

**THE APPLICATION OF THE THEORIES OF REASONED ACTION AND
PLANNED BEHAVIOUR TO A WORKPLACE HIV/AIDS HEALTH
PROMOTION PROGRAMME**

By

EMMANUEL RAMMULE TLOU

submitted in accordance with the requirements

for the degree of

DOCTOR OF PHILOSOPHY

in the subject of

PSYCHOLOGY

at the

UNIVERSITY OF SOUTH AFRICA

PROMOTER: PROF. A C VAN DYK

SEPTEMBER 2009

SUMMARY

This study applied the theory of reasoned action (TRA) and its extension, the theory of planned behaviour (TPB) to the design of a workplace HIV/AIDS health promotion programme. The purpose of the study was to determine if the variables of the TRA and TPB would predict intentions to change HIV/AIDS health behaviour, whether a theory-based intervention would result in health behaviour change over time and if there would be any significant health behaviour differences among participants who received a theory-based intervention and those who received an information-only intervention.

In a longitudinal, quasi-experimental study, 170 government employees were divided into two groups. One group comprised 92 employees who participated in a HIV/AIDS health promotion workshop based on the theories of reasoned action and planned behaviour. The other group comprised 78 employees who took part in an educational information session about HIV and AIDS. An elicitation study was conducted with a sample of 38 employees from the research population two months prior to the commencement of the study. The findings of the elicitation study informed the design of research questionnaires and an intervention workshop. Both groups of participants (theory-based workshop and information-only workshop) were measured on HIV/AIDS health behaviour intentions and HIV/AIDS health behaviour (condom use, seeking HIV testing and monogamy) across three measurement periods over a six month period.

The results of the study showed that the combined theoretical variables predicted intentions to use condoms and to seek HIV testing, with attitudes having the main effect on intentions. There was, however, no significant health behaviour change across the three measurement periods. There were also no health behaviour differences between the two intervention conditions at one month and six months post-intervention.

The study concludes that the intervention based on the theories of reasoned action and planned behaviour did not produce health behaviour change. The study also identified barriers to AIDS health behaviour in the South African context that the theories of reasoned action and planned behaviour cannot explain. Ways in which the theories of reasoned action and planned behaviour can be adapted to HIV/AIDS education in collectivist cultures are proposed.

Key terms: Theory of reasoned action; Theory of planned behaviour; Health behaviour; Attitudes; Subjective norms; Perceived behavioural control; Condom use; HIV testing; Monogamy.

Student Number: 700-341-2

I declare that ***The Application of the Theories of Reasoned Action and Planned Behaviour to a Workplace HIV/AIDS Health Promotion Programme*** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

SIGNATURE

(E. R. Tlou)

DATE

ACKNOWLEDGEMENTS

I would like to acknowledge the following people, to whom I will remain eternally grateful, for their role in the completion of this thesis:

- My promoter, Professor Aletta Van Dyk: *Thank you for nudging me along in your calm but provocative manner. My short association with you has left a large footprint in my ROM (Read-only Memory). You have made me enjoy our subject even more. Also, thank you for motivating for the funding.*
- My soul mate and most-important other (aka wife), Daisy: *Like a true pillar, you stood firm and never complained when I sometimes spent more time with the thesis than with you. As you can now see, your faith has not let you down. You are my one true friend.*
- My mother and first teacher, Dikeledi: *You taught me to read before I walked into a classroom. For me, the love for books that you instilled in me at a tender age has reinvented the phrase “Man’s best friend”. When I was a child you said I must become a doctor when I grow up. As you can see, I am one. All thanks to your inspiration and belief in me.*
- My beautiful and sometimes mischievous babies, Keagile (Baby) and Koketso (Kokza): *Now that the book is written, I have run out of excuses for not taking you fishing and camping as often as you want. The noises you made in the background always reminded me that I had something to go back to when the book was finally written.*
- My sisters, Mokgaetsi, Penny (Rrenkgolo) and Tiny: *In your own little ways you were the foundations of my education. I would not have been the person I am today if you did not shape me.*
- My good friends Sonto and Pelo Nkaiseng, John Donaldson, Carl Dibetso (Mokwena) and Segokodi Thoka: *If anybody would have given up anything to see me succeed, it is you. Your constant enquiries about my progress always reminded me of the disappointments I would cause if I did not succeed.*
- Participants in the study: *Some of you started calling me Doctor even before I scored the questionnaires. Thank you for the support. This would not have been possible without you.*

CONTENTS

CHAPTER 1: INTRODUCTION: OVERVIEW OF THE RELEVANCE OF THEORY-BASED RESEARCH ON HIV/AIDS HEALTH PROMOTION

1.1	Background to the Study	1
1.2	The Concepts of Health Behaviour and Health Promotion	3
1.2.1	Health Behaviour	4
1.2.2	Health Promotion	4
1.3	Health Promotion in the Workplace	7
1.4	Behavioural Theory in HIV/AIDS Health Promotion	9
1.4.1	Health Belief Model	11
1.4.2	Transtheoretical Model or Stages of Change Model	12
1.4.3	Precaution Adoption Process Model	14
1.4.4	Theory of Reasoned Action and Theory of Planned Behaviour	16
1.5	Motivation for the Study	18
1.6	Operational Definitions	20
1.6.1	Health Behaviour	20
1.6.2	Health Promotion	21
1.7	Research Objectives	21
1.8	Summary	23
1.9	Outline of the thesis	23

CHAPTER 2: THEORETICAL BACKGROUND: THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

2.1	Theory of Reasoned Action	26
-----	---------------------------	----

2.1.1	Determinants of Behavioural Intentions	28
2.1.2	Predicting Behaviour from Intentions	32
2.1.3	Determinants of Attitudinal and Normative Components	34
2.2	Theory of Planned Behaviour	38
2.2.1	Behavioural Beliefs and Attitudes towards Behaviour	42
2.2.2	Normative Beliefs and Subjective Norms	43
2.2.3	Control Beliefs and Perceived Behavioural Control	43
2.3	Critique of the Theory of Reasoned Action and the Theory of Planned Behaviour	44
2.4	Proposed extension of the Theories of Reasoned Action and Planned Behaviour	50
2.5	Summary	53

CHAPTER 3: LITERATURE REVIEW: HIV/AIDS RESEARCH BASED ON THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

3.1	Research Approaches to HIV/AIDS Prevention	55
3.1.1	Intervention Studies	56
3.1.2	Descriptive Surveys	56
3.1.3	Theory-based Research on HIV/AIDS-preventive Behaviour	57
3.2	HIV/AIDS Research Based on the Theory of Reasoned Action and the Theory of Planned Behaviour	59
3.2.1	Theories of Reasoned Action and Planned Behaviour and Condom Use	59
3.2.2	Theories of Reasoned Action and Planned Behaviour and Voluntary Counselling and Testing	76
3.2.3	Theories of Reasoned Action and Planned Behaviour and Monogamy	77

3.3	Critique of HIV/AIDS Research based on the Theories of Reasoned Action and Planned Behaviour	80
3.3.1	Sample Bias	80
3.3.2	Health Behaviour Bias	81
3.3.3	Methodology	81
3.3.4	Inconsistent Findings	82
3.4	Summary	83

CHAPTER 4: ELICITATION STUDY

4.1	Sample and Sampling Procedure	86
4.2	Elicitation Questionnaire Design	86
4.2.1	Aim	86
4.2.2	Description and Measurement	86
4.2.3	Administration	87
4.2.4	Scoring	88
4.3	Elicitation Study Findings	88
4.3.1	Condom Use Behaviour	88
4.3.2	HIV Testing Behaviour	93
4.3.3	Monogamous Behaviour	97
4.4	Intervention Implications of the Elicitation Study Findings	101
4.4.1	Condom Use Intervention Implications	101
4.4.2	HIV Testing Intervention Implications	102
4.4.3	Monogamy Intervention Implications	104
4.5	Summary	104

CHAPTER 5: RESEARCH METHODOLOGY

5.1	Research Objectives and Hypotheses	106
5.2	Research Design	110
5.3	Population and Sample	111
5.3.1	Sampling Technique	112
5.3.2	Sample Characteristics	112
5.4	Procedure	117
5.4.1	TRA/TPB Group	117
5.4.2	Information-only Group	118
5.5	Theory-based Intervention Workshop	119
5.5.1	Sub-session One: Introduction/Breaking the Ice	120
5.5.2	Sub-session Two: In-depth Discussion on Attitudes, Subjective Norms and Perceived Behavioural Control	121
5.5.3	Sub-session Three: Intention Formation	132
5.5.4	Sub-session Four: Learning Behavioural Skills	133
5.5.5	Sub-session Five: Consolidation	134
5.6	The Information-only Workshop	134
5.7	Measuring Instruments	135
5.7.1	Biographical Questionnaire	136
5.7.2	AIDS Health Behaviour Questionnaire	137
5.7.3	TRA/TPB Questionnaire	138
5.8	Statistical Analyses	145
5.9	Summary	146

CHAPTER 6: RESULTS

6.1	Prediction of Health Behaviour Intentions	147
6.1.1	Intention to Use Condoms	148

6.1.2 Intention to seek HIV Testing	149
6.1.3 Intention to have One Sex Partner	150
6.1.4 Conclusion on Prediction of Health Behaviour Intentions	150
6.2 Health Behaviour Change across Measurement Periods	151
6.2.1 Condom Use Behaviour across Three Measurement Periods	151
6.2.2 HIV Testing Behaviour across Three Measurement Periods	152
6.2.3 Monogamy across Three Measurement Periods	152
6.2.4 Conclusion on Health Behaviour Change	153
6.3 Health Behaviour Differences between the TRA/TPB Group and the Information-only Group	153
6.3.1 Differences in Condom Use Health Behaviour	154
6.3.2 Differences in HIV Testing Health Behaviour	155
6.3.3 Differences in Monogamy Health Behaviour	156
6.3.4 Conclusion on Health Behaviour Differences	157
6.4 Summary	157

CHAPTER 7: DISCUSSION

7.1 Did the Theories of Reasoned Action and Planned Behaviour Work in this South African Study?	159
7.1.1 Did TRA/TPB Variables Predict Health Behaviour Intentions?	160
7.1.2 Did the Theory-based Intervention Change Health Behaviour over Time?	162

7.1.3 Did Intervention Type Contribute to Health Behaviour Change?	163
7.2 Why the Theories of Reasoned Action and Planned Behaviour may not have worked: Analysis of Barriers to Health Behaviour Change	164
7.2.1 Condom Use Barriers	164
7.2.2 HIV Testing Barriers	169
7.2.3 Monogamy Barriers	172
7.3 Suggestions for Theory-based HIV/AIDS Interventions in the South African Workplace	174
7.3.1 Elicitation Interview	174
7.3.2 Deviation from the Compatibility Principle	176
7.3.3 Persuasive Health Message Frames	176
7.3.4 Peer Education and other Group-level Interventions	177
7.4 Limitations of the Study	178
7.4.1 Circumstantial Problems	179
7.4.2 Methodological Issues	180
7.5 Recommendations for Future Research	182
7.6 Summary	184
CHAPTER 8: CONCLUSION: REFLECTION ON LESSONS LEARNED	186
REFERENCES	191
APPENDICES	213

List of Figures

Figure 2.1: Factors Determining a Person's Behaviour	28
Figure 2.2: Theory of Planned Behaviour	41

List of Tables

Table 4.1: Condom Use Advantages	89
Table 4.2: Condom use Disadvantages	90
Table 4.3: Condom Use Subjective Norms	92
Table 4.4: Condom Use Perceived Behavioural Control	93
Table 4.5: HIV Testing Advantages	94
Table 4.6: HIV Testing Disadvantages	95
Table 4.7: HIV Testing Subjective Norms	96
Table 4.8: HIV Testing Perceived Behavioural Control	97
Table 4.9: Monogamy Advantages	98
Table 4.10: Monogamy Disadvantages	99
Table 4.11: Monogamy Subjective Norms	100
Table 4.12: Monogamy Perceived Behavioural Control	100
Table 5.1: Sample Size by Gender	114
Table 5.2: Highest Level of Education	115
Table 5.3: Sexual Relationship Status	116
Table 5.4: Known HIV Status	117
Table 6.1: Prediction of Health Behaviour Intentions	148
Table 6.2: ANOVA for Health Behaviour across Three Measurement Periods	152
Table 6.3: Condom Use Differences between TRA/TPB Group and Information-only Group at One Month (T2) and Six Months (T3) Post-intervention	154

Table 6.4: HIV Testing Differences between TRA/TPB Group and Information-only Group at One Month (T2) and Six Months (T3) Post-intervention	155
Table 6.5: Monogamy Differences between TRA/TPB Group and Information-only Group at One Month (T2) and Six Months (T3) Post-intervention	156

CHAPTER 1

INTRODUCTION: OVERVIEW OF THE RELEVANCE OF THEORY-BASED RESEARCH ON HIV/AIDS HEALTH PROMOTION

1.1 BACKGROUND TO THE STUDY

South Africa is reported to be one of the countries with the highest number of people living with HIV/AIDS in the world (AIDS Foundation Africa, n.d.). The AIDS Foundation Africa report cites the UNAIDS 2006 Global Report, which rated South Africa as having the sixth highest prevalence of HIV in the world, with 18.8% of the population estimated to be infected with this virus. The same report estimated that 320 000 people in South Africa died of AIDS-related conditions at the end of 2005. The national average of HIV-positive women attending antenatal clinics at the end of 2005 was 30.2%. Handelwang (2008) cites the Actuarial Society of South Africa statistic, which suggests that during 2008, 5.6 million South Africans, 20% of whom were in the 20–64 age range, were HIV positive, and that 370 000 people would have died of AIDS-related conditions by the end of 2008. The Human Sciences Research Council (2007) reported that there were an estimated 1 500 new HIV infections per day in South Africa. Hunter (2007) reported that between 1990 and 2005, HIV prevalence rates in South Africa jumped from less than 1% to around 29%. At the beginning of 2009 between 4.9 million and 6.1 million people in South Africa were HIV positive (Luseno & Wechsberg, 2009).

Rehle et al. (2007), in a study of the incidence of HIV infection in South Africa, examined 15 851 blood specimens of persons over two years of age living in homes (that is, persons not living in institutions). Rehle and colleagues found HIV incidence in this population to be 1.4%,

representing an estimated 571 000 new infections in 2005. Among persons aged 15–49 years, the incidence was 2.4%, representing 500 000 new infections in 2005. Of all new infections, 34% occurred in young people aged 15–24 years, with females accounting for 90%. This, according to Rehle and colleagues, is an indication that prevention programmes in South Africa have failed to address HIV incidence in high-risk categories, and that more efficient and targeted interventions are urgently required.

