: Theodore Orlando Duxbury

I, the undersigned, confirm that,

Note to researcher: Tick the boxes below accordingly as the contents of this form is read.

I have read (or had the researcher read to me) the information provided in the invitation letter.	
I understand the information contained in the invitation letter	
The researcher allowed me to ask any questions that I might have had about the project and my participation.	
After having read (or had the researcher read to me) the invitation letter, I volunteer to participate in this project.	
I understand that I can withdraw from the project at any time without being questioned or give reasons to why I withdrew	
The researcher have guaranteed that my personal details will be kept confidential	
I grant the interviewer (and researcher), Mr Theodore Duxbury, permission to record this interview.	
I grant the researcher's supervisors access to the confidential information gathered in this project and I understand that the researcher and his supervisors will not disclose the information to anyone outside this project.	
I, together with the researcher, agree to sign and date this informed consent form.	

Name of participant.....

Date.....

Signature.....

Declaration by interviewer

I, Theodore Orlando Duxbury (the researcher), confirm that any personal information obtained during this interview and research study will remain strictly confidential.

Date

Signature.....

Name of witness

Date

Signature.....

Appendix E: Question Guide for the Semi-Structure Interviews

A. Demographics

Respondent number: _____

Gender: _____

Occupational role at Rhodes

University _____

Introductory note: This meeting will be based on support staff workplace health promotion initiatives at Rhodes University. I will ask you several questions. Your personal opinion and view will be very important to this discussion. There will be no right or wrong answers. This conversation will be recorded only for the purpose of research. No names or personal information will be used disclosed from this meeting.

B. Question Guide

- What does health promotion mean to you?
- What does workplace health promotion mean to you?
- Have any activities or initiatives on health promotion been conducted at Rhodes University?
- If yes, please give an example of one and explain what it was about.
- What are the existing policies and practices in place at Rhodes University on workplace health promotion?
- In your opinion, what could be the facilitating factors to a workplace health promotion initiative? And why?
- In your opinion, what could be the constraining factors to a workplace health promotion initiative? And why?
- Do you have any other questions, comments or suggestions?

Appendix F: Question Guide for the Focus-Group Discussion with peer educators/support staff

Finalise: Invitation letter and Consent form (explained and signed)

A. Demographics

Respondent number: _____

Age: _____

Gender: _____

Highest educational level attained: _____

Introductory note: *This meeting will be based on support staff workplace health promotion initiatives at Rhodes University. I will ask you several open questions. Your personal opinion and understanding will be very important to this discussion. There will be no right or wrong answers.*

B. Question guide

- Are there any workplace health promotion initiatives that you have facilitated before?
- Do you consider such initiatives important? Why?
- Have there ever been health promotion initiatives that focused on tobacco use?
- If yes. Have they been helpful?
- In your opinion, what could be the facilitating factors to a workplace health promotion initiative? And why?
- In your opinion, what could be the constraining factors to a workplace health promotion initiative? And why?
- Do you have any suggestions on how to facilitate such an initiative for the support staff at Rhodes University?
- Do you have any other questions, comments or suggestions?

Appendix G: Pilot Testing: Acceptability and comprehension questionnaire

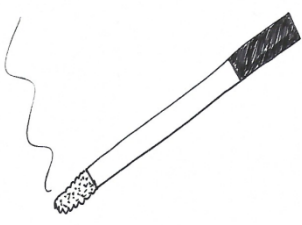
Assessment of pictures

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 you have answered "no" to the above question please give examples and explain why

3. Were any of the pictures helpful to you?

Yes	No

If you answered "yes" to the above question, please state which picture and why

Do you find any of the pictures culturally or religiously offensive to you?

Yes	No

If you answered "yes" to the above question please explain why and give examples

4. Do you think the pamphlet needs more pictures?

Yes	No

HIL assessment

1. Is the information in the pamphlet easy to understand?

Yes	No

If you answered “no” to the above question, please explain why and give examples

Is the word size easy to read?

Yes	No

Please explain your answer to the above question

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

2. Were there any words in the pamphlet which you did not understand?

Yes	No

If “no” to the above question please give examples

Is the language easy to understand?

Yes	No

If “yes” to the above question, please explain

If “no” to the above question, please explain

Do you think any more information is needed in the pamphlet?

Yes	No

If you answered "yes" to the above question, please explain why

To what extent does this health pamphlet help you understand the risks of tobacco use?

Very helpful	Somewhat helpful	Not helpful

3. Do you have any further comments or suggestions?

Thank you for your participation in this assessment!

You can reverse some of the effects of smoking!

Time after last tobacco use	Effect on the body
20 mins	Heart rate goes back to normal
2 hours	Your blood pressure will go back to normal
12 hours	Harmful chemicals in blood will decrease
48 Hours	Your sense of taste and smell will improve
3 Days	Nicotine will be completely out of the body
2 weeks to 9 months	Lungs start to work better
1 year	The risk of heart disease will decrease to 50% !

**It might be difficult BUT
it is possible to stop
smoking!!**

FUN WORD GAME!

Play the game below to help you remember.
Match the words in Block 1 to the words in Block 2:

Block 1	Block 2
NICOTINE	CHEMICAL
CHEWING TOBACCO	RISK OF HEART DISEASE DECREASE
AFTER 1 YEAR	BLINDNESS
TOBACCO AFFECT THE EYES	NOSE BLEED
SMIFFING TOBACCO	GUM DISEASE

REMEMBER!

**Tobacco is harmful to our bodies.
It is possible to stop smoking.
Let's live healthier lifestyles!**

For HELP to QUIT phone (011) 720 3145

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>



TOBACCO USE AND OUR HEALTH



What is tobacco?

Tobacco can be:

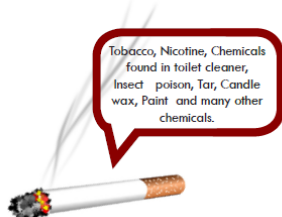
- Smoked
- Sniffed
- Chewed



Different ways of tobacco use

All these different ways of using tobacco is harmful to our bodies!