Commenting on the South African business context, Whiteside and Sunter (2000) noted that South Africa had the fastest growing HIV/AIDS epidemic in the world. Since Whiteside and Sunter's warning about the economic and labour impact of the spread of HIV infections on the workforce, the urgent need for workplace *health promotion* programmes to address HIV/AIDS has been well documented in popular South African human resource periodicals, for example Adendorff (2005), Bureau for Economic Research (2005), Davies (2004), McDonald (2004) and Wade (2006). Noting that the workplace provides an ideal gateway to HIV/AIDS prevention and care, Van Dyk (2008), echoing Whiteside and Sunter, advocates the development of a six-stage integrated strategy to manage HIV/AIDS in the workplace. Such a strategy, Van Dyk proposes, should comprise short and long-term measures to mitigate the impact of HIV/AIDS in the workplace. These authors acknowledge that HIV/AIDS has become not just a health, economic, political or social welfare issue - it has become a workplace issue that must be urgently addressed.

HIV/AIDS health promotion has been stepped up in the South African workplace in response to the dangers posed by the epidemic (Whiteside, 2000). However, as Whiteside laments, it appears that HIV/AIDS health promotion efforts have not had the effect they were supposed to have, since the infection rate continues to rise. Whiteside's observation points to a need to conduct empirical research in order to determine why there is an apparent poor correlation between HIV/AIDS education efforts and

HIV-preventive behaviour among the South African workforce, as well as identify more effective HIV/AIDS health promotion models.

Research conducted in North America and Europe on health issues such as HIV/AIDS employed various behavioural science conceptual models to try and understand how people comply or fail to comply with health recommendations and treatment regimens. Some researchers, notably Fisher and Fisher (1992) and Fisher, Fisher and Rye (1995), point to the problem that psychological research on HIV/AIDS has often relied on informal and *ad hoc* conceptualisations, and that the systematic application of formal psychological theory in this area is rare. There is an increasing need for HIV/AIDS behaviour change intervention models and health promotion models grounded in existing psychological theories.

The views expressed by the authors cited above pose a challenge to South African health psychology to design interventions that are derived from well-tested theories. In this study, the researcher will apply the theory of reasoned action (TRA) and its extension, the theory of planned behaviour (TPB), to a workplace HIV/AIDS health promotion programme. It is the first known attempt in South Africa to design a workplace health promotion model for HIV/AIDS derived from the theories of reasoned action and planned behaviour.

1.2 THE CONCEPTS OF HEALTH BEHAVIOUR AND HEALTH PROMOTION

The two concepts that form the foundation of this study and require detailed definition are *health behaviour* and *health promotion*.

1.2.1 Health Behaviour

Health behaviour is any activity people perform to maintain or improve their health (Sarafino, 2008). The best definition of health behaviour is provided by Feuerstein, Labbe and Kuczmierczyk (1987, p.240) who have defined it as “any activity undertaken by a person believing him- or herself to be healthy for the purpose of preventing disease or detecting it in an asymptomatic stage”. Schlebusch (1990) took this definition further with his concept of health protective behaviour (HPB), which he described as what people do in the belief that their behaviour facilitates or protects health. Health behaviour refers to not only overt behaviour, as suggested by Feuerstein et al., and Schlebusch. Glanz, Rimer and Lewis (2002, p.11) cite Gochman’s definition, which refers to health behaviour as “those personal attributes such as beliefs, expectations, motives, values, perceptions and other cognitive elements...that relate to health maintenance, to health restoration, and to health improvement”.

Health behaviour, according to the above definitions, is any combination of actions performed by people who are not yet ill, in order to prevent the onset of disease. In the context of HIV/AIDS, which is the focus of this study, health behaviour would include actions such as regular condom use, sexual abstinence or monogamy that people engage in because they believe such actions will protect them from HIV infection.

1.2.2 Health Promotion

Health promotion is not an easy concept to define, as it is conceptualised differently by various theorists and researchers. Glanz, Rimer and Lewis (2002, p.9) cite O’Donnell’s (1989) definition, which defines health promotion or health education as “the science and art of helping people change their lifestyle towards optimum health”. O’Donnell (2002) describes optimal health as a balance of physical, emotional, social,

spiritual and intellectual health, without sacrificing one area in order to achieve excellence in another. Glanz and colleagues go on to explain that lifestyle changes can be achieved by a combination of efforts to enhance awareness, change behaviour and create environments that support good health practices. This definition suggests that health education and health promotion are interchangeable concepts.

While some authors (for example, Glanz et al., 2002; Kemm & Close, 1995) do not make a distinction between health promotion and health education, others do. For example, Chen (2001) views health education as efforts to provide individuals with learning opportunities to voluntarily increase their current level of health. Health promotion, on the other hand, is directed at groups and communities. It is the process of enabling people to increase control over the environmental conditions that are conducive to improved health. Health promotion, according to this definition, is an externally-focused group effort that supplements the shortcomings of health education, which is more focused on individuals. Adopting a similar distinction, Reddy and Tobias (1994) and Kok, Schaalma, Ruiter, Van Empelen and Brug (2004) prefer to view health education as a strategy in the service of health promotion, rather than a separate or contradictory approach. Health education is any combination of learning opportunities or experiences about health that are aimed at achieving *voluntary* changes in health-related behaviour which will place *individuals* in a favourable health position. In contrast, health promotion is any combination of educational and environmental (that is, organisational, political and economic) supports for actions and conditions of living conducive to health (Kok et al., 2004; Reddy & Tobias, 1994).

A common thread in the different definitions presented by Chen (2001), Kok et al. (2004) and Reddy and Tobias (1994) is that health promotion could be understood from an individual, as well as an environmental, perspective. Using HIV/AIDS as an example, at an individual level (health education) individual persons are encouraged to make decisions to adopt

specific actions (for example, condom use) that will protect their health or result in positive health outcomes (for example, a good quality of life). The decisions made at an individual level may not reach fruition if specific circumstances (for example, workplace policies that require the provision of health support services) in those individuals' living contexts do not exist. Therefore, health promotion should mobilise policy makers (employers, governments, municipalities) to create conditions that will enable and support individuals to make correct decisions in terms of their health.

A more comprehensive definition that integrates the concepts of health promotion and health education in the sense captured above is that by McDonald and Bunton (2002). They regard health promotion as a strategy for promoting the health of whole populations. In this context, health promotion can be undertaken at an individual or structural level. At an individual level, it focuses on lifestyle changes, namely the identification and reduction of behavioural risk factors associated with illness or premature death. This, McDonald and Bunton contend, is also known as health education as it uses educational methodologies to try and change lifestyles. At a structural level, health promotion focuses on macro-social and political processes necessary for health improvement. The themes of health promotion often centre around fiscal and legislative measures aimed at building healthy public policies (South African examples would be the prohibition of public smoking, accessibility to health services and workplace HIV/AIDS policies).

McDonald and Bunton's (2002) dual conceptualisation of health promotion would be applicable in the workplace. At an individual level, employees need to achieve the necessary lifestyle changes through education with regard to the various risk factors that could result in illness or premature death. At a structural level, employers must introduce policies and programmes that will contribute towards health-enhancing work environments staffed by well-informed, healthy and productive people. In

the context of this thesis, the individual level would comprise health promotion workshops that would endeavour to encourage behavioural change as well as reinforce appropriate AIDS health behaviour. At a structural level, it is expected that a health promoting culture would be encouraged, in which HIV/AIDS management would be an integral part of human resource practices.

1.3 HEALTH PROMOTION IN THE WORKPLACE

According to O'Donnell (2002), health promotion in the workplace is a practice that evolved in the United States of America during the 1980s, partly because American companies include health insurance as a work benefit for their employees. Escalating health costs have compelled employers to find ways of keeping these costs low by keeping their employees healthy. To this end, companies have developed health promotion programmes to encourage healthy lifestyles in their employees. The goal of these programmes is to move employees towards a state of optimal health. Health promotion programmes, according to O'Donnell, can have an effect on three levels. On the first level, they can enhance awareness; on the second level, they can lead employees to change their lifestyles; and on the third and most significant level for managers, they can create environments that support healthy lifestyles. Health promotion in North America, as Downey and Sharp (2007) suggest, is seen by employers as a means of controlling employee benefit costs, especially where state-funded health programmes are absent and employers have to bear the cost of employee health insurance.

Health promotion is generally accepted as the most effective way of helping people change their lifestyles and move towards optimal health. As organisations recognise the value of healthy work environments, health promotion in the workplace has become recognised as a good management practice. Workplace health promotion not only makes

business sense - it also offers possibilities of reaching out to large numbers of the adult population in a constant setting over long periods of time (Huiskamp, King & Hatting, 2005). In addition, it provides an identified community with access to social support, and has economic reasons for improving health and productivity (Harris & Fries, 2002).

Bramford (1995) advanced the following reasons to motivate for the need to implement health promotion programmes in the workplace: people at work constitute nearly half of the British population (the same can be said about the South African population in the context of this study); employees cannot benefit from community-based health promotion programmes during working hours; they have difficulty accessing health practitioners during the day; and are a captive audience for eight hours a day. In the South African context, Huiskamp et al. (2005) echoed Bramford's views and added that the workplace is increasingly becoming an effective setting for health promotion for economic and sociological reasons. Key among these reasons is that a great number of people enter the workforce. This population, in turn, become role models in their communities. A major advantage is that working people are more stable, thus making long-term intervention and evaluation possible. Moreover, the social cohesion inherent in the workplace can provide peer pressure and support for conforming to healthy lifestyles.

In South Africa, the key focus of health promotion in the workplace is the enforcement of the Occupational Health and Safety Act 85 of 1993 and the implementation of the HIV/AIDS Technical Assistance Guidelines (TAG) issued by the Department of Labour. The Occupational Health and Safety Act is primarily concerned with the promotion of a safe physical work environment by preventing accidents and exposure to hazardous chemicals at work. The educational activities that the Act regulates are limited to raising the awareness of employers and employees with regard to environmental dangers. The TAG is intended to provide employers, employees and trade unions with the information they require to address

HIV/AIDS workplace issues and to deal with discrimination on the grounds of HIV status in line with the Employment Equity Act of 1998. There is no legal obligation for employers to provide health services in the workplace, although the provision of Employee Assistance Programmes (EAPs) is fairly widespread and recognised as being essential (Hooper, 2004). HIV/AIDS education is provided as part of EAP services in government and private organisations.

1.4 BEHAVIOURAL THEORY IN HIV/AIDS HEALTH PROMOTION

In the absence of a medical cure or vaccine for HIV/AIDS, changing high-risk behaviour remains the only available means to prevent HIV infection (DiClemente & Peterson, 1994). The contribution and systematic application of psychological or behavioural science theory to achieving the required behaviour change has been well supported (Fisher & Fisher, 1992; Kok et al., 2004; Steyn, 2005). Kok and colleagues posit that a health promotion programme is more likely to be successful when it is guided by social and behavioural science theories of health behaviour and health behaviour change. Theory-driven health promotion programmes require an understanding of the components of theories, as well as an understanding of operational and practical operations of these theories. The theories, however, must be applied appropriately and correctly. Witte (1995) added another dimension to Kok and colleagues' view on the significance of theory by positing that theories – which she also labels “ivory tower creations” – can be formidable and difficult to use. She instead proposes combining *parts* of successful and well-tested theories into a single framework. The advantage of a framework, unlike a theory which aims to explain human behaviour, is that it outlines what must be done to develop campaigns and programmes. A framework is therefore a “cookbook” approach that combines different components of theories that

are known to work, and has the advantage of saving the time of busy professionals.

Commenting on health messaging in the context of public health, Maibach and Parrot (1995) identify four main roles that behavioural science theory plays in the design of health messages. These are: *describing* the complex aspects of phenomena; *predicting* relationships and outcomes; *explaining* facts; and *prescribing* effective interventions. In addition to prediction of behaviour, Ewart (2004) considers psychological theories to be essential in specifying the modifiable causal processes or mechanisms that can be manipulated to effect change. Theory in health promotion and health education, according to Steyn (2005), falls into two broad categories of use, namely to understand the problem in terms of both its behavioural and environmental causes, and to understand the possible mechanisms for change. The views of these commentators imply that psychological theories can guide health professionals in designing behaviour change interventions necessary to prevent the spread of HIV infection.

There is no health behaviour conceptual framework for HIV/AIDS in the literature. Although numerous individual-level AIDS behavioural theories exist in the literature, there is no consensus regarding which theory is most accurate in explaining and predicting HIV risk or health behaviours (Noar, 2007). Noar outlines thirteen theories that could be applied to the understanding of HIV/AIDS health behaviour. As this study explores the development of HIV/AIDS health promotion based on two of the existing health behaviour theories, a brief synopsis of the conceptual framework for HIV/AIDS is provided below. This synopsis is limited to the four widely cited conceptual formulations used in relation to HIV/AIDS, namely the Health Belief Model (HBM) ; the Theory of Reasoned Action (TRA) and its extension, the Theory of Planned Behaviour (TPB); the Transtheoretical Model (TTM) or Stages of Change Model (SOC); and the Precaution Adoption Process Model (PAPM).

Weinstein, Rothman and Sutton (1998) divide behaviour change theories into *stage* theories and *continuum* theories. Stage theories assume that behaviour change occurs by progression through qualitatively different, sequential stages. The approach of continuum theories is to identify variables that influence action and to combine them in a prediction equation, which is formed by the combination of variables. Each person's position on the equation indicates their likelihood of taking action. The health belief model, the theory of reasoned action and the theory of planned behaviour are continuum theories. The transtheoretical model and the precaution adoption process model are stage theories.

A brief description of the aforementioned theories, including a critique of each, is presented below. A detailed analysis of the theory of reasoned action and the theory of planned behaviour will be presented in the next chapter.

1.4.1 Health Belief Model

According to the proponents of the health belief model, Becker and Maiman (1975), an individual's readiness to take action and engage in health-related behaviour relative to a particular health condition is a function of three factors. The first factor relates to the individual's beliefs or perceptions of his/her likelihood of *susceptibility* to an illness, as well as his/her perception of the *severity* of the consequences of having the illness (both susceptibility and severity constitute *perceived threat*). The second factor is the *perceived benefit* of action in contrast to the barrier to acting. Thus, the person's evaluation of the health behaviour both in terms of its gains or potential benefits in reducing possible susceptibility and severity of the illness, as well as *perceived barriers* to action, will determine whether or not a person will engage in health behaviour. The third factor relates to access to *cues to action*. Cues to action refer to cues that trigger appropriate health behaviour. These cues can be either

internal or external, the latter referring to stimuli in the environment (Bogart & Delahanty, 2004; Rimer, 2002).