What is in tobacco smoke?



What does tobacco do to our health?

1. Chewing Tobacco has a bad effect on the mouth:

- Cancers of the mouth
- Sores in the mouth



- Loss of teeth
- Yellowing of teeth
- Gum disease

2. Sniffing tobacco ("Snuff") can cause:

- Nose Bleed
- Blocked nose
- Cancer of the nose



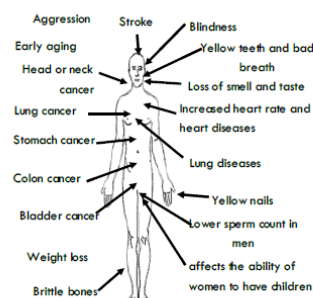
Bleeding nose from sniffing tobacco

3. The effects of smoking tobacco on our health:

- Smoking tobacco is harmful to the whole body!

Smoking tobacco and our health

This is what tobacco does to our health...



Once you stop smoking some of these effects can go away over time and your health will improve!

WAYS TO STOP SMOKING

It is possible to stop smoking, even if it is the hardest thing to do.

- Support from:
 - Family
 - Friends
 - Peers with positive influence
 - People you work with

Find activities to keep you from thinking of smoking such as:

- Playing a sport
- Chew sugarless gum
- Finding a group of non-smokers to interact with

Healthy food to help you smoke less:

- Water, milk, cinnamon, ginger, turmeric, oranges, tomatoes and other fruits and vegetables



Teach the youth that:

- It is okay to say no
- Smoking is dangerous
- Live healthy lifestyles



If children are taught at a young age not to smoke, as adults they could make the right choices.

REMEMBER!

Smoking

- is addictive
- not attractive
- gives you more stress
- makes you unproductive at work
- is unhealthy
- is harmful to those around you

WORD SEARCH! To help you remember. Find the words below:

C	E	C	V	S	T	R	E	S	S
A	U	V	E	H	E	N	L	R	E
N	E	B	I	K	I	Q	K	O	D
C	T	Y	L	T	R	M	D	N	J
E	H	R	O	O	C	P	E	L	F
R	N	C	X	A	B	I	Y	K	S
S	I	W	C	P	R	X	D	J	E
N	A	J	Z	F	D	Y	N	D	U
F	A	M	I	L	L	F	B	O	A

Stress friend addictive cancers nicotine -family

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Why do people smoke



People might smoke because:

- It makes you look attractive
- It is fun
- It is relaxing
- Friends and family smoke
- There is nothing else to do
- They do not know it is unhealthy
- It is hard to stop
- We will die anyway

Is smoking still attractive?



Smoking may give you:

- Bad breath
- Cancers
- Lung disease
- Yellow teeth
- Yellow nails
- Coughing all the time



Why do people think smoking is fun and relaxing?

Smoking makes us feel 'high' (a feeling of pleasure). This is caused by an addictive chemical called nicotine.

- The 'high' feeling from nicotine is only for a short while.
- When you do not smoke you get feelings of withdrawal, which can make you:

- Stress
- Tense
- Irritable (grumpy)
- Restless
- Have a headache
- Have difficulty sleeping



Smoking allows you to take a break from work. Taking a break is good as it makes us work, and feel better. It prevents us from getting tired.



A man on a smoke break

Taking too many smoke breaks will make you unproductive at work.

Why is smoking around friends and family bad?

- Smoking family members can influence non-smokers to start smoking.
- Children may see their family as role models.
- These children grow up thinking smoking is good.
- These children are more likely to start smoking.



Peer Pressure and Smoking

- The desire to fit in with others can be a positive thing that helps us grow socially.
- Peer pressure can also be negative when friends influence each other to smoke.



Friends influencing each other to smoke

How to avoid breathing in second-hand smoke?

- Ask smokers to not to smoke inside a building or car
- Ask smokers not to smoke around you
- Do not keep ashtrays in the building
- Open the windows
- Ask caregivers not to smoke around the children
- Avoid going to areas where people are smoking

Second-hand smoke and human rights

Everyone has the right to clean fresh air

Money and tobacco use

Money spent on tobacco can be used for basic family needs such as:

- Food
- Education
- Health care

REMEMBER!

Smoking

- Is harmful to smokers and non-smokers
- Second-hand smoke is more dangerous than smoking itself
- Second-hand smoking can be avoided

To help you remember! Find these words in the leaflet and make a circle around it:

• Food	• Children
• 7000	• Pregnant
• Chemicals	• Right
• Heart	• Windows

For HELP to QUIT phone (011) 720 3145

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How does SMOKING affect those around us?

What is tobacco smoke?

- Tobacco smoke releases more than 7000 harmful chemicals into the air
- These chemicals are then inhaled by non-smokers

This is called second-hand smoking

Second-hand smoke is the smoke from both:

- the burning end of the tobacco product
- the smoke breathed out by the smoker

Non-smokers breathing in tobacco smoke

Why is second-hand smoke is more dangerous than smoking itself?

- The smoke from the burning end of the tobacco product has more harmful chemicals than the smoke breathed in by the smoker:

• Filter end of the cigarette. It protects the smoker slightly.

• Harmful chemicals released from burning end. It causes more harm to non-smoker!

Harmful chemicals are released from cigarette burning end

- This is because there is no filter at the burning end of the tobacco product

Who is at risk of being harmed by second-hand smoke ?

- Family
- Children
- Pregnant women
- Friends
- People in the workplace
- People in public places

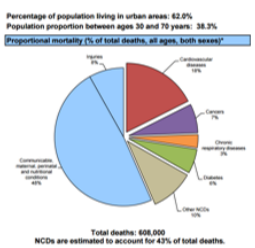
Some effects of second-hand smoke on Non-Smokers

X unhealthy lungs when breathing in tobacco smoke

X Harmful, fatty substances build up in the blood vessels when constantly breathing in harmful substances

The longer you breathe in second-hand smoke the more harmful substances build up in your body!

Appendix I: Cover and content page of the Health Promotion Manual

A Guide to Promoting Health in the Workplace: Tobacco Use Note: - May you please circle any words that might be difficult to understand in this manual? - Please feel free to suggest any ideas/concepts for photos  Please write any comments or suggestions here:	A Guide to Promoting Health in the Workplace: Tobacco Use Note: - May you please circle any words that might be difficult to understand in this manual? - Please feel free to suggest any ideas/concepts for photos Content Page Module 1 5 Preface 5 Unit 1.1: Introduction 5 The problem of Tobacco Use 5 Module 2 5 Unit 2.1: Implementing a Workplace Health Promotion programme on tobacco use 5 Module 3 6 Unit 3.1: Understanding tobacco products 6 What is tobacco? 6 What is in tobacco smoke? 6 What is passive smoking? 7 What does these chemicals do to our bodies? 7 Tobacco use and death 8 Tobacco use and cardiovascular diseases 8 Smoking tobacco and respiratory diseases 9 Tobacco use and Cancer 9 Tobacco use and other health risks 10 Unit 3.2: Understanding tobacco user behaviour 10 Why do people use tobacco? 10 Why is tobacco so addictive? 11 What are the stages of addiction? 12 Stage 1: Developing attitudes and beliefs about tobacco 12 Stage 5: Becoming addicted to tobacco 12 Stage 3: Experimenting with tobacco 12 Stage 4: Regularly using tobacco 12 Stage 2: Trying tobacco 12 ABC Model of Attitude 13 The ABCs of tobacco use: 13 What are the withdrawal symptoms of tobacco use? 13 Lesson Plan 13 Unit 3.3: Why should we consider behaviour change? 14 Behaviour change 14 Please write any comments or suggestions here:
A Guide to Promoting Health in the Workplace: Tobacco Use Note: - May you please circle any words that might be difficult to understand in this manual? - Please feel free to suggest any ideas/concepts for photos Tobacco user behaviour change reluctance: 14 Stages of change: 14 1. Preconception: 16 2. Contemplation: 16 3. Preparation: 16 4. Action: 16 5. Maintenance: 16 6. Relapse: 16 Unit 3.4: Motivational interviewing 17 What is motivation? 17 What is motivational interviewing? 17 How do we practice MI? 18 Module 4: Support Staff Booklet 19 Unit 4.1: Health information leaflet 1 19 Tobacco use and our health 19 Unit 4.2: Health information leaflet 2 21 Why do people smoke? 21 Unit 4.3: Health information leaflet 3 23 How does smoking affect those around us? 23 Module 5: 25 Unit 5.1: How do we use HILs in Health Promotion? 25 There are a few factors to consider about the participants when promoting health with an HIL: 25 Lesson Plan: 25 Appendices 26 Appendix 1: 26 The Peer Educators 26 Health Promotion Volunteers 26 List of Tables 27 List of Figures 27 List of Lesson Plans 27 Acknowledgements 27 References 27 Please write any comments or suggestions here:	A Guide to Promoting Health in the Workplace: Tobacco Use Note: - May you please circle any words that might be difficult to understand in this manual? - Please feel free to suggest any ideas/concepts for photos Module 1 Preface Unit 1.1: Introduction Non-communicable diseases (NCDs) have reached epidemic status in developing countries due to the rapid changes in lifestyles associated with urbanisation. NCDs are currently responsible for almost 70% of global deaths, with the majority occurring in low- and middle-income countries. In 2014, an astounding 43% of deaths can be accredited to NCD deaths in South Africa. The complex challenges posed by NCDs can be addressed by focusing on the four basic modifiable risk factors, namely: unhealthy diets; tobacco use; harmful use of alcohol; and lack of physical activity. Tobacco use does not only cause NCDs, it aggravates NCDs, complicates disease control and tobacco use results in the death of 44 000 South Africans annually, currently positioning it as one of the largest contributing factors to NCDs.  Total deaths: 606,000 NCDs are estimated to account for 43% of total deaths. The problem of Tobacco Use Tobacco use has detrimental effects on health and development. Tobacco products are very addictive. Demographical factors, culture and the low health literacy combined with tobacco marketing contribute to the increasing mortality rates triggered by the tobacco prevalence in South Africa. This manual contains a step by step practical guideline for implementing a health promotion programme on tobacco use prevention for the support staff using health information leaflets. Module 2 Unit 2.1: Implementing a Workplace Health Promotion programme on tobacco use Tobacco use has become a global epidemic, with dire consequences on health and development. It is estimated that the number of tobacco smokers will increase to 1.6 billion within the next 25 years. It is also estimated that there are close to 1 billion male and 0.25 billion female tobacco smokers globally, with 99000 young individuals starting to smoke their first tobacco product annually. Tobacco also causes increased absenteeism from work, and increased healthcare utilization and cost. Please write any comments or suggestions here:

- Note:
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Health promotion is key to the growth of empowered individuals, groups, and a community, through the use of systemic strategies to improve health knowledge, attitudes, skills, and behaviour. A healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety, and wellbeing of all workers, and to ensure the sustainability of that workplace. Non-communicable diseases occur mostly because of unhealthy lifestyle choices, and these lifestyle choices can be positively influenced through implementing the appropriate health promotion strategies. Health promotion can therefore assist staff members to comprehend, and avoid, the negative effects of these lifestyle factors, through the provision of the appropriate information, counselling, and educational measures to improve their work efficiency and effectiveness.

Module 3

Unit 3.1: Understanding tobacco products

What is tobacco?

Tobacco is a green, leafy plant that is grown in warm climates. After the tobacco plant is picked, it is dried, ground up, and used in different ways. It can be smoked in a cigarette, pipe, or cigar. It can be chewed (called smokeless tobacco or chewing tobacco) or sniffed through the nose (called snuff).

What is in tobacco smoke?

At least 250 of these chemicals are known to be harmful and 50 are known to cause cancer.