The health belief model was not chosen for this study because empirical tests of the model in the context of HIV-preventive behaviour have failed to provide strong support for it (Lewis & Kashima, 1993; Montgomery et al., 1989; Warwick, Terry & Gallois, 1993). Montgomery and colleagues found that the model accounted for a small proportion of variance in HIV/AIDS health behaviour. A similar finding was made by Wilson, Lavelle, Greenspan and Wilson (1991) in their application of the health belief model to HIV-preventive behaviour in a Zimbabwean sample. The explanation given by Montgomery and colleagues for the poor utility of the health belief model is that the recommended behavioural responses to the AIDS threat (which, unlike other health threats, has no cure or vaccination) are more complex. People are required to modify their sexual behaviour, which may not be easy considering that such behaviours are influenced by a strong emotive and normative component. For this reason, the health belief model may be too simplistic to adequately account for variation in people's propensity to engage in AIDS-preventive behaviour. The other weakness of the health belief model, according to Warwick and colleagues, is that it does not have clear guidelines about how variables should be operationalised, especially the benefits and barriers components. This results in inconsistencies in the way the variables are conceptualised and operationalised across studies.

1.4.2 Trans-theoretical Model or Stages of Change Model

According to Prochaska and DiClemente (1983), the proponents of the trans-theoretical model, individuals who change their behaviour move through a series of five stages of change ranging from *pre-contemplation* to *maintenance*. Understanding exactly where a person is in the change process would enable practitioners to design interventions customised to

the individual. In the first stage, pre-contemplation, people have no intention to change their behaviour in the next six months. When something happens that leads the individual to consider change, the second stage, *contemplation*, is entered. In this stage, an intention to change is formed and the individual plans to change his/her behaviour in the next six months, but not in the next month. Individuals in the third stage, *preparation for action*, plan to change their behaviour in the next month. In the fourth stage, the *action* stage, they have changed their behaviour, but have only been engaging in the new behaviour for less than six months. The fifth and last stage is *maintenance*, in which they have been engaging in the new behaviour for more than six months. Although progression is primarily forward and sequential, relapse to an earlier stage can occur (Bogart & Delahanty, 2004; Malotte et al., 2000; Prochaska, Redding & Evers, 2002; Rimer, 2002; Weinstein & Sandman, 2002).

Stage theories (for example, the trans-theoretical model and the precaution adoption process model) were developed to address a major shortcoming of non-stage theories (for example, health belief model) which acknowledge only quantitative differences between people in their likelihood of action and position on various variables (Weinstein & Sandman, 2002). Weinstein and Sandman contend that these theories, by virtue of the value they place on prediction equations, do not acknowledge the changes that people have to progress through before they can take action. The value of stage theories, they argue, is that they provide insight into the series of changes and the combination of variables in various stages of change when people engage in health behaviour change. The insight provided by stage models increases the chances of designing more effective and efficient interventions.

The trans-theoretical model was not chosen for this study because it would have required a complex and cumbersome research design. As Weinstein et al. (1998) recommend, research based on this model would

require that people be assigned to stages on the basis of their responses to questions concerning their prior behaviour and current behavioural intentions. Although the five stages are meant to be mutually exclusive, the specific time periods used to distinguish between stages are arbitrary, thus making it difficult to guarantee people's correct assignment across stages. Also, as people in different stages hold different beliefs about behaviour and require different techniques, the application of the model to the health behaviour workshops intended for this study would be extremely difficult. Different techniques would have to be applied to different groups, depending on their stage assignment at the time. As Weinstein and Sandman (2002) concede, people in any one stage of change are heterogeneous, and it is difficult to frame health messages that will address all needs.

1.4.3 Precaution Adoption Process Model

Proposed by Weinstein in 1988, the precaution adoption process model posits that people go through seven stages in modifying their behaviour. In Stage 1, people are *unaware* of a particular health issue or hazard (for example, HIV/AIDS, as in this study). They enter Stage 2 once they *learn* something about the issue but are still not engaged in it. In this stage, they may acknowledge that the hazard poses a risk to others. The issue is not yet of personal relevance to them. Stage 3 is the *decision-making* stage, in which they become engaged with the issue and are considering their response. They may acknowledge that the hazard poses a personal risk. The decision-making stage can result in one of two outcomes. If they take the decision to *act* (Stage 4), the precaution adoption process ends. Stage 5 is entered once a behavioural change is *adopted*. In Stage 6, they *initiate* the required health behaviour. In the last stage, Stage 7, they *maintain* the behaviour initiated in the previous stage. Thus, Stage 7 can

only be observed over time (Rimer, 2002; Weinstein & Sandman, 2002; Weinstein et al., 1998).

The critique advanced in relation to the trans-theoretical model above is applicable to the precaution adoption process model. In addition, Weinstein et al. (1998) present another fitting criticism, which is that the characteristics that distinguish between people at different stages must be identified and measured. Because the attributes that define the stage in which a person is are unique to each individual, their measurement can be imperfect. Furthermore, because of optimistic bias, people tend to exaggerate their inclination to take precautions related to specific behaviour. With the problem of stigma, which is prevalent in HIV/AIDS in South Africa (Van Dyk, 2001a; Visser, Makin, Vandormael, Sikkema & Forsyth, 2009), this problem can be exacerbated in a HIV/AIDS study such as the one undertaken in this thesis. Another criticism that Weinstein and colleagues advance is that, as with other stage models, it may not always be possible to fit people neatly into any stage - one stage may contain a mixture of people who could well fit into other stages. Weinstein and Sandman (2002) caution about the difficulty of delivering stage-targeted health messages. While it is possible in non-staged approaches to frame messages the same way for the audience, stage approaches such as the precaution adoption process model require that messages be relevant to the stages in which people are. This cannot be easy, as people in any one stage may not be homogenous. A method of remedying this situation is to communicate messages that are not stage-specific or assume everyone to be at a very early stage – an approach that may not be practical, as the salient issues for some of the individuals may not be addressed.

1.4.4 Theory of Reasoned Action and Theory of Planned Behaviour

The theory of reasoned action (Ajzen & Fishbein, 1980) was first introduced in 1967 by Fishbein in an effort to understand the relationship between attitude and behaviour. It attempts to explain the relationship between *beliefs, attitudes, intentions* and *behaviour*. According to the theory of reasoned action, the most accurate determinant of behaviour is *behavioural intention*. The direct determinants of people's behavioural intentions are their *attitudes* towards performing the behaviour and the *subjective norms* associated with the behaviour. Attitude is determined by a person's beliefs about the outcomes or attributes of performing a specific behaviour (that is, behavioural beliefs), weighted by evaluations of those outcomes or attributes. The subjective norm of a person is determined by whether important referents (that is, people who are important to the person) approve or disapprove of the performance of a behaviour (that is, normative beliefs), weighted by the person's *motivation to comply* with those referents (Ajzen & Fishbein, 1980; Montano & Kasprzyk, 2002).

According to Montano and Kasprzyk (2002), the theory of reasoned action is successful in explaining behaviour when volitional control is high. In conditions where volitional control is low, the theory of planned behaviour (Ajzen, 1991) is more appropriate to explaining behaviour.

Ajzen (1991) proposed the theory of planned behaviour by adding *perceived behavioural control (PBC)* to the theory of reasoned action, in an effort to account for factors outside a person's volitional control that may affect her/his intentions and behaviour. This extension was based on the idea that behavioural performance is determined by motivation (intention) and ability (behavioural control). According to Montano and Kasprzyk (2002), perceived behavioural control is similar to Bandura's concept of self-efficacy, which refers to an individual's belief in his/her ability to perform a particular behaviour under various conditions.

According to the theory of planned behaviour, perceived behavioural control is determined by control beliefs concerning the presence or absence of facilitators and barriers to behavioural performance, weighted by the perceived power or input of each factor to facilitate or inhibit behaviour. Thus, a person who holds strong control beliefs about factors that facilitate behaviour will have high perceived control, which translates into an increased intention to perform the behaviour (Ajzen, 1991; Montano & Kasprzyk, 2002).

The theory of reasoned action and the theory of planned behaviour were chosen for this study as they are the theories most cited in HIV/AIDS research, and have been found to be better predictors of HIV/AIDS health behaviour than other models (Fishbein, 1993; Terry, Gallois & McCamish, 1993; Warwick et al., 1993). The research reviewed was conducted mainly in North America and Europe, hence the need to test the relevance of the theories to the South African context. Health behaviour – AIDS-preventive behaviour in the context of this study – does not occur spontaneously (Terry et al., 1993). It is the result of a decision-making process that involves an individual processing the information available to him/her, and then deciding on a course of action after reflecting on the consequences of performing the behaviour and his/her beliefs about what other people expect him/her to do. The South African population has been exposed to sufficient information on HIV/AIDS and how it can be prevented. There is a need to move towards behaviour change. As attitudes and beliefs have been shown to be significant in people's choice of action, the theories of reasoned action and planned behaviour are relevant to behaviour change. The model that is going to be applied in this study is based on the assumption that if people's attitudes towards specific AIDS-preventive behaviours are *shaped* in particular directions and their beliefs about the expectations of their significant others are reinforced, it will then be possible to change behaviour.

1.5 MOTIVATION FOR THE STUDY

There is limited empirical research on HIV/AIDS in the workplace in South Africa. Most of the work published is not conceptually based and has focused on a multiplicity of issues, such as warning the work sector about the dangers and impact of HIV/AIDS (Whiteside & Sunter, 2000); prevention programmes (Smart, 2000); policy issues (Strode & Smart, 2000; Van Niftrik, 2000); effects of antiretroviral treatment and counselling (Skogmar et al., 2006); and legal issues (AIDS Law Project and The AIDS Legal Network, 2001).

In a review of academic research on HIV/AIDS in South Africa, Campbell and Williams (1996) found that most literature focused on technical studies, epidemiology, social science and policy and planning. They also reported a poor correlation between knowledge about HIV/AIDS and preventive health behaviour. Besides these contributions, there is little academic research that has been conducted. Published research reports have focused on a broad range of issues such as perceptions of HIV/AIDS among mineworkers (Macheke & Campbell, 1998); prevention in African contexts (Van Dyk, 2001a); psychosocial and service-related barriers to VCT uptake (Van Dyk & Van Dyk, 2003a, b); occupational stress experienced by caregivers working in the HIV/AIDS field (Van Dyk, 2007); knowledge, attitudes and behaviour in a rural population (Peltzer, 2003); school children's perceptions and beliefs about HIV/AIDS (Van Dyk, 2008); prevention among teenagers (Visser, 1996; Visser, Schoeman & Perold, 2004); AIDS risk among street children and youth (Richter & Swart-Kruger, 1995); AIDS education for health professionals (Eagle & Brouard, 1995); behavioural responses of the youth (Simbayi, Chauveau & Shisana, 2004); perceptions of rural women (Walker, 2002); HIV disclosure in the context of vertical transmission (Varga, Sherman & Jones, 2005); knowledge, beliefs and practices of traditional healers (Peltzer, Mngqundaniso & Petros, 2006); utilisation of voluntary counselling and testing services (Hutchinson & Mahlalela, 2006);

establishment of a workplace antiretroviral therapy programme (Charalambous et al., 2007); AIDS risk factors among drug users (Hedden, Whitaker, Floyd & Latimer, 2009); the impact of a life skills programme on high school students (James, Reddy, Ruiters, McCauley & Van Den Borne, 2006); and the impact and management of HIV/AIDS in small and medium enterprises (Vass & Phakathi, 2006). Other than these empirical studies, a lot of reports are published in unrefereed popular human resource periodicals (for example, Adendorff, 2005; Davies, 2004; McDonald, 2004; Smanjak, 2006; Wade, 2006).

The available South African empirical studies cover a diverse range of topics, which makes it difficult to generalise. Only five studies (Boer & Mashamba, 2005; Heeran, Jemmott III, Mandeya & Tyler, 2007; Jemmott III et al., 2007; Skinner, 2000; Tlou, 2005) were found that attempted to apply psychological theory to HIV/AIDS prevention. It is imperative that more research focusing on HIV/AIDS prevention and health promotion in the world of work be conducted. This study recognises a need to augment the existing body of knowledge by conducting HIV/AIDS research based on, or testing, existing psychological theories.

There is a need to test existing theories in African contexts. Fishbein and Ajzen (2005) identified the need to test the applicability of social-cognitive models to the fight against HIV/AIDS in non-occidental populations. Molla, Nordrehaug Astrom and Brehane (2007) observed that studies based on the theory of planned behaviour in Africa have focused on condom use intentions, and have assessed behaviour retrospectively rather than prospectively. Thus, longitudinal studies are needed to test the effectiveness of this model in predicting HIV/AIDS preventive behaviour.

The researcher's own observation as a psychologist responsible for wellness services in a government department is that there has been a proliferation of standardised, information-based AIDS education programmes that are marketed and sold to employers. These products,

which are not tailor-made for specific work contexts, are largely based on the Knowledge-Attitude-Behaviour (KAB) Model which posits that knowledge influences attitudes which, in turn, change behaviour (Kemmer & Close, 1995). The KAB models have been criticised for only being education and information campaigns that result in high levels of knowledge about HIV transmission and its prevention, but that this knowledge does not translate into safer sex behaviour (Padian, Van De Wijgert & O'Brien, 1994), and as being antiquated (O'Donnell, 2002). The education programmes championed by the Department of Health, in the researcher's opinion, are largely influenced by KAB models and place a lot of emphasis on mass media campaigns, fear appeals and condom distribution campaigns, while ignoring education regarding life skills or lifestyle changes. These programmes do not seem to be informed by any empirical research on health behaviour and behaviour change. This state of affairs makes theory-based programmes in the South African workplace even more important.

1.6 OPERATIONAL DEFINITIONS

The two concepts that will be operationalised in this study are *health behaviour* and *health promotion*.

1.6.1 Health Behaviour

Health behaviour, in the context of this study, refers to AIDS-preventive health behaviour. This definition is similar to Schiebust's (1990) concept of health protective behaviour, which he describes as what people do in the belief that their behaviour facilitates or protects health. Health behaviour will be measured by the researcher-designed AIDS Health Behaviour Questionnaire.

The following categories of AIDS preventive behaviour, which are prominent in AIDS prevention literature in Southern Africa (Department of

Health, 2000; Harber, 2000; Klouda, 2000; Strode & Smart, 2000), were examined in this study:

- (a) *Using a condom during sexual intercourse:* Using a condom when one has sexual intercourse with a non-regular partner or insisting that one's partner use a condom during sexual intercourse, has been punted as one of the most reliable means of reducing the incidence of HIV/AIDS (Harber, 2000; Strode & Smart, 2000; UNAIDS/WHO, 2000).
- (b) *Seeking a HIV test and counselling:* Voluntary, informed and confidential HIV testing and counselling in the workplace is regarded as preventive behaviour in that it creates an opportunity for employees to access counselling and support services, and can help in improving the quality of life of those who test positive (Strode & Smart, 2000; UNAIDS, 1998).
- (c) *Having only one sexual partner:* Staying faithful to one's sexual partner is one of the messages promoted through the government's AIDS prevention campaigns (Department of Health, 2000).