DID YOU KNOW?

When tobacco products are burned or smoked it releases more than 7000 hazardous chemicals into the air such as:

- Nicotine – used as insecticide
- Tar – material for paving roads
- Carbon Monoxide – released in car exhaust fumes
- Ammonia – a common household cleaner
- Acetone – found in nail polish remover
- Arsenic – used in rat poison
- Benzene – found in detergents
- Butane – used in lighter fluid
- Formaldehyde – to preserve dead bodies
- Hexamine – found in lighter fluid
- Lead – used in batteries
- Naphthalene – found in mothballs
- Methanol – used in fuel



Please write any comments or suggestions here:

- Note:
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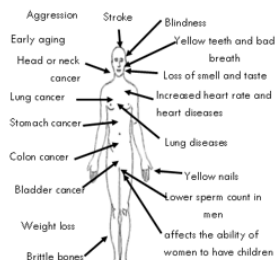
What is passive smoking?

Passive smoking or second-hand smoke is the combination of the smoke exhaled by a smoker and the smoke that comes from the end of a burning tobacco product. When a non-smoker breathes in this smoke, it is often referred to as passive smoking. The smoke from the burning end of the tobacco product has more harmful chemicals than the smoke breathed in by the smoker. This is because the burning end does not have a filter. These harmful chemicals can stay in the air for up to 4 hours!



What do these chemicals do to our bodies?

Tobacco products affect each and every organ in the body after it has been consumed, some are indicated in the figure below:



Please write any comments or suggestions here:

- Note:
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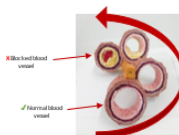
Tobacco use and death

Tobacco causes half of its users to die prematurely after living with the burden of tobacco related diseases. Tobacco kills approximately 6 million people every year and more than 5 million of those deaths are the result of direct tobacco use while more than 600 000 are the result of non-smokers being exposed to second-hand smoke. There are 44 000 South Africans dying every year as a result of tobacco use.

Tobacco use and cardiovascular diseases

Tobacco use, smoking in particular, increases the risk of developing:

- Coronary heart disease by 2 to 4 times
- Stroke by 2 to 4 times

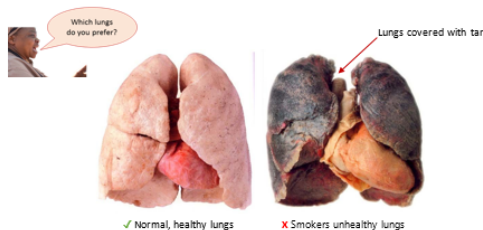


Tobacco use causes fatty substances to build up in the inside of the blood vessels until it eventually blocks the blood vessel. A blocked blood vessel can result in a heart attack, stroke and other cardiovascular diseases like hypertension. Tobacco use also makes the blood vessels hard and inelastic.

Please write any comments or suggestions here:

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Smoking tobacco and respiratory diseases



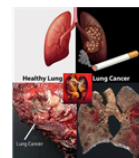
Tobacco products cause respiratory diseases such as:

- Asthma
- Increases the risk for Tuberculosis
- Increases the risk for other respiratory infections
- Chronic obstructive pulmonary disease (COPD)
- Slows down lung growth in children
- Lung cancer
- Makes other chronic lung diseases more severe

Tobacco use and Cancer

Tobacco products can cause the following cancers:

- Bladder
- Blood
- Cervix
- Colon and rectum
- Esophagus**
- Kidney and ureter
- Larynx
- Liver
- Oropharynx (includes parts of the throat, tongue, soft palate, and the tonsils)
- Pancreas
- Stomach
- Trachea, bronchus, and lung



Please write any comments or suggestions here:

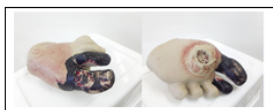
Note: A Guide to Promoting Health in the Workplace: Tobacco Use

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Tobacco use and other health risks

Tobacco can also cause diabetes. Smokers stand a 30% to 40% chance of obtaining diabetes compared to non-smokers. When a person has uncontrolled diabetes, they are at a higher risk of developing gangrene (tissue death) as shown in the picture below. Gangrene can lead to amputation of the affected area.



Tobacco use can also make it harder for a woman to become pregnant and can affect her baby's health before and after birth. Tobacco use, smoking in particular, increases the risk for:

- Preterm (early) delivery
- Stillbirth (death of the baby before birth)
- Low birth weight
- Sudden Infant Death Syndrome (SIDS)
- Ectopic pregnancy
- Orofacial clefts in infant



Tobacco use can also affect the sperm production in men, which reduce fertility and also increases the risk for birth defects and miscarriage in the female partner.

Tobacco products affect the bone health resulting in brittle bones. It also causes unhealthy teeth and gums which could lead to mouth ulcers and tooth loss.



Unit 3.2: Understanding tobacco user behaviour

Why do people use tobacco?

Smoking tobacco is the most common way of consuming tobacco. There are many different reasons why people smoke tobacco some of them are listed below:

1. It makes you look attractive

Many perceive smoking to be an attractive act. Smoking tobacco is becoming a more socially unacceptable behaviour and is therefore not considered to be as attractive anymore. Smoking also provides the smoker with bad breath and body odour; yellow, unhealthy teeth and gums; yellow nails, cancers and diseases; and some even cough all the time.

2. It is fun and relaxing

Some consider smoking to be fun as it provides the user with a sense of pleasure, specifically in a time of stress. This sensation only lasts for 20 min or less and then the craving to smoke again intensifies over time as the user experiences signs of withdrawal. These symptoms of withdrawal aggravates the initial feelings of stress and anxiety. This is one of the main causes

Please write any comments or suggestions here:

Please write any comments or suggestions here:

Note: A Guide to Promoting Health in the Workplace: Tobacco Use

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What are the stages of addiction?

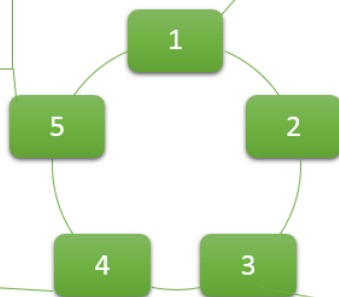
The initiation and development of tobacco use among children, adolescents and adults progresses in stages, namely;

Stage 5: Becoming addicted to tobacco

The individual is now consistently using tobacco and is considered to be addicted, making the behaviour fully part of their everyday lifestyle. These individuals have developed a pattern of tobacco use. This stage is also called the maintenance phase.

Stage 4: Regularly using tobacco

Individuals within this stage are considered to be regular tobacco users and they change their environments so that this behaviour is likely to occur. This stage is also called the action phase. If this behaviour is not sufficiently reinforced the individual may move back into the previous stages.



Stage 1: Developing attitudes and beliefs about tobacco

Culture is a mixture of behaviours, values, attitudes, and beliefs that are shared by a group of people and passed along by communication and imitation from one generation to the next. The cultural beliefs of a specific community influence their healthcare practices and local concepts about illness. People acquire beliefs through 2 main ways;

- Through direct observation (e.g. observing the behaviour of other tobacco users)
- Acceptance of Information (from other sources e.g. the television, radio, newspaper, another person concerning tobacco use)

These beliefs can influence an individual's attitude and eventually the intention and health behaviour towards tobacco use such as trying tobacco. This stage is also the pre-contemplation phase.

Stage 2: Trying tobacco

During this stage the individual is contemplating on the use of tobacco. The individual becomes more aware of tobacco use, is open to tobacco use and/or experiences they desire to experiment with tobacco use. They think about trying tobacco products and might even have a few attempts that might influence their decision to continue.

Stage 3: Experimenting with tobacco

In this stage, the individual has some intention to use tobacco and may actively start seeking out individuals who use tobacco to fully begin experimenting with tobacco use. The continuation of tobacco use is often reinforced in this stage by the effects of tobacco use e.g. dizziness and/ or the positive reinforcement from friends and media. This stage is also called the preparation phase.

Please write any comments or suggestions here:

Note:

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ABC Model of Attitude

Attitude can be described as an expression of favour or disfavour towards a person thing or event. There are three components of attitude:

A Affective Component

- This component relates to some form of judgment or positive/negative evaluation of the object, person or task. It refers to a person's feelings towards a task, something or someone else.

B Behavioural Component

- This is a person's behaviour relative to the subject of the overall attitude. It is how the attitude influences action or behaviour.

C Cognitive Component

- This component refers to the belief or knowledge of a person towards the subject of the overall attitude.

The ABCs of tobacco use:

	Examples
A Affective Component	Smoking tobacco is unattractive
B Behavioural Component	I know smoking is dangerous, yet I continue to smoke tobacco
C Cognitive Component	Smoking tobacco is harmful to my health

These factors allow one to unpack the reasons to why people might use tobacco, their perceptions towards tobacco use and also assist in influencing healthy behaviour.

What are the withdrawal symptoms of tobacco use?

The withdrawal symptoms can vary from person to person. These are the general signs and symptoms of tobacco withdrawal (you might feel):



These symptoms make you want to smoke again!

Lesson Plan

MAY YOU PLEASE SUGGEST ANY ACTIVITIES FOR THIS MODULE?

Please write any comments or suggestions here:

Note:

- May you please circle any words that might be difficult to understand in this manual?
- Please feel free to suggest any ideas/concepts for photos

14

Unit 3.3: Why should we consider behaviour change?

- Reducing tobacco use to eventually stop could greatly reduce the risk of developing tobacco-related diseases such as non-communicable diseases for both the tobacco-user and those around him/her.
- There is more money available for basic needs such as food, water, education etc.
- To contribute to a cleaner and healthier environment
- To be more productive at work
- Improved quality of life
- This healthy behaviour will set an example to those who might be in the pre-contemplation phase/other stages of addiction.

Behaviour change

Behaviour is the result of the interaction between what we believe and how we feel. If we want to change behaviour it is necessary to change the underlying beliefs and feelings related to that behaviour. Identifying the health problem is not always sufficient motivation to produce an associated reduction in risk related to that health problem. Health behaviours can be influenced by health promotion techniques.

Tobacco user behaviour change reluctance:

Tobacco users may know that it is dangerous to use tobacco but some find it difficult to give up. Other tobacco users often resist behaviour change. To address this disinclination, it is important to investigate and comprehend why they are reluctant to change, and the processes needed to encourage a positive change in behaviour. According to the WHO factors that result in behaviour change reluctance may be:

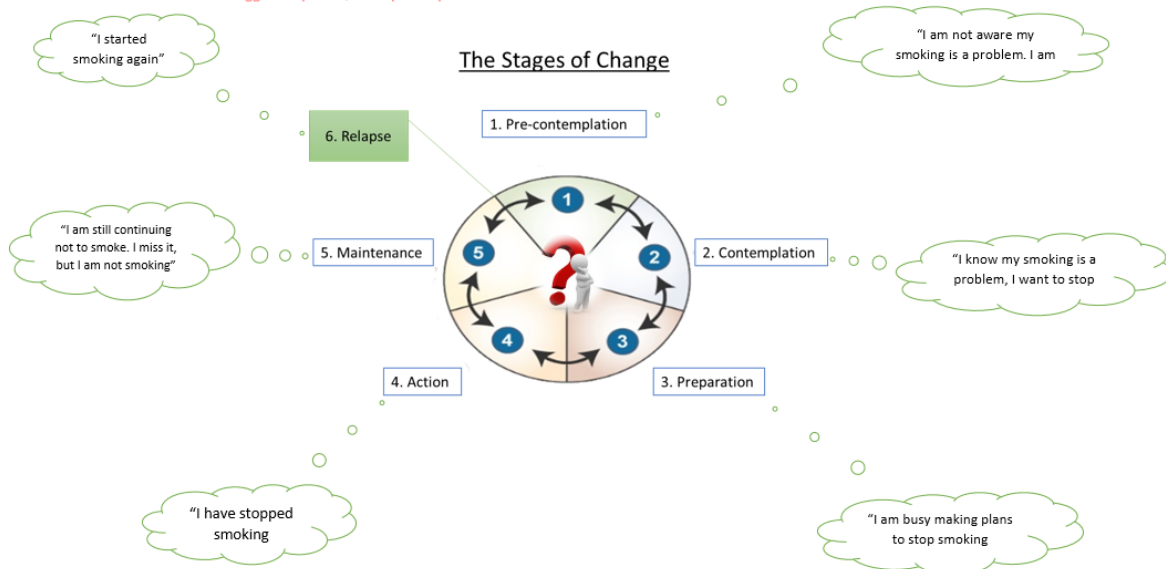
- Behaviours that are unhealthy often seem beneficial to the tobacco user in other ways
- Behaviour change may seem impossible for the tobacco user
- Tobacco users are not easily convinced that tobacco use is a problem for them
- Tobacco users might not be interested in change
- The user is not aware of the negative health effects of tobacco consumption
- The user is addicted to the substance, or it has become a habit.