1.6.2 Health Promotion

Health promotion, in the context of this study, refers to the HIV/AIDS health promotion workshops that were conducted with study participants.

1.7 RESEARCH OBJECTIVES

The overall objective of this study was to investigate the application of the theory of reasoned action (Ajzen & Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1991) in the development of a HIV/AIDS health

promotion programme in the workplace. This objective was divided into the following five secondary sub-objectives:

- (a) To determine if the combined TRA/TPB variables (attitudes, subjective norm and perceived behavioural control) would predict intentions to change HIV/AIDS health behaviour.
- (b) To develop a HIV/AIDS health promotion programme for the workplace in accordance with the TRA and TPB.
- (c) To determine if the TRA/TPB workshop would predict HIV/AIDS health behaviour change.
- (d) To determine if the TRA/TPB workshop would be more instrumental in behaviour change than an Information-only intervention.
- (e) To use the findings of the study to make suggestions for the design of workplace HIV/AIDS interventions.

The research questions flowing from this objective can be posed as follows:

- 1) *Will the combined TRA/TPB variables significantly predict intentions to engage in HIV/AIDS preventive behaviours?*
- 2) *Will the TRA/TPB workshop significantly predict HIV/AIDS health behaviour change across the three measurement periods (baseline, one month follow-up and six months follow-up)?*
- 3) *Will there be significant differences in HIV/AIDS health behaviour between participants in a TRA/TPB-based workshop and participants in a traditional lecture-type, information-only workshop?*

1.8 SUMMARY

This chapter presented an overview of the HIV/AIDS situation in South Africa, illustrating the need for more empirical research in this area. An overview of health promotion in the workplace, introductory remarks on the utility of behavioural science theories in HIV/AIDS research and the objectives of the study were also presented. The South African population has been exposed to the necessary information about HIV/AIDS since it became topical in the 1980s. The social science research conducted since then has covered a wide range of issues, without a specific focus on how preventive behaviour can be shaped while reducing risky behaviour. It is clear that a lot of work still has to be done in terms of HIV/AIDS research in the South African workplace. Local research that has been conducted to date has done little to build the knowledge base around behaviour change. The discipline of psychology, with its advantage of understanding human behaviour, can play a significant role in producing local knowledge on how HIV/AIDS health behaviour can be predicted and changed. The workplace has been chosen as a unit of analysis, as it is at work that a captive audience can easily be obtained. It is expected that this thesis will contribute to desperately needed research on behaviour change in the South African context.

1.9 OUTLINE OF THE THESIS

Chapter 1 is the introduction to this study and provides a background to the research topic, as well as discussing the motivation for, and objectives of, the study and outlining research questions.

Chapter 2 will present an overview of the theory of reasoned action and the theory of planned behaviour.

Chapter 3 will present HIV/AIDS research in the health psychology literature that has applied the theories of reasoned action and planned behaviour.

Chapter 4 will present the procedure and findings of the preliminary or elicitation study that was conducted in preparation for gathering data for this thesis.

Chapter 5 will describe the research methodology used in this study, as well as the design of the theory-based health promotion model that was designed for the study.

Chapter 6 will present detailed results of the statistical tests used in this study.

Chapter 7 will discuss the implications of the research findings, list the limitations of this study and propose directions for future research on HIV/AIDS in the workplace.

Chapter 8 will make concluding remarks reflecting on the key lessons learned from the study.

CHAPTER 2

THEORETICAL BACKGROUND: THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

Health psychology literature on HIV/AIDS (for example, DiClemente & Peterson, 1994; Lewis & Kashima, 1993) is unanimous in the belief that, in the absence of a medical cure or vaccine, high-risk behaviour change is the only way to prevent HIV infection. Fishbein (1993, p. xxi) aptly wrote that "...the battle to prevent AIDS is a behavioural battle". Thus, the discipline of psychology, with its plethora of theories and models on human behaviour, is in a unique position to develop interventions that can slow, or even halt, the spread of AIDS throughout the world.

Chapter 1 of this study presented an argument for the role of psychological theory in the development and design of behaviour change models in the fight against HIV and AIDS. A brief synopsis of the four most widely cited psychological theories in HIV/AIDS research was provided, as well as a motivation for the choice of the theories of reasoned action and planned behaviour. These two theories fall within the realm of cognitive and decision-making theories (Leviton, 1989), and are based on the premise that the individual person is in control of his/her own decision making. This framework draws considerably on attitude theory in the field of social psychology – the field in which Martin Fishbein's scholarly roots can be found. The field of health psychology, with its primary focus being the application of psychological theories, methods and research to the promotion, improvement and maintenance of health (Marks, 2002), has become the operational environment for the theories of reasoned action and planned behaviour. This chapter will provide a detailed overview of these two theories, as they form the theoretical basis

of this study. The chapter will conclude with a critique of the two theories, as well as other scholars' suggestions for the extension of these theories in order to augment their predictive and explanatory use. The approach that will be used to test the theories for the purpose of this study will also be presented.

2.1 THEORY OF REASONED ACTION (TRA)

The theory of reasoned action (Ajzen & Fishbein, 1980) was first introduced in 1967 by Martin Fishbein in an effort to understand the relationship between attitude and behaviour. It was born out of the frustration resulting from repeated failure to predict behaviour from traditional measures of attitude (Fishbein, 1993). According to Ajzen and Fishbein, the theory of reasoned action is based on the assumption that human beings are rational and make systematic use of available information. People consider the implications of their actions before they decide whether or not to perform a given behaviour. The theory of reasoned action attempts to explain the relationship between *beliefs*, *attitudes*, *intentions* and *behaviour*. According to this theory, the most immediate determinant of behaviour is behavioural *intention*. The direct determinants of people's behavioural intentions are their *attitudes* towards performing the behaviour and the *subjective norm* associated with the behaviour (Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989; Montano & Kasprzyk, 2002).

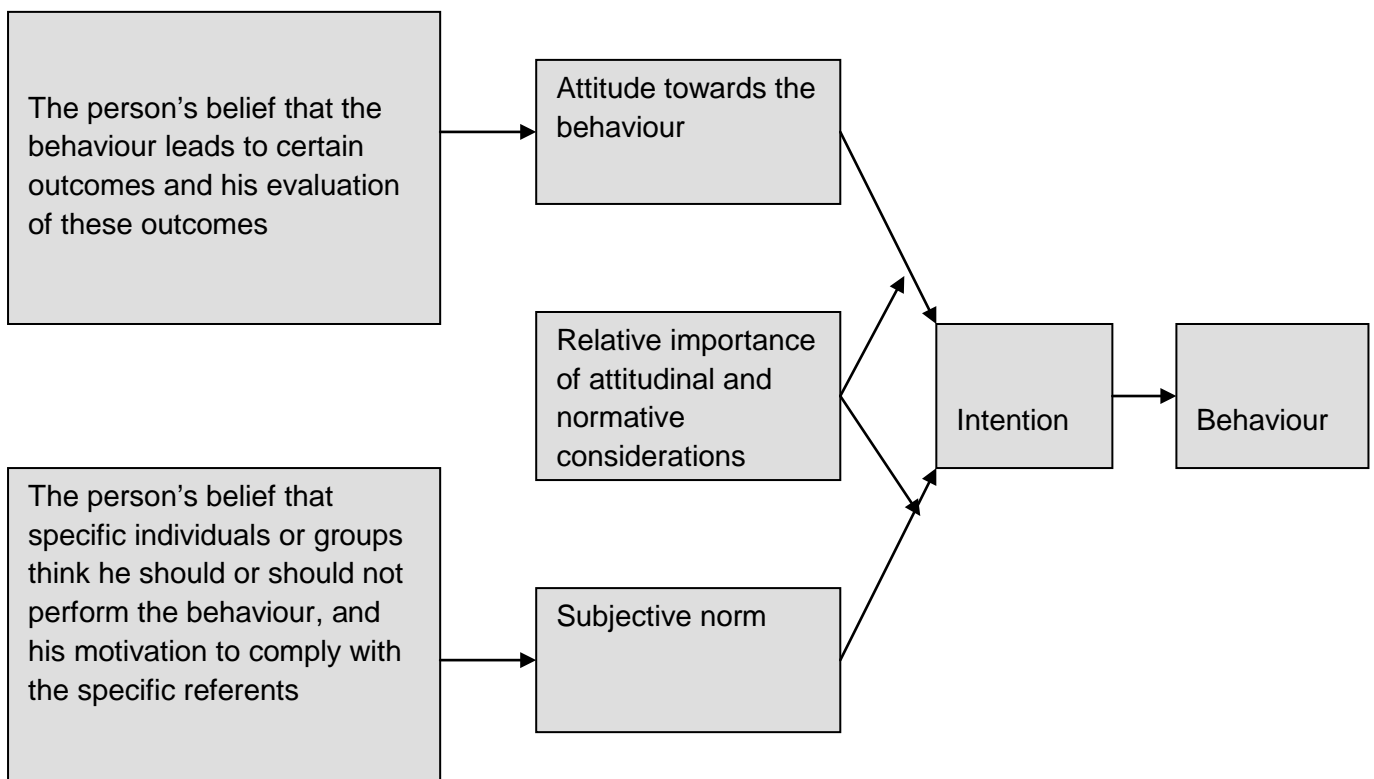
For a clearer understanding of the theory of reasoned action, it is imperative that various underlying concepts are explained. These concepts are (a) *behavioural criterion, behavioural category and outcome*; and (b) *behavioural elements of action, target, context and time*.

- *Behavioural criterion, behavioural category and outcome*: The central focus of the theory of reasoned action is on single, directly

observable behaviour under an individual's control. A distinction needs to be made between behaviours and occurrences that may be the outcome of those behaviours (Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989). Behaviour can take the form of an overt observable action (a single act or *behavioural criterion* - for example, whether or not a person used a condom the last time they had sexual intercourse), or an inference with regard to one or more such acts (a *behavioural category* - for example, whether or not a person practiced "safe" sex). Behavioural categories are not directly observed. Instead, they are inferred from single actions assumed to be instances of the general behavioural category. For example, the behavioural category of safe sex can be inferred from single behaviours such as abstinence, avoidance of risky social interactions and using a condom when having sexual intercourse. A behavioural criterion and a behavioural category need to be distinguished from a *behavioural outcome*. The latter is an outcome that may result from the performance of one or more behaviours (for example, whether or not the person is seropositive).

- *Behavioural elements of action, target, context and time:* Once a behaviour of interest has been identified, the next step is to measure it. This measurement requires consideration of the four behavioural elements of action, target, context and time. Every *action* is directed at a *target* in a given *context* at a given point in *time*. For example, a person going out at night (time) would use a condom when having sex (action) with a casual sex partner at a club (context) in order to protect himself against HIV (target) (Fishbein & Middlestadt, 1989).

A schematic representation of the theory of reasoned action is shown in Figure 2.1 below.



Note: arrows indicate the direction of influence

Figure 2.1 Factors determining a person's behaviour (Ajzen & Fishbein, 1980, p.8)

2.1.1 Determinants of Behavioural Intentions

As illustrated in Figure 2.1 above, there are two determinants of behavioural intentions, namely the personal or attitudinal component and the social or normative component. These determinants are discussed in detail below.

2.1.1.1 Attitude towards Behaviour

The attitudinal component refers to a person's attitude towards performing the behaviour under consideration (Ajzen & Fishbein, 1980). People's likelihood of performing a given behaviour will be strong if they hold a favourable attitude towards the performance of that behaviour. Fishbein (1993) made a distinction between attitude towards an *object* (for example, attitude towards AIDS) and attitude towards a *behaviour* (for example, attitude towards seeking an HIV test) in relation to an object. According to Ajzen and Fishbein, attitude towards a behaviour (for example, HIV screening) is a much better predictor of that behaviour than attitude towards the target of the behaviour (for example, HIV-negative status). Thus, the attitude towards maintaining a negative HIV status is a poor predictor of AIDS screening behaviour, while attitude towards screening behaviour is expected to be a good predictor.

The relationship between behaviour and intentions, according to Fishbein and Middlestadt (1989), is illustrated in Equation (1) below:

$$B \approx I = f [w_1 Ab + w_2 SN] \quad (1)$$

Where

B = Behaviour

I = Intention to perform the behaviour

Ab = Attitude towards performing the behaviour

SN = Subjective norm with regard to the behaviour

w_1 = Weight (relative importance) of the attitude

w_2 = Weight (relative importance) of the normative component.

The first determinant of behavioural intention, attitude towards the behaviour, is determined by a person's beliefs regarding the outcomes or

attributes of performing the behaviour weighed against evaluation of these outcomes or attributes. These beliefs, which underlie a person's attitude towards a given behaviour, are termed *behavioural beliefs* (Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989; Montano & Kasprzyk, 2002). Thus, a person who holds a belief that positively valued outcomes will result from performing a behaviour (for example, condom use) will have a more positive attitude towards the behaviour (that is, condom use) than one who has a strong belief that negatively valued outcomes will result. According to Fishbein and Middlestadt, the expectancy-value relationship between attitude and behavioural beliefs can be summarised in Equation (2) below:

$$A_b = f(\sum b_i e_i) \quad (2)$$

Where

A_b = Attitude towards performance of a behaviour (for example, use of a condom when having sex).

b = belief that performance of the behaviour will lead to outcome i (for example, using a condom will reduce sexual pleasure).

e = evaluation of outcome i (for example, how good or bad is reduction of sexual pleasure as a result of using a condom?).

The determinants of attitude are those behavioural beliefs that are salient in the population under examination. An individual's attitude towards a behaviour is determined by the evaluative implications of the total set of beliefs s/he holds, not just one belief.

2.1.1.2 Subjective Norm

The second determinant of behavioural intention, subjective norm, refers to a person's perception of the social pressures to perform or not to perform a particular behaviour. The subjective norm is determined by whether important referents approve or disapprove of the performance of a behaviour, weighted by his/her motivation to comply with those referents. These beliefs, which underlie a person's subjective norm, are termed *normative beliefs*. Thus, a person who believes that important referents think that s/he should perform a particular behaviour (for example, condom use) and is motivated to comply with those referents' wishes, will hold a positive subjective norm. The theory of reasoned action assumes a causal chain that links behavioural and normative beliefs to behavioural intention, and behaviour via attitude (towards behaviour) and subjective norm. This means that people are likely to perform a behaviour when they evaluate it positively and believe that significant others think they should perform it (Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989; Montano & Kasprzyk, 2002). Fishbein and Middlestadt summarise the relationship between subjective norm and normative beliefs in Equation (3) below:

$$SN = f (\sum b_j m_j) \quad (3)$$

Where

SN = Subjective norm (for example, the belief that significant others think that he/she should use a condom every time they have sex).

b = normative belief that referent *j* thinks "I should or should not perform" a behaviour (for example, using a condom every time they have sex).

m = motivation to comply with referent *j* (for example, when having sex, he/she will use a condom, as referent *j* thinks he/she should).