Stages of change:

According to Prochaska and DiClemente, there are six stages an individual goes through to encourage behavioural change. These are: precontemplation, contemplation, preparation, action, maintenance, and relapse (WHO Europe, 2016).

Note:

- May you please circle any words that might be difficult to understand in this manual?
- Please feel free to suggest any ideas/concepts for photos



Please write any comments or suggestions here:

Note: A Guide to Promoting Health in the Workplace: Tobacco Use

- May you please circle any words that might be difficult to understand in this manual?
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1. **Preconception:**
In this stage the affected individual is not currently considering change. They may be in a state of complete ignorance. When attempting to encourage behavioural change in this stage, one has to aid the individual into developing a reason for change, validate the individual's experience, encourage further self-exploration, and explain and personalize the risk.

2. **Contemplation:**
In this stage, the individual is ambivalent about the change. To encourage change in this stage would require a similar approach to that of the preconception stage. The initial act would be to validate the individual's experience, and then to clarify the individual's perceptions of the pros and cons of the attempted behavioural change. The individual will then need to be encouraged to undergo further self-exploration, leaving the door open for moving into the preparation stage.

3. **Preparation:**
During this stage, some individuals experience a desire to and are attempting to change. To encourage behaviour change here, one has to praise the decision to change behaviour, prioritize the behaviour change opportunities, identify, and assist with the problem solving (overcoming predicted obstacles), encourage the initial small steps, and, lastly, encouraging the identification of social support.

4. **Action:**
This stage involves practising the new behaviour adoptions. To encourage action continuation, it is important to focus on restructuring cues and social supports, to sustain self-efficacy for dealing with obstacles, to combat the possible feelings of loss, and to restate the long-term benefits.

5. **Maintenance:**
The individual sustains a continued commitment to the new behaviour past a few months, for at least a few years.

6. **Relapse:**
Recommencement of old behaviours.

In order to enable one to have influence over themselves, institutions, or society, the individual, in part, requires access to information and resources to make proper informed lifestyle decisions. Health promotion is a way forward, using these models, because focusing only the treatment of NCDs, is not sustainable in LMICs when it continues to rise as an epidemic. It is important to shift towards the prevention of NCDs to empower individuals to make informed lifestyle choices.

Please write any comments or suggestions here:

Note: A Guide to Promoting Health in the Workplace: Tobacco Use

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- Please feel free to suggest any ideas/concepts for photos

Unit 3.4: Motivational interviewing

Tobacco users are usually aware of the dangers of this behaviour but continue to use tobacco anyway. They may want to stop using tobacco, but at the same time they do not want to; this is called ambivalence. Ambivalence is the natural state of uncertainty caused by conflicting feelings about the specific behaviour. They want to stop the behaviour but might claim that their health problems are not all that serious. It is important to understand and accept the individual's ambivalence because ambivalence is often the central problem and lack of motivation can be a manifestation of this ambivalence. Tobacco use results in chronic illnesses that require a degree of self-management and demands high levels of continued motivation.

What is motivation?

Motivation is considered to be a state of readiness or eagerness to change. Motivation is the process that initiates, guides, and maintains goal-orientated behaviours. It is motivation that causes an individual to act, whether it is to drink a glass of water to reduce thirst, or in this case, reducing tobacco consumption to be healthier. There are eight motivational strategies.

1. Giving advice
2. Removing barriers
3. Providing choice
4. Decreasing desirability
5. Practising empathy
6. Providing feedback
7. Clarifying goals
8. Active helping

As a Peer Educator, what are my choices to motivate support staff to use tobacco responsibly?



What is motivational interviewing?

Motivational interviewing (MI) is a style of communication (conversation) designed to strengthen motivation and commitment to behaviour change. This is done in a way that is not confrontational or persuasive. This technique works to address the ambivalence to change through assisting tobacco users to:

- Discover their own interest in considering and/or making a change in their life (e.g., reducing the use of tobacco to eventually stop the behaviour completely)
- Express in their own words their desire for change (i.e., "change-talk")
- Examine their ambivalence about the change
- Plan for and begin the process of change
- Elicit and strengthen change-talk
- Enhance their confidence in taking action and noticing that even small, incremental changes are important
- Strengthen their commitment to change

MAY YOU PLEASE SUGGEST ANY ACTIVITIES FOR THIS MODULE?

Please write any comments or suggestions here:

Note: A Guide to Promoting Health in the Workplace: Tobacco Use

- May you please circle any words that might be difficult to understand in this manual?
- Please feel free to suggest any ideas/concepts for photos

How do we practice MI? There are five core principles of MI:

1. Express Empathy

• Empathy is the ability to understand and share the feelings of another. This is a fundamental factor in MI. Demonstrating empathy is conveying a real, informed understanding of the individual's health problem and what maintains the ambivalence. Demonstrating empathy conveys understanding, acceptance and displays interest without judgement. These factors are important in changing behaviour.

2. Avoid Argument

• Arguments are considered counterproductive. Actively challenging the tobacco user's position may result in the user becoming defensive and present arguments for not changing. It is therefore important to be prepared to listen carefully to the health problem presented by the tobacco user.

3. Roll with resistance

• Resistance to change is a normal reaction by those considering change. The aim here is not to argue with the statements made by the tobacco user but to delicately challenge the thought process that underlie the behaviour in order to shift the users perspective of the situation.

4. Develop Discrepancy

• The user needs to have goals to work towards. Discrepancy is amplified between where the user is currently and where they want to be. Realistic goals should be generated by the user him/herself and should not be imposed on them.

5. Support Self-Efficacy

• This step involve getting the user to take responsibility of their health. Self-efficacy refers to the degree of belief that a tobacco user has in his/her ability to change. The user's confidence in his/her ability to change is an important factor here. Even when someone is committed to making a change, the individual might be frustrated by a lack of confidence about their ability to achieve the change. One needs to consistently respect the user and his/her decisions, to make the user feel more secure in the choices they make and improve their confidence. Encouraging the user to make overt positive statements that reflect a sense of self-efficacy will assist to 'reframe' their thinking.

Please write any comments or suggestions here:

Appendix J: The Project time line

Year	Month	Planning
2016	19 March	First meeting with Supervisor
	22 January	Submission of proposal to Higher Degrees Committee
	29 January	Higher Degrees Committee meeting
	05 February	Ethics Committee clearance
	08 February	Higher Degrees Committee clearance
	February to Mid-March	Exploration phase: • Design and test SSI and FGD question guides • Meet key stakeholders to discuss the logistics of the project • Conduct SSIs with key stakeholders, using a pre-tested question guide • Conduct FGDs with support staff / peer educators.
	Mid-March-April	• Design and test Information leaflets, according to the topics suggested by peer educators.
	May to July	Commence with Intervention Phase: • Formation and training of Health Promoters, • Conduct HP FGDs for each topic every 4 weeks
2017	August to October	Design and test Health Promotion manual with Health Promoters
	27 January - 2 February	Workplace Health Promotion Workshop
	16 March	Focus Group Discussion
	14 June	Final Evaluation Focus Group Discussion (post-post-Intervention questionnaire)

Appendix K: 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 • Superior= 5th grade or lower • Adequate=6th to 8th grade • Not suitable= 9th grade and above	
	(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	
6. Cultural appropriateness	(a) Cultural match	
	(b) Cultural image and examples	
	Total score	

Appendix L: 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	

Appendix M: Workplace health promotion workshop role play

Role Play: How to use the tobacco leaflets

Characters	Name of Character
Peer educator	
Support staff member	
Reporter	
What worked?	
What did not work?	

Appendix N: Validity Questionnaire

Please kindly complete questionnaire below for each HIL

Name of reviewer:

Title of Health Information Leaflet (HIL):

Date reviewed:

Note:

May you please circle any words that might be difficult to understand for the target audience in the HIL?

Please feel free to suggest any ideas/concepts/information necessary in the HIL or in the space provided below:

Please respond the questions below:

1. Is the information contained in the HIL accurate? Why?

2. Is the information suitable for the target population (RU support staff)? Why?

3. Would you consider the information contained in the HIL biased? Why?

4. Would you consider the information contained in the HIL current or up-to-date? Why?

5. Does the information contained in the HIL adequately cover the topic? Why?

6. Please feel free to provide any other comments or suggestions:

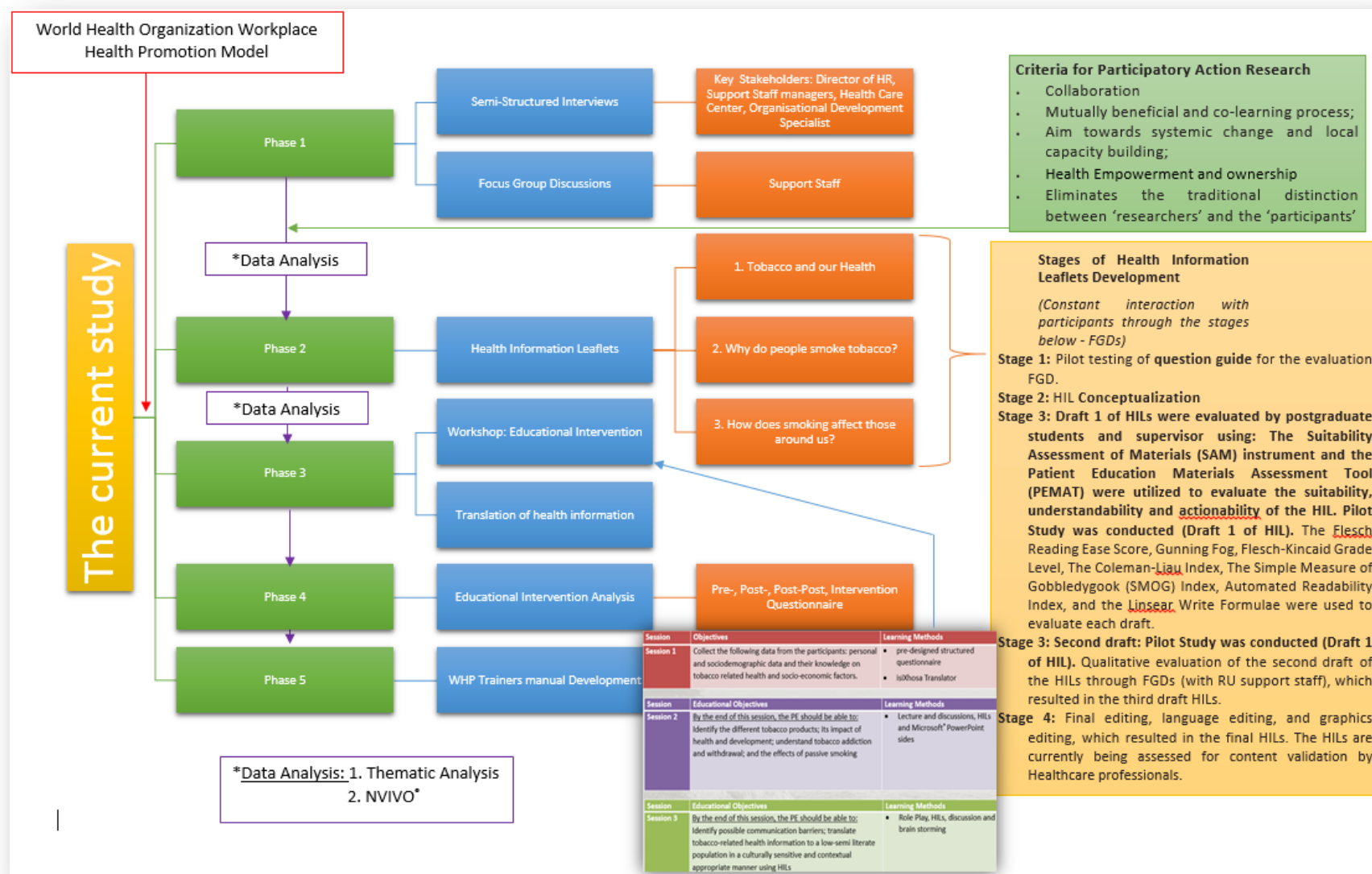
Thank you!