2.1.2 Predicting Behaviour from Intentions

According to the theory of reasoned action, intention is the immediate determinant of behaviour. When an appropriate measure of behaviour has been obtained, it will provide the most accurate prediction of that behaviour. It should, however, not be taken for granted that a measure of intention will always be an accurate predictor of behaviour. Two factors will influence the strength of the relationship between intention and behaviour. These are firstly, the degree of correspondence between intention and behaviour, and secondly, the degree to which intentions remain stable over time (Ajzen & Fishbein, 1980). These two factors are discussed in detail below. Fishbein and Middlestadt (1989) further state that a distinction needs to be made between intention to perform a behaviour, intention to perform a class of behaviours, and intention to achieve a goal or specific outcome.

2.1.2.1 Correspondence between Intention and Behaviour

To predict a behavioural criterion from intention, Fishbein and Middlestadt (1989) recommend that the measure of intention should correspond with the measure of behaviour. Intentions must clearly correspond with the behaviours of interest with respect to the elements of action, target, context and time. The correspondence must also take into account whether the target is a single-action criterion, multiple-choice criterion or behavioural category.

A single-action criterion is a record of whether or not a person has performed a specific behaviour. Alternatively, it can be a measure of the likelihood that a person will engage in the behaviour. A measure of the likelihood that a person will engage in a given behaviour is known as *behavioural intention*. In addition to the action elements of intentions and behaviours, a single-action criterion involves a target towards which the

action is directed, the context in which the action occurs and the time of its occurrence. To ensure correspondence, the elements of the intention have to be identical to those of the behaviour (Ajzen & Fishbein, 1980). Fishbein and Middlestadt (1989) further clarify this point by emphasising that in order to change any behaviour, one must change the intentions that correspond directly (in terms of action, target, context and time) with the behaviour in question. Care must be taken to focus on intentions to engage in behaviours that are under an individual's control. This would involve strengthening the behavioural intentions that correspond directly with the behaviour of interest. For example, if the desired behaviour is to "use a condom every time s/he has sex", then the intention to "use a latex condom..." must be strengthened, not "practicing safe sex".

A multiple-choice criterion records which out of a number of behavioural alternatives a person performed. These alternatives can either be qualitatively different behaviours or different quantities of the same behaviour. The measures that involve a person choosing between different alternatives are called *choice intentions*. They afford a person the opportunity of identifying the behaviour they are most likely to perform across a range of alternatives. Like single-choice intentions, multiple-choice intentions can only predict actual behaviour choice when there is correspondence between the two measures in terms of action, target, context and time elements. To ensure correspondence, the measure of choice intention has to specify alternatives which involve exactly the same elements as the multiple-choice criterion (Ajzen & Fishbein, 1980).

2.1.2.2 Stability of Intentions

While it can be argued that a measure of intention which corresponds to the behaviour will lead to accurate prediction, it is also true that a measure of intention is not always an accurate predictor of behaviour. The latter is often the case when there is a long time lapse between the measure of

intention and the time at which behaviour is observed. The longer the time interval between the measure of intention and the observation of behaviour, the less accurate the prediction of behaviour from intention. Since intentions can change over time, it is best to measure intentions as close as possible to the behavioural observation, in order to obtain an accurate prediction (Ajzen & Fishbein, 1980).

Ajzen and Fishbein (1980) suggest that the distinction between predicting behaviour at the level of an individual and at the aggregate (group) level is important because aggregate intentions are apt to be more stable over time than individual intentions. Individual intentions are likely to be destabilised by unexpected events. The prediction of behaviour from intentions formed at an aggregate level is more accurate than prediction at an individual level. To make accurate predictions, it may be necessary to identify likely extraneous events whose occurrence could change intentions. These are called *conditional intentions*. For example, a person may have the intention to use a condom during a sexual encounter with a stranger, but his/her use or non-use of a condom may be influenced by his/her state of sobriety at the time of the sexual encounter.

Ajzen and Fishbein (1980) also view the intention-behaviour relationship as significant in the prediction of outcomes. Although outcomes are not under a person's control, the desire for a particular outcome will determine whether or not a person engages in a particular behaviour. For example, a person's desire to be HIV-negative (outcome) will result in his/her intention to engage in behaviour that will produce that desired outcome (for example, abstinence, monogamy and condom use).

2.1.3 Determinants of Attitudinal and Normative Components

Ajzen and Fishbein (1980) believe that explaining behaviour by examining factors that determine intentions is not enough. For a deeper

understanding of behaviour, it is important to also look for determinants of the attitudinal and normative components. An examination of these determinants will lead to a consideration of the beliefs individuals hold about themselves and their environment. Beliefs are thus viewed as underlying a person's attitudes and subjective norms, and they ultimately determine intentions and behaviour. A detailed discussion of the determinants of attitudinal and normative components follows.

2.1.3.1 Determinants of Attitude towards Behaviour

Attitudes towards any object are determined by beliefs about that object, which may be favourable or unfavourable, depending on the characteristics associated with the object. Beliefs towards objects may be acquired as a result of direct observation, indirectly by accepting information from outside sources, or can be generated through the process of inference. Although a person may hold many beliefs about any given object, s/he can only attend to a relatively small number of *salient* beliefs at any given moment. It is these salient beliefs that serve as the determinants of attitude. To understand a person's attitude towards an object, it is necessary to assess the person's salient beliefs about that object. The first few beliefs that a person reports are usually their salient beliefs - however, it is difficult to determine the point at which a person shifts from non-salient to salient beliefs (Ajzen & Fishbein, 1980).

Ajzen and Fishbein believe that there has to be correspondence between beliefs and attitudes if attitudes towards behaviour are to be successfully predicted or understood. They propose that when eliciting salient beliefs that determine attitude towards behaviour, it is important to ensure correspondence to action, target, context and time elements. Salient beliefs are elicited by asking respondents to list the advantages and disadvantages of engaging in the behaviour. Once a person's salient

beliefs about performing a behaviour are known, it becomes possible to determine their attitude towards performing that behaviour.

After assessing salient beliefs, the next step is to assess how confident the person is that performing a given behaviour will produce the desired outcome. This is a measure of the individual's *belief strength*. Belief strength is measured by asking a person to indicate the likelihood (subjective probability) that performing a behaviour will result in a given outcome or that it is associated with some attribute (Ajzen & Fishbein, 1980).

According to the theory of reasoned action, a person's attitude towards a behaviour can be predicted by multiplying his/her evaluation of the consequences of each behaviour by the strength of his/her belief that performing the behaviour will have a particular outcome, and then summing the products for the total set of beliefs. Thus, the expectancy-value model of attitude maintains that attitude towards behaviour corresponds to the favourability or unfavourability of the total set of consequences, each weighted by the strength of the person's belief that performing the behaviour will lead to each of the consequences (Ajzen & Fishbein, 1980).

Ajzen and Fishbein concede that it is difficult to sum up the salient beliefs reported by different people across contexts. To overcome this difficulty, they propose the concept of *modal salient beliefs*. Modal salient beliefs are the salient beliefs that are most frequently reported in a given population. The elicitation of modal salient beliefs is done by asking members of the population to list the advantages and disadvantages of performing the behaviour in question. Modal salient beliefs provide a general picture of the beliefs that are assumed to determine the attitudes of most members of the population under investigation.

2.1.3.2 Determinants of Subjective Norms

The theory of reasoned action also proposes that subjective norms are a function of normative beliefs. Subjective norm is an individual's belief that most significant others (that is, people with whom he/she relates) think that he/she should or should not perform a specific behaviour. The theory implies that in forming subjective norms, the individual takes the normative expectations of significant others in his/her environment into account. In other words, he/she considers whether significant others think he/she should or should not perform the behaviour, and then uses this information to arrive at his/her subjective norm. A *normative belief*, on the other hand, is a belief about another person's behavioural prescriptions. Normative beliefs differ from subjective norms in that they involve specific individuals or groups, rather than a generalised significant other (Ajzen & Fishbein, 1980).

Ajzen and Fishbein intimate that, as is the case with behavioural beliefs, not every possible referent will be significant at a specific point in time or in a given context - only the most *salient* referents will influence a person's subjective norm. As in the case of behavioural beliefs, salient referents are elicited in a free-response format. In other words, the respondent is asked to list all individuals or groups who would influence his/her decision to engage in a particular behaviour. Once the person's beliefs about specific referents are known, the next step is to assess his/her motivation to comply with each of the referents. According the theory of reasoned action, a person's subjective norm can be predicted from the index obtained by multiplying normative beliefs by motivation to comply, and then summing the products.

As with behavioural beliefs, it is useful to identify people's *modal normative beliefs*, that is, the most frequently mentioned salient referents. This is done by asking respondents to list any people or groups who would approve or disapprove of their engagement in a particular

behaviour. The normative beliefs and motivation to comply with each of the salient referents are assessed. This makes it possible to compare the normative beliefs and motivation to comply of people who perform a given behaviour with those of people who do not perform the behaviour (Ajzen & Fishbein, 1980).

The theory of reasoned action is effective in explaining behaviour when volitional control is high - that is, when there is a high degree of perceived success or perceived and actual control over the internal and external factors that may interfere with the execution of the intended action. In cases where volitional control is low, the theory of planned behaviour (Ajzen, 1985;1991) is more appropriate as a means of explaining behaviour. Ajzen clarifies the relationship by showing that the theory of reasoned action is relevant when the subjective probability of success or perceived and actual control over the behavioural goal is at its maximum level. However, when the possibility of failure is salient and actual control is limited, it becomes necessary to go beyond the theory of reasoned action. The theory of planned behaviour, therefore, is an extension of the theory of reasoned action, and attempts to understand behaviour when people cannot exercise full control over the internal and external factors that make it possible to engage in a given behaviour (Ajzen, 1985; Ajzen, 1991; Ajzen & Fishbein, 1980; Fishbein & Middlestadt, 1989; Montano & Kasprzyk, 2002).

2.2 THEORY OF PLANNED BEHAVIOUR (TPB)

Ajzen (1991) proposed the theory of planned behaviour by adding perceived behavioural control (PBC) to the theory of reasoned action in an effort to account for factors outside a person's control that may affect his/her intentions and behaviour. The extension was based on the idea that behavioural performance is determined by motivation (intention) and ability (behavioural control). According to Ajzen, actual behavioural control

should be distinguished from perceived behavioural control. The latter, which is what distinguishes the theory of planned behaviour from the theory of reasoned action, refers to people's perception of the ease or difficulty of performing a given behaviour. Montano and Kasprzyk (2002) regard perceived behavioural control as being similar to Bandura's concept of self-efficacy, which refers to an individual's judgement of how well he can perform a behaviour under various conditions.

While Azjen (1985) and Ajzen and Madden (1986) do not make a conceptual distinction between perceived behavioural control and self-efficacy, Terry and O'Leary (1995) do. Their view is that people's perception of how much control they have over whether they perform a behaviour (a measure of perceived control) is different from their assessment of how easy or difficult it will be for them to perform that behaviour (a measure of self-efficacy). Terry and O'Leary draw heavily from Bandura's (1977; 1982) social cognitive theory of behaviour change, which advocated for a distinction between the notions of self-efficacy and perceived control.

Bandura (1977; 1982) proposed that there are two types of expectancies that influence people's decisions to engage in a particular behaviour. These are *efficacy expectancies* and *outcome expectancies*. Efficacy expectancies refer to people's confidence in their ability to perform a behaviour. Thus, people have positive efficacy expectancies if they are confident in their ability to perform a behaviour which, in turn, motivates them to carry out the behaviour. On the other hand, people may be reluctant to engage in a behaviour if they doubt their ability to perform it (a negative expectancy scenario). Outcome expectancies refer to people's perception that the performance of a behaviour will lead to a desired outcome. Thus, people will be reluctant to perform a behaviour if they believe that the performance will not result in a desired outcome (a negative outcome expectancy). A positive outcome expectancy will result in motivation to engage in a behaviour. Using Bandura's

conceptualisation, Terry and O’Leary (1995) propose that perceived behavioural control and self-efficacy be measured separately in research on the relationship between intentions and behaviour.

Ajzen (1985), in an attempt to emphasise the distinction between the theory of reasoned action and the theory of planned behaviour, suggested that intentions can only be expected to predict a person’s *attempt* to perform a behaviour, not necessarily its actual performance. In trying to predict behaviour, one would have to not only assess intentions, but also obtain an estimate of the extent to which individuals are apt to exercise control over the behaviour in question. As Equation (4) below illustrates, the strength of a person’s attempt to perform a behaviour (B_t) interacts with the degree of his/her control (C) to determine the likelihood of the actual performance of the behaviour (B):

$$B \propto B_t \cdot C \quad (4)$$

This implies that the harder the person tries, and the greater his/her control over personal and external factors that may interfere, the greater the likelihood that he/she will achieve his/her behavioural goal.

According to Ajzen (1991), performance of a behaviour is a function of both intentions and perceived behavioural control. For accurate prediction, three conditions have to be met:

- (a) Measures of intention and perceived behavioural control must correspond with the behaviour that is to be predicted. In other words, intentions and perceived behavioural control must only be related to the behaviour in question, and the context must be the same as that in which the behaviour is to occur. For example, the behaviour could be “to use a condom every time I have sex”, not “to prevent myself from getting AIDS”;

- (b) Intention and perceived behavioural control must remain stable in the interval between their assessment and observation of the behaviour. Intervening events must be minimised; and
- (c) Perceptions of behavioural control must realistically reflect actual behaviour.

The relative importance of intention and perceived behavioural control in predicting behaviour varies across situations and behaviours. When the behavioural situation is within a person's control, intentions alone can predict behaviour. When control decreases, both intention and perception of control are needed (Ajzen, 1985; 1991).

A schematic representation of the theory of planned behaviour is shown in Figure 2.2.