Appendix O: Health information Checklist

Table 29: Health information leaflet design checklist

Design Characteristics	Yes	No	Not Applicable
Content			
Does it align with participant needs?			
Is the content relevant?			
Is the content up-to-date?			
Is the content accurate?			
Is the content culturally sensitive?			
Does the HIL contain a content summary section?			
Does the HIL improve reader actionability?			
Format and layout			
Is the information well-organised under each heading?			
Is the font 12-point type or larger?			
Does the headings stand out from the body of text?			
Is there a logical flow (navigation) of information throughout the HIL?			
Is the HIL visually appealing to the reader?			
Avoid too much bold and italics			
Was the bullet point format applied?			
Was the tri-fold format adopted?			
Illustrations			
Were the illustrations clear and uncluttered?			
Were the illustrations relevant, appropriate and culturally sensitive?			
Were the illustrations well positioned to relevant text?			
Does it enhance the understandability and recall of the HIL?			
Writing style			
Was it written in 'everyday language'?			
Were medical terms explained?			
Does the HIL contain personalised pronouns?			
Was the reading level appropriate for the readers?			
Was the HIL strategically laid out with no more than one idea per sentence/paragraph/section?			
Was the HIL written in active voice?			
Has the HIL been checked for grammatical and spelling errors?			
Does the HIL perform its required purpose?			

Appendix P: Study design overview



TOBACCO AND OUR HEALTH

How is Tobacco used?



Smoked, Chewed and Sniffed



What chemicals are in tobacco?

Tobacco, Nicotine, Chemicals found in toilet cleaners, insecticides, tea, coffee etc. Paint and many other chemicals.



Tobacco is addictive!

Why is second-hand smoke more dangerous than smoking itself?

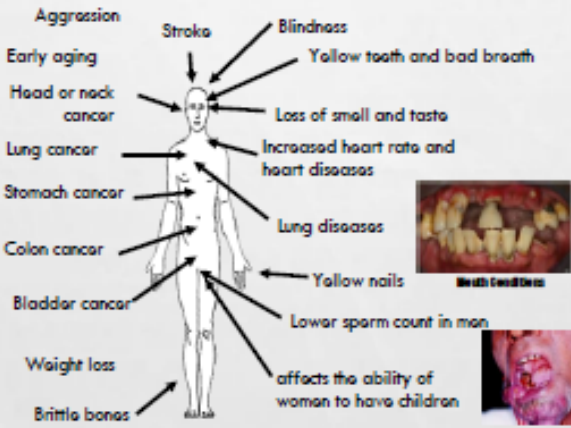
Filter end of the cigarette. It protects the smoker slightly.

Harmful chemicals released from burning end. It causes more harm to non-smoker!



Harmful chemicals are released from cigarette burning end

What does tobacco do to our health?



Aggression

Early aging

Head or neck cancer

Lung cancer

Stomach cancer

Colon cancer

Bladder cancer

Weight loss

Brittle bones

Stroke

Blindness

Yellow teeth and bad breath

Loss of smell and taste

Increased heart rate and heart diseases

Lung diseases

Yellow nails

Lower sperm count in men

affects the ability of woman to have children



Healthy lungs smoker's lungs



Healthy teeth Smoker's teeth



Smoker can cause nose bleed



Prevented clefts to heal



Heart disease

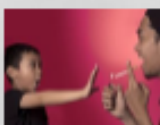


Cancers of the mouth

Smoking tobacco is harmful to the whole body!

How to avoid breathing in second-hand smoke?

- Ask smokers not to smoke inside a building or a car
- Ask smokers not to smoke around you
- Avoid going to areas where people are smoking
- Open the windows
- Ask caregivers not to smoke around children



Do not smoke around children

It is possible to stop smoking

With support from:

- Family
- Friends
- Peers with positive influence
- People you work with

Find activities to keep you from thinking of smoking such as:

- Playing a sport
- Chew sugarless gum
- Finding a group of non-smokers to interact with

Healthy food to help you fight the cravings and smoke less:

- Water, milk, cinnamon, ginger, turmeric, oranges, tomatoes and other fruits and vegetables



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Let's make healthy choices!

Theodore Duxbury, et al

Filename: 10 October 2018 np examiners feedback addressed Theodore
Duxbury MPharm thesis 12D6619.docx
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Template: /Users/theodore/Library/Group Containers/UBF8T346G9.Office/User Content.localized/Templates.localized/Normal.dotm
Title:
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Number of Characters: 1 146 544 (approx.)