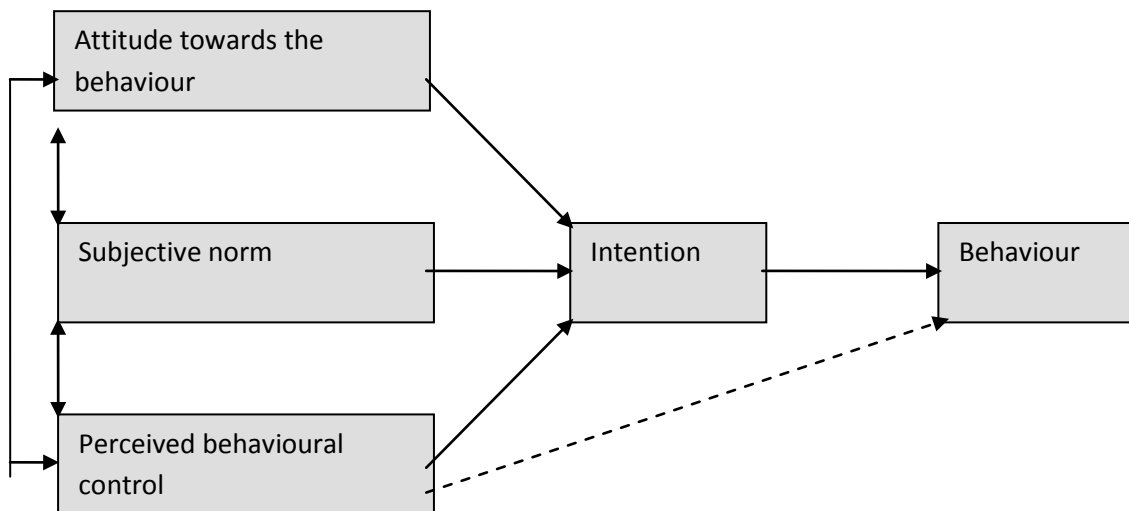


Figure 2.2: Theory of Planned Behaviour (Ajzen, 1991, p.182)

According to the theory of planned behaviour, the antecedents of intentions and actions are attitudes, subjective norms and perceived behavioural control. Behaviour is a function of salient information or beliefs about any given behaviour. While people can hold many beliefs about a given behaviour, it is only the most salient beliefs that will determine intention and action. Ajzen (1985; 1991) made a distinction between three kinds of salient beliefs: *behavioural beliefs*, *normative beliefs* and *control beliefs*.

2.2.1 Behavioural Beliefs and Attitudes towards Behaviour

Behavioural beliefs are beliefs a person holds about the outcome of a behaviour. Each belief links behaviour to a certain outcome or attribute. Since attributes that are linked to behaviour are either positively or negatively valued, people acquire an attitude towards the behaviour in question. Behaviours that have desirable consequences are favoured over those that have less favourable consequences. Thus, an attitude towards a behaviour is developed. As shown in Equation (5), the strength of each salient belief (b) is combined in a multiplicative fashion with the subjective evaluation (e) of the belief's attribute, and the resulting products are summed over n salient beliefs. A person's salient attitude (A) is directly proportional (α) to this summative belief index (Ajzen, 1991).

$$A \propto \sum_{i=1}^n b_i e_i \quad (5)$$

The informational foundation of each attitude can be explored by eliciting salient beliefs about the attitude object and assessing the subjective probabilities and values associated with the different beliefs.

2.2.2 Normative Beliefs and Subjective Norms

Normative beliefs are concerned with the likelihood that significant referents approve or disapprove of a given behaviour. The strength of each normative belief is multiplied by the person's motivation to comply with the referent in question. As Equation (6) below illustrates, the strength of each normative belief (n) is multiplied by the person's motivation to comply (m) with the referent in question. The subjective norm (SN) is directly proportional to the sum of the resulting products across n salient referents (Ajzen, 1991).

$$SN \propto \sum_{i=1}^n n_i m_i \quad (6)$$

2.2.3 Control Beliefs and Perceived Behavioural Control

Control beliefs refer to the perception of factors likely to facilitate or inhibit the performance of a behaviour. These factors include both internal factors (for example, information, personal deficiencies, skills, abilities and emotions) and external factors (for example, opportunities, dependence on others and barriers). People who perceive that they have access to the necessary resources and that there are opportunities to perform a behaviour – that is, people who have positive control beliefs – will have a high degree of perceived behavioural control. As Equation (7) below shows, each control belief (c) is multiplied by the perceived power (p) of the particular control factor to facilitate or inhibit the performance of a behaviour, and the resulting products are summed across n salient control beliefs to produce the perception of behavioural control (perceived behavioural control) (Ajzen, 1991).

$$PBC \propto \sum_{i=1}^n c_i p_i \quad (7)$$

Ajzen (1991) recommends that the three salient beliefs be kept separate as they each have a distinct relationship to intentions and behaviour. Ajzen believes that the theory of planned behaviour is open to the addition of factors if it can be shown that these factors capture a significant proportion of variance in intention and behaviour after the theory's current variables have been taken into account. This suggests the theory of planned behaviour could still be expanded further. Ajzen suggested the extension of the theory of planned behaviour by adding three constructs, namely personal or moral norms, affect versus evaluation and role of past behaviour.

2.3 CRITIQUE OF THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

The theories of reasoned action and planned behaviour fall within the realm of cognitive theories. These two theories are based on the assumption that humans are endowed with the ability to reason, and that reason is the primary psychological process involved in decision-making (Leviton, 1989). It follows that a major criticism of the theory of reasoned action (which, in my view, should also apply to the theory of planned behaviour, as it is an extension of the theory of reasoned action), according to Dutta-Bergman (2005), is that its strong cognitive orientation tends to preclude the affective nature of humans, which also plays a role in decision-making processes.

Using sexual behaviour change as an example, the theory of reasoned action suggests that for behaviour change to occur, the individual must

systematically identify and weigh the outcomes of his/her sexual behaviour to form attitudes towards the specific behaviour that must be learned. This assumes that behaviour change can be induced by adding a new belief, increasing or decreasing the favourability or unfavourability of an existing belief, and increasing or decreasing the belief strength associated with the intended behaviour. The persuasive process involved in behaviour change would be primarily information-based, thus providing the individual with the necessary pieces of information required to create a desirable attitude towards the intended behaviour. While the individual may satisfy the requirements for behaviour change in this paradigm, they may not be able to enact the behaviour in a situation where they initiate sexual intercourse on the spur of the moment.

Another criticism is based on the focus of the theory of reasoned action on the individual as opposed to the group of which they are a member (Dutta-Bergman, 2005; Kashima, Gallois & McCamish, 1993). This is particularly significant in HIV/AIDS research as Van Dyk (2001a), noting the African context in which she writes, recommends that the community be involved in AIDS education, prevention and counselling. Van Dyk highlights the significance of health care interventions in view of the collective existence that is a norm in traditional African contexts. The theory of reasoned action and the theory of planned behaviour, on the other hand, ignore the collective context in which individuals exist, and place emphasis solely on the individual actor.

Dutta-Bergman (2005) suggests that although proponents of the theory of reasoned action might argue that a subjective norm explains the role of the collective in an individual's decision-making, it is still driven by an individual motive orientation, thus keeping the locus of decision-making with the individual. Although subjective norm taps into the individual actor's evaluation of significant others, it does not tap into the complexity of the social fabric that constitutes the health behaviour in question. Social influence, Dutta-Bergman points out, moves beyond the realm of a few

significant others to the broader socio-cultural context of the community. Using the abovementioned African collective context that Van Dyk (2001a) referred to, it could happen that while the significant others closest to a person may discourage multiple sex partners, the broader sub-culture to which a person belongs (for example, urban youth sub-culture) may consider such behaviour a “norm”. Such a strong emphasis on the individual ensures that the theory lacks a social-ecological approach that can be used to influence social policy. The social-ecological approach assumes that the community is superordinate to the individual, and transforming individual behaviour is therefore a consequence of transformation at a community level.

Arguing from a social constructionist perspective, Kippax and Crawford (1993) extend Dutta-Bergman’s argument by highlighting that the focus of the theory of reasoned action on the individual neglects the “social” or “collective” nature of sexual behaviour. In this regard, they refer to the interpersonal and cultural milieu in which sexual behaviour occurs. They recommend that HIV/AIDS research should take cognisance of the cultural contexts in which sexuality and sexual practices are shaped, the way of life of populations in which HIV infections occur, and the interpersonal interactions through which sexual practice is constructed and enacted. Kippax and Crawford recommend that research needs to focus its attention on the *common sense* (that is, the taken-for-granted reality) of sexual behaviour in the populations in question. Common sense in this regard refers to the social discourse or reality that the population has constructed around sexuality. An example relevant to this study is the norm of “flesh-on-flesh” sex that is reported as being a common practice among mine workers in South Africa (Macheke & Campbell, 1998).

A classical theory of reasoned action/planned behaviour approach to changing the risky practice of “flesh-on-flesh” sex would be to influence the attitudes of individual miners so that they view this behaviour as being undesirable, as well as influencing them to associate with significant

others with views antithetical to this behaviour. The attitudes and subjective norms of individual miners would then be aggregated, and an intervention designed to influence their intentions would be designed and implemented. Kippax and Crawford's argument would be that this approach is irrelevant if it does not address the shared meanings around this practice in the miner community. This would take the form of debates around this practice so that the community is persuaded to have a different understanding of it. It would be through these debates that the shared meanings of the behaviour can shift and the social representation (the discourse that shapes attitudes) of unprotected sex can begin to take place. At the level of subjective norms, the intervention would take the form of debates and discussions around the cultural values and ideology surrounding unprotected sex and the beliefs that underlie this behaviour. A link would have to be made between individually-held normative beliefs (that is, the belief held by individual miners' significant others that it is acceptable to have unprotected sex) and the taken-for-granted reality (the broader social construction around the "build-up" of sperm causing mental illness). The intervention would be successful if the taken-for-granted reality that informs unprotected sex is changed in that community. Kippax and Crawford's argument is that attitudes and subjective norms at the community level - and the behaviour that they influence - are more influential than individually-held cognitions. These community-level attitudes and norms are a social construction that must be modified if we are to successfully change behaviour. The theory of reasoned action, they argue, ignores the community-based explanation of social behaviour.

An argument similar to Kippax and Crawford's is advanced by Kashima et al. (1993). Kashima and colleagues believe that since sexual activity is dyadic, the partner's attitudes and norms also need to be measured. Assessing both partners' attitudes, subjective norms and perceived behavioural control will augment our knowledge of decision-making in cooperative behaviours such as condom use. The causal structure of the

theories of reasoned action and planned behaviour is tailor-made for individual behaviour. It does not accommodate cooperative behaviour, an area of application that Kashima and colleagues believe is open to further research.

Kippax and Crawford (1993) also express their doubts concerning the linearity of the theory of reasoned action. They maintain that norms and beliefs do not necessarily precede or determine behaviour or action, particularly with regard to behaviours such as sexual behaviour and condom use. The linearity of the theory of reasoned action fails to account for why risky sexual behaviour occurs in spite of the appropriate beliefs and norms being espoused by the actor. This linearity of causality assumption, Kippax and Crawford argue, fails to recognise the complexity and dynamic interplay between practice, beliefs and normative structures. This failure accounts for why the theory of reasoned action does not explain why people who are exposed to the same situation do not necessarily behave in the same way. This, they maintain, is proof that the relationship between beliefs, norms and behaviour is not direct, but rather complex and multi-layered.

In a study exploring the application of cognitive behaviour therapy techniques to behaviour change interventions based on the theory of planned behaviour, Hobbis and Sutton (2005) criticise the theory of planned behaviour because it fails to provide guidance on how to promote behaviour change. The theory is effective in explaining, measuring and predicting behaviour, but does not specify techniques that can be applied in order to change behaviour. Hobbis and Sutton are also critical of the theory's intervention development based on modal salient beliefs. Their objection is that it is difficult to adequately represent modal salient beliefs on which interventions will be based. An intervention based on modal salient beliefs, they contend, may not be effective, as many individuals in the target group will be presented with information designed to change beliefs that are not salient to them. Hobbis and Sutton propose an

alternative approach which elicits *individually* salient beliefs. This would result in individually tailored interventions based on the content of each individual's idiosyncratic set of salient beliefs – an approach that would make group-based interventions cumbersome and unworkable.

Kaiser, Schultz and Scheuthle (2007) criticise the methodological process on which research employing the theory of planned behaviour relies. Behaviour measurement in the theory of planned behaviour, according to Kaiser and colleagues, adheres to the *compatibility principle*. The compatibility principle refers to compliance with a strict measurement paradigm as a way to improve the quality of concept measures. In the case of the theory of planned behaviour, the principle requires that this theory be applied almost exclusively in a specific manner to explain a single action. According to Kaiser and colleagues, the reliability and validity of such specific, single-item measures is wanting. Single-item measures tend to focus on one domain of a behaviour, thus missing the related behaviours. For example, condom use is not a single behaviour but an *aggregate* of various behaviours such as buying a condom, negotiating its use with a partner and using it correctly. The weakness of research that adheres to the compatibility principle is that the obtained results are a reflection of method-implied bias and do not constitute generaliseable, valid statements about underlying relationships. This criticism suggests that some of the intention-behaviour relationships found in theory of planned behaviour studies could be more a reflection of those studies' compliance - implying bias - with the methodology prescribed by Ajzen and Fishbein (1980) than actual relationships. The underlying implication is that had those studies violated Ajzen and Fishbein's methodology, the intention-behaviour relationships could have turned out differently.

Other researchers (for example, Conner & Armitage, 1998; Landridge, Sheeran & Connolly, 2007; Rhodes & Courneya, 2003; Ravis & Sheeran, 2003) have questioned the sufficiency (that is, the assumption of

completeness in accounting for behaviour) of the theory of reasoned action and the theory of planned behaviour, as postulated by Ajzen and Fishbein (1980) and Ajzen (1991). They suggest an extension of these theories because the variables of attitude, subjective norm and perceived behavioural control cannot be the only ones that explain behaviour - an intimation to which Fishbein is loath because "theories that include 'everything but the kitchen sink' do not typically last very long" and "...stringing together a long list of variables in a regression equation does not make a theory" (Fishbein, 1993, p. xxi).

2.4 PROPOSED EXTENSION OF THE THEORIES OF REASONED ACTION AND PLANNED BEHAVIOUR

The foregoing critique does suggest that the theories of reasoned action and planned behaviour are not wholly adequate in predicting and explaining behaviour. In the seminal article in which he introduced the theory of planned behaviour, Ajzen (1991,p.199) concedes that the theory is "open to the inclusion of additional predictors if it can be shown that they capture a significant proportion of the variance in intention or behaviour after the theory's current variables have been taken into account".

Some meta-analytic studies showed that a significant amount of variance in intentions and the various behaviours subjected to enquiry was not accounted for by theory of reasoned action/theory of planned behaviour variables (Ajzen, 1991; Armitage & Conner, 2001; Sheeran & Orbell, 1998; Sheeran & Taylor, 1999). These meta-analyses have found, for example, that intentions account for between 19 and 38 percent of the variance in behaviour in prospective studies. Attitudes and subjective norms, on the other hand, account for between 33 and 50 percent of the variance in intentions, while perceived behavioural control increases explained variance in intentions by between 5 and 12 percent. These

meta-analytical studies show that the theories of reasoned action and planned behaviour do not explain a significant amount of variance in intentions and behaviour. Consequently, there have been suggestions for an extension of the theories in order to improve their predictive power, as well as increase their effectiveness in explaining and changing behaviour (Armitage & Conner, 2001; Conner & Armitage, 1998; Kashima et al., 1993; Landridge et al., 2007; Sheeran & Orbell, 1998; Warwick, Terry & Gallois, 1993).

The adequacy of the theory of reasoned action has been questioned by Landridge et al. (2007) on the grounds that the past decade has been dominated by the *additional variables paradigm* in relation to the theory of reasoned action. This paradigm challenges the adequacy assumption of the theory of reasoned action – and, by extension, the theory of planned behaviour – on the grounds that: (a) the level of prediction of intention and behaviour provided by the theory of reasoned action is far from perfect; and (b) the theory of reasoned action overlooks important additional cognitive predictors of intention and behaviour. Thus, researchers (for example, Conner & Armitage, 1998; Ravis & Sheeran, 2003; Rhodes & Courneya, 2003) began to identify additional variables that could augment the predictive utility of the theory of reasoned action.

The additional variables that have been suggested for inclusion in the theory of reasoned action and the theory of planned behaviour to increase their predictive use are:

- *Belief salience*: This refers to the most salient belief(s) that determine a person's attitude at a particular point in time. It is the belief that outweighs the other beliefs that a person possesses at that time (Conner & Armitage, 1998);
- *Past behaviour and habits*: Although research is inconclusive, there are indications that past behaviour may determine current behaviour

rather than the cognitions described in the theories of reasoned action and planned behaviour (Conner & Armitage, 1998; Rhodes & Courneya, 2003);

- *Moral norms*: This refers to people's sense of obligation to perform ethical behaviours and not perform unethical behaviours, and should provide support for, and have an influence on, behaviours that have a moral or ethical dimension. Moral norms work in parallel with attitude, subjective norm and perceived behavioural control (Conner & Armitage, 1998; Landridge et al., 2007);
- *Descriptive norms*: This refers to perceptions of significant others' own attitudes and behaviours in the particular domain. The assumption is that the opinions and actions of significant others provide information that people may use in deciding what to do (Rivis & Sheeran, 2003; Sheeran & Orbell, 1998);
- *Self-identity*: This refers to the salient part of a person's self which relates to a particular behaviour (Conner & Armitage, 1998; Landridge et al., 2007). It reflects the extent to which a person sees him/herself fulfilling criteria for a social role, for example "someone who is an AIDS activist".
- *Affect*: Attitudes are not one-dimensional (that is, not purely cognitive), as postulated by Ajzen and Fishbein (1980), but have an emotional (affective) component as well. Affective attitudes concern the emotional consequences of performing a behaviour (Conner & Armitage, 1998; Landridge et al., 2007).
- *Anticipated regret*: Closely related to affect, anticipated regret is beliefs about the extent of regret, unhappiness or disappointment that would result if a person fails to perform a required behaviour

(Conner & Armitage, 1998; Landridge et al., 2007; Sheeran & Orbell, 1998).

- *Desire*: Desire is distinct from intention in that whereas the formation of an intention implies that a decision has been made to perform a behaviour, desire refers to a person's wishes and wants, and precedes intention formation. Desire is construed as a mediator of the relationship between theory of reasoned action variables and intention (Armitage & Conner, 2001; Landridge et al., 2007).
- *Social relations*: This is the second component of a subjective norm, which was introduced by Charng, Piliavin and Callero (1998, in Landridge et al., 2007) and refers to beliefs about the likelihood of and importance attached to one particular consequence of performing a behaviour, namely friendship formation. The possibility of developing new social relationships is an important goal for some people and is likely to inform their intentions to perform a behaviour.

Conner and Armitage (1998) and Landridge et al. (2007) believe that all these variables, singularly or jointly, may influence the intention to perform a behaviour when they are salient. They contend, therefore, that the three predictors posited by the theory of planned behaviour – and by association, the theory of reasoned action – cannot be the sole predictors of behaviour.

2.5 SUMMARY

This chapter provided a detailed explanation of the two theories that form the basis of this study by virtue of their documented success in defining what drives behaviour – including appropriate health behaviour. Both theories consider intention to be the key driver of behaviour. The theory of reasoned action is applicable when control is high. The theory of planned

behaviour is an extension of the theory of reasoned action, and is intended to account for situations in which control (that is, perceived probability of success and actual control) is low. Both theories have been extensively applied to HIV/AIDS research.

While a lot of research has been conducted on the predictive and explanatory value of the theories, little research has been conducted on their application in the design of behaviour change interventions. As the focus of this thesis is the application of the two theories to HIV/AIDS health promotion in the workplace, the next chapter will review HIV/AIDS research based on the theories of reasoned action and planned behaviour.

CHAPTER 3

LITERATURE REVIEW: HIV/AIDS RESEARCH BASED ON THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

As seen in Chapter 2, the theory of reasoned action (Ajzen & Fishbein, 1980) proposes that behaviour under an individual's control is best predicted by the intention to perform it. Intentions are, in turn, a linear additive function of attitude towards the behaviour being predicted and subjective norms regarding the behaviour. The theory of planned behaviour was proposed by Ajzen (1985; 1991) as an extension of the theory of reasoned action to predict behaviour that is not completely under a person's control. The theory of planned behaviour proposes that in addition to the theory of reasoned action's variables of attitude and subjective norm, perceived behavioural control is an important variable that determines whether or not people would attempt to engage in the behaviour in question.

As the objective of this thesis is to apply the theory of reasoned action and the theory of planned behaviour to a HIV/AIDS health promotion programme, research that applied these theories to AIDS prevention will be reviewed in this chapter.

3.1 RESEARCH APPROACHES TO HIV/AIDS PREVENTION

Lewis and Kashima (1993) divide the psychosocial and behavioural research literature on HIV/AIDS into three categories: intervention studies, descriptive surveys and theory-based studies. These three categories are discussed in more detail below.

3.1.1 Intervention Studies

Lewis and Kashima (1993) describe intervention studies as those that seek to describe, not evaluate, programmes or campaigns that have been designed to prevent the spread of HIV/AIDS. Most of these studies tend to identify “high risk groups” and focus their attention on changing “risky” behaviours (Bryan, Aiken & West, 1996; Jemmott & Jemmott, 1992; Kaufman, Shefer, Crawford, Simbayi & Kalichman, 2008; Sunmola, Adebayo, Olapegba & Alarape, 2006; Patel, Gutnik, Yoskowitz, O’Sullivan & Kaufman, 2006). Most of these studies aimed their interventions at groups perceived as being “at high risk” such as homosexual males and bisexuals, adolescents, injecting drug users, female commercial sex workers, college students and the general public (Bryan, Ruiz & O’Neill, 2003; Heeran, Jemmott III, Mandeya & Tyler, 2007; Kasprzyk, Montano & Fishbein, 1998; Maman, Mbwambo, Hogan, Kilonzo & Sweat, 2001; Morrison, Gillmore & Baker, 1995; Yzer, Fishbein & Hennesy, 2008). Mostly, they have been criticised for encouraging the stigmatisation of identified target groups. Intervention studies have focused mainly on population-based prevention strategies such as the public health campaigns and educational programmes reported from Uganda and other African countries. As this thesis will design an intervention model based on existing theory, it is itself partly an intervention study.

3.1.2 Descriptive Surveys

Lewis and Kashima (1993) further describe descriptive surveys as studies that report information about variables such as behaviour, knowledge, attitudes or any combination thereof, occasionally with seropositive data to indicate the prevalence of HIV within a specific sample (Boer & Mashamba, 2005; Boldero, Moore & Rosenthal, 1992; Kok, Hospers,

Harterink & De Zwart, 2007; Maman et al., 2001; Ndida, Uzodike, Chimbwete, Pool & MDP, 2007; Zungu-Dirwayi, Shisana, Louw & Dana, 2007). Most of these studies, which use fairly selective or self-selecting samples, report summary statistics with limited reporting of tests of association between variables (for example, Boyd & Wandersman, 1991; Bryan et al., 2003). Lewis and Kashima caution that the utility of such studies is limited to offering preliminary information and that sampling and methodological inconsistencies limit the usefulness of the data as accurate indicators of change. While recommendations for interventions can be made from such studies, the lack of a common theoretical foundation for the research tends to undermine the power of conclusions reached.

Most of the research that is reviewed in this chapter could be categorised as descriptive surveys. This category has been well researched and, as this thesis attempts to do, there is a need to move beyond descriptive surveys to more applied research.

3.1.3 Theory-Based Research on HIV/AIDS Preventive Behaviour

According to Lewis and Kashima (1993), theory-based research seeks to be more descriptive and predictive in exploring the reasons for certain behavioural practices and beliefs, and is theoretically based in a focused way or broadly model-driven. Most of these studies rely on the multivariate prediction of key behavioural variables or manipulation of variables in order to make recommendations for future prevention strategies. The need for theory-based research in the field of HIV/AIDS prevention was highlighted by Fisher and Fisher (1992, 1993) when they reported on the problem of research based on informal conceptual and logical grounds. They argued that in order for research findings to be meaningful, the research has to be based on a formal theory and should be preceded by an elicitation study to identify group-specific issues that

may have to be the focus of intervention. They are of the view that interventions based on elicitation research to assess group-specific needs, sensitivities and intervention tactics are more apt to be successful than those based on investigators' intuition or informal conceptual and logical grounds.

Lewis and Kashima (1993) view studies such as those mentioned by Fisher and Fisher (1992, 1993) as having the advantage of offering some cumulative guide to the development of effective behavioural interventions for HIV/AIDS. These theories have in common the premise that the AIDS epidemic can be managed by controlling human voluntary action. The theories strive to encourage behaviours that reduce the probability of HIV infection and discourage behaviours that have a high probability of transmitting the disease. Lewis and Kashima mention the health belief model (Becker, in Lewis & Kashima, 2003), the theory of reasoned action (Ajzen & Fishbein, 1980) and the self-efficacy theory (Bandura, 1977) as examples of theories relevant to the understanding of HIV/AIDS preventive behaviour.

Commensurate with suggestions made by Fisher and Fisher (1992, 1993) and Lewis and Kashima (1993), this thesis can be categorised as theory-based research on HIV/AIDS preventive behaviour. It focuses on the theory of reasoned action and its extension, the theory of planned behaviour, in terms of understanding HIV/AIDS behaviour and designing an appropriate intervention model. It is also an intervention study as it uses psychological theory to design an intervention model that can be used to curb the incidence of HIV/AIDS in a working population. The research reviewed here will be divided into three categories. Firstly, studies on condom use behaviour based on the theories of reasoned action and planned behaviour will be reported, followed by similar studies on voluntary counselling and testing, and finally, monogamous or one-sex partner behaviour.

3.2 HIV/AIDS RESEARCH BASED ON THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

The theory-based research on HIV/AIDS to be reviewed here will focus on the three HIV/AIDS health behaviours that form the focus of the study: condom use, voluntary counselling and testing, and monogamy. Most of the theory-based research is on condom use behaviour. Only three theory-based studies on monogamy and voluntary counselling and testing were found. Almost all the studies employed Ajzen and Fishbein's (1980) recommended research methodology and tested hypotheses on relationships between intentions, theoretical constructs and specific AIDS preventive behaviour.

3.2.1 Theories of Reasoned Action and Planned Behaviour and Condom Use

Regular condom use has been identified as the most effective method of preventing the spread of HIV and AIDS (Department of Health, 2000; Rehle et al., 2007). Condom use - and attitudes towards it - has been the focus of HIV/AIDS behavioural research since the 1980s, with the advent of AIDS research in behavioural science (Ross & McClaws, 1993). The 1980s also heralded an era of behavioural science research in which social psychological models of behaviour change were applied to condom use behaviour (Abraham et al., 1999; Fisher & Fisher, 1992; Sheeran & Orbell, 1998; Sheeran & Taylor, 1999).

In line with Ajzen and Fishbein's (1980) proposition of a direct relationship between behaviour and intentions, most of the condom use research that applied the theories of reasoned action and planned behaviour reported a direct relationship between condom use intention and behaviour. Sheeran and Orbell (1998) conducted a meta-analysis to examine, *inter alia*, the extent to which behavioural intentions are associated with

condom use in heterosexual and gay men. A moderate relationship was found between intention and condom use behaviour, which suggests that intentions to use a condom do not always translate into condom use behaviour. No significant gender differences were found.

Kashima et al. (1993) studied the intention-behaviour relationship in cooperative condom use. They found that the level of condom use increased when the behavioural conditions were met, that is, when a condom was available and both parties agreed to use it – an indicator that both parties had the intention of using a condom. A similar finding was made by Fisher, Fisher and Rye (1995), who found from their regression analyses that intentions to engage in nearly all AIDS preventive behaviours were a function of attitudes towards the act and subjective norms. Attitudes and norms accounted for a considerable proportion of variance in condom use intentions. Other studies (Bogart, Cecil & Pinkerton, 2000; Bosompra, 2001; Morrison et al., 1995) also made the finding that attitude and subjective norm determined intention which, in turn, is closely related to behaviour.

The implication of these findings is that getting people to use condoms (or engage in other AIDS preventive behaviours) would require the targeting of their salient beliefs, influencing their beliefs to be favourable to condom use, enhancing the positive perceptions of their referents and motivating them to comply with their referents' wishes. A limitation of these findings is that they cannot be generalised to whole populations, as they used convenient samples of university students, most of whom were adolescents at the time of the research. Age is an important factor in sexual decision making and, as Sheeran and Orbell (1998) found in their meta-analysis, can be a moderating factor in the intention - behaviour relationship. Sheeran and Orbell found the effect size of the intention – behaviour relationship to be stronger among adults than among adolescents, suggesting that adults are more likely to be cautious in their sexual relationships. This implies that adults and adolescents will have

different health promotion needs. Another factor which could limit the generalisability of the findings is the nature of sexual relationships during adolescence. The intention-behaviour relationship can also be mediated by whether steady or casual partners are involved (Morrison et al., 1995). Young people are more likely to use condoms with casual than steady partners. This thesis is expected to clarify the intention-behaviour relationship among working adults in South Africa, a population about which little is known with regard to this theme.

The review that follows will group condom use studies applying the theories of reasoned action and planned behaviour into four broad categories: studies applying the theory of reasoned action in its original or modified form; studies combining the theory of reasoned action with other models; studies using only the theory of planned behaviour; and those combining the theory of reasoned action and the theory of planned behaviour. Within these broad categories, the intention-behaviour relationship profiles of the studies will be highlighted. Some of the studies report high correlations between intention and attitude (Boldero et al., 1992; Jemmott III et al., 2007; Sheeran & Taylor, 1999), intention and subjective norm (Bosompra, 2001; Lugoe & Rice, 1999; White, Terry & Hogg, 1994) and intention and perceived behavioural control (Abraham et al., 1999; Giles, Liddell & Bydawell, 2005; Morrison et al., 1995; Nucifora, Gallois & Kashima, 1993).

Included in the review are studies conducted in sub-Saharan Africa, the region considered to be a unique and urgent HIV/AIDS case, as it accounts for nearly two thirds of global HIV/AIDS cases (Campbell, 2003; UNAIDS/WHO, 2000; Whelehan, 2009; Whiteside & Sunter, 2000). The theories of reasoned action and planned behaviour have also been used in attempts to understand and explain the HIV/AIDS problem in Africa. The African studies reviewed also provide strong support for the predictive power of the theory of planned behaviour, and show that condom use in African populations can be predicted by social cognitive-models.

3.2.1.1 Studies Applying Modified or Extended Forms of the Theory of Reasoned Action to Condom Use Behaviour

As seen in Chapter 2, the adequacy of the theory of reasoned action has been questioned after Ajzen (1991) conceded that a significant proportion of the variance in behaviour is not predicted by the theory of reasoned action, and the theory is therefore open to the inclusion of other variables. In line with Ajzen's thinking, Morrison et al. (1995) examined the utility of the original theory of reasoned action and its augmented version for understanding condom use decisions among heterosexual adults who were at high risk for sexually transmitted diseases and HIV infection. The finding of this longitudinal study was that attitudes and norms about condom use were significantly and strongly related to condom use intentions for both steady and casual partners. Women were under more normative influence than men, a possible indicator of their weaker role in relationships. Self-efficacy was more strongly related to condom use behaviour with steady than casual partners.

A similar finding was made by Bogart et al. (2000) in a study examining the use of female condoms among African-American adults. The only difference was that Bogart and colleagues found that self-efficacy in men showed a marginally significant relationship to intention to use a female condom with casual partners, but not with steady partners. For both men and women, self-efficacy showed weak correlations with intention to use a female condom, and did not add to the explanatory power of the theory, suggesting that self-efficacy may be a weaker predictor of female condom use for both men and women. A regression analysis showed that entering self-efficacy in the second stage did not improve the variance in intention for both men and women, and the final model was not significant for either sex.

Both the Morrison et al. (1995) and Bogart et al. (2000) studies, which employed samples drawn from the general population, suggest that

partner type (steady versus casual), attitude and subjective norm are significant moderators in sexual decision making. Condom self-efficacy appears to be a function of the type of sexual relationship. Different dynamics appear to manifest themselves, depending on whether a relationship is casual or steady. As monogamy is one of the variables this thesis will be examining, it would be useful to consider the nature of participants' sexual relationships as one of the demographic factors.

Bosompra (2001) examined the applicability of the theory of reasoned action to the study of condom use intentions among Ghanaian university students. Participants were categorised as intenders (those who reported an intention to use a condom in the next sexual encounter) and non-intenders (those who did not intend to use a condom in the next sexual encounter). Intention and the theory of reasoned action constructs were measured in accordance with the guidelines prescribed by Ajzen and Fishbein (1980).

The results of Bosompra's (2001) study showed no gender differences in intention to use condoms. Both males and females exhibited a fairly high level of intentions to use a condom. The main outcome belief among respondents was that condoms helped prevent HIV/AIDS, sexually transmitted illnesses and unwanted pregnancies. The participants reported favourable attitudes towards consistent use of a condom every time they engaged in sexual intercourse and perceived considerable normative pressure to use them. In relation to the subjective norm, a medical doctor was the most frequently cited significant other, followed by parents, close friends and the sexual partner.

Regression analyses showed that attitude and subjective norm were significant predictors of intention to use condoms consistently. The regression coefficient was higher for subjective norm than for attitude, implying that subjective norm was more important than attitude in explaining variations in condom use intentions. Results of beliefs

underlying each measure showed that intenders held stronger and more favourable beliefs about the HIV/STI/Pregnancy prevention value of condoms than non-intenders. In terms of normative beliefs, all four referents (medical doctor, parents, close friends and sexual partner) were significant in differentiating between intenders and non-intenders. Referent expectations were what distinguished the two groups. Intenders tended to perceive greater pressure from their significant others to use condoms. Both groups were equal in their motivation to comply with the wishes of their referents. This study shows the relevance of interventions derived from the theory of reasoned action in African populations (Bosompra, 2001).

Bosompra's (2001) findings contradict those made by Skinner (2000), who found a strong negative relationship between condom attitudes and intended behaviour in a sample of male youth in two South African townships. Condoms were associated with negative beliefs such as reduced sexual pleasure, reduced intimacy, reduced trust and relationship impairment. Among females, the most important behavioural belief that discouraged condom discussion with male partners was that condom use would anger the partner, thus putting the relationship in jeopardy. The most important normative influences were from family members, sex partner, friends, and nurses and doctors. The addition of perceived behavioural control did not make a difference to intended behaviour.

Heeran et al. (2007) compared the predictive utility of the theory of reasoned action in condom use intentions among American and South African university students. Hierarchical multiple regression analyses showed that attitude, subjective norm and self-efficacy predicted the frequency of condom use, percentage of protected sexual acts over the last three months and intention to use condoms in the next three months. Higher attitude, subjective norm and self-efficacy scores were strongly associated with condom use intentions. Nationality contributed to differences in R-squared for frequency of condom use and intention to use

condoms, but not for percentage of protected acts. A comparative analysis revealed that subjective norm was more predictive of frequency of condom use and intention in the American sample than in the South African one. The same finding was made in relation to attitude and intention. Self-efficacy was more strongly related to intention in the South African than in the American sample. In general, the theory of planned behaviour explained more variance in the American than South African sample. The findings suggest that interventions are more urgently needed for South African students, and that such interventions should seek to increase attitudes, subjective norms and self-efficacy in relation to the three outcomes studied (Heeren et al., 2007).

In a similar study focusing on sub-Saharan (that is, South Africa and other sub-Saharan countries) university students, Heeran, Jemmott III, Mandeya and Tyler (2009) investigated whether certain behavioural beliefs, normative beliefs and control beliefs predicted condom use intention and subsequent condom use. In this study Heeran and colleagues added hedonistic beliefs (that is, beliefs that condom use would not interfere with sexual enjoyment) as an additional variable. They also added a three month follow-up measurement period. Regression coefficients showed condom use intention to be strongly predicted by more favourable hedonistic beliefs, greater sexual partner and peer approval, greater condom use impulse control and greater condom technical skill. Baseline condom use intention predicted self-reported condom use at three-month follow-up. Country of origin and age was found to moderate condom use with sexual partner approval, peer approval and technical skill being more strongly related to intention among other sub-Saharan Africans and participants over the age of 25 years in a steady relationship.

Other researchers (Lugoe & Rice, 1999; Molla, Nordrehaug-Astrom & Brehane, 2007) extended the theories of reasoned action and planned behaviour by adding past behaviour (in relation to condoms) as an additional variable. Regression analyses performed in these studies

showed past behaviour to predict a significant proportion of the variance in condom use self-reported behaviour over and above the three theoretical constructs. Other studies (Boyd & Wandersman, 1991; Kasprzyk, Montano & Fishbein, 1998) found past condom use behaviour to increase the variance in condom use intentions in studies that integrated the theory of reasoned action with other models. The significance of past behaviour as an important determinant of behaviour suggests that interventions such as the one implemented for this thesis need to succeed in instilling safe sex behaviour in people, as this will increase their chances of engaging in safe sex in future.

In a study of HIV-negative heterosexual methamphetamine users, Mausbach, Semple, Strathdee and Patterson (2009) modified the theory of planned behaviour by adding methamphetamine use, desire to stop unsafe sex practices and intention to have sex to the original three variables of the theory. Regression analyses showed that this expanded model accounted for 48% of the variance in safer sex intentions. While the three original theory of planned behaviour constructs remained significant predictors of safer sex behaviour, it was also found that lower methamphetamine use, greater desire to stop unsafe sex and decreased intentions to have sex were associated with greater safer sex intentions. In addition, male gender and minority status were significant predictors of greater safer sex intentions. The findings of this study show that the theory of planned behaviour can be expanded by adding other variables that are unique to the circumstances of the research context.

3.2.1.2 Studies Integrating the Theory of Reasoned Action with other Models

Questions about the adequacy of the theory of reasoned action have led other researchers to combine it with other models in attempts to increase its explanatory power. Kasprzyk et al.(1998) conducted a study using an

integrated behavioural model to understand and predict condom use among high risk groups (men having sex with men, commercial sex workers, injecting drug users and multiple partner heterosexuals). Their integrated behavioural model included elements from the theory of reasoned action (Ajzen and Fishbein, 1980), theory of planned behaviour (Ajzen, 1991), social cognitive theory (Bandura, in Kasprzyk et al., 1998), theory of interpersonal behaviour (Triandis, in Kasprzyk et al., 1998) and health belief model (Becker, in Kasprzyk et al., 1998). Similarly, Boyd and Wandersman (1991) compared the efficacy of the theory of reasoned action with Triandis' model of attitude-behaviour relationship in predicting condom use in a group of undergraduate students.

Kasprzyk et al. (1998) found that attitude, social norm and facilitators/constraints were significantly correlated with intention and behaviour. In this way, the findings provide strong support for an integrated model. The results of Boyd and Wandersman's (1991) study showed that the theory of reasoned action explained 38% of the variance in intention to use a condom in the next three months, thus agreeing with Kasprzyk and colleagues' finding on the predictive power of attitudes, social norms and facilitators/constraints. Boyd and Wanderman found that the variables Triandis labelled "cognitions" (that is, personal normative beliefs, role beliefs, normative beliefs/motivation to comply, affect towards condom use and expectancy value beliefs) accounted for 45% of the variance in intention to use a condom. When reported condom use over the past three-and-a-half months was explained using the Triandis model, the six variables which influence condom use behaviour (that is perceived control, perceived knowledge, perceived susceptibility, fear of AIDS, self-efficacy and past condom use behaviour) explained 53% of the variance in reported condom use behaviour. Only past behaviour (habits) and perceived susceptibility achieved significant regression coefficients. When past condom use behaviour was excluded, the remaining six variables together explained 41% of the variance in reported behaviour.

The significant correlations and regression weights obtained by Kasprzyk et al. (1998) and Boyd and Wandersman (1991) confirm the utility of an integrated behavioural model combining constructs from different theories to develop theory-driven interventions to influence condom use intentions and behaviour. It also confirms the covariance that exists between variables across theories. This indicated the feasibility of an eclectic approach in studies such as the one this thesis undertook. However, an eclectic approach was not going to be adopted in this thesis because this study was the first known attempt to develop a theory-based intervention model in South Africa. At this early phase of theory application in South Africa, it is best to heed Fishbein's (1993) warning about the danger of lumping theories together, as this tends to neutralise the philosophical base of the original theory. For this reason, the theories of reasoned action and planned behaviour were examined in their original form, thus maintaining their parsimony and simplicity. It is only when different theory-based intervention models have been developed and one knows what does or does not work in a given context that one can start experimenting with theoretical eclecticism.

3.2.1.3 Studies applying the Theory of Planned Behaviour to Condom Use

Other researchers applied the theory of planned behaviour in order to accommodate situations of low individual control. Such studies added perceived behavioural control to the original theory of reasoned action.

Bryan et al. (2003) tested the utility of the theory of planned behaviour in the prediction of intentions to engage in safe sex behaviour and safe needle use behaviour among incarcerated individuals. A similar high-risk group study was conducted by Wise, Goggin, Gerkovich, Metcalf and Kennedy (2006) on condom use intentions in a diverse group of African-American youth.

Results from both studies indicated a positive relationship between theory of planned behaviour variables and condom use intentions. Consistent with Sheeran and Taylor's (1999) meta-analysis, Bryan et al. (2003) found that the theoretical constructs of the two theories account for a significant proportion of the variance in intention to use condoms. Perceived behavioural control was stronger for non-needle sharing behaviour than for condom use, and to be higher among African-American participants. Wise et al. (2006) found that the theory of planned behaviour accounted for a lower variance in condom use intention than Sheeran and Taylor suggested, and that perceived behavioural control for condom use was the lowest among the female sample, a possible indicator of their weaker position in relationships. Greater perceived behavioural control covaried with positive condom attitudes and subjective norms for the sexually experienced sample. These two studies found support for the theory of planned behaviour in predicting condom use intentions.

In a study with sexually active undergraduate students Boldero et al. (1992) examined the applicability of Ajzen and Madden's (1986) theory of planned behaviour to condom use intentions and condom use behaviour in specific contexts, namely the type of relationship (steady or casual), consumption of alcohol or drugs, sexual arousal and concern about infection with AIDS and other STDs. To assess the stability of intentions, intention was measured twice, the first measurement being performed prior to and independent of a sexual encounter (prior intention) and the second immediately before a specific sexual encounter (intention in action).

The results of the Boldero et al. (1992) study showed that measures of AIDS beliefs and AIDS evaluation indicated that respondents held positive beliefs towards condom use. The three significant others who most influenced normative beliefs were health professionals, family and friends, in that order. The significant others with whose wishes respondents were most motivated to comply were friends, family and health professionals

respectively. Respondents also perceived the benefits of condoms while acknowledging a few disadvantages. The majority of respondents met the behavioural conditions of condom use - that is, they intended to use a condom prior to the sexual encounter, had a condom available, communicated with their sexual partners about the need to use a condom and actually used one. This finding further validates the link between intentions and actual behaviour. Regression analyses showed that subjective norms and the three attitude measures accounted for 27% of the variance in prior intention. Prior intention, communication about condom use and condom availability were also significant predictors of condom use. Intention in action, occurring in the third step of a regression analysis, together with sexual arousal, also predicted condom use. The results of this study suggest that the contextual factors of sexual arousal, condom availability and communication with a partner about using a condom have direct effects on condom use. The study provided limited support for Ajzen and Madden's (1986) theory of planned behaviour, in that there was little proof that condom use was predicted by theoretical constructs in the absence of contextual factors.

The Boldero et al. (1992) study attests to the adequacy problem of the theory of planned behaviour raised by Kasprzyk et al. (1998) and Boyd and Wandersman (1991). This implies that research on the model has to control for those contextual factors that may influence behaviour over and above the theoretical variables. Another challenge that this finding poses is that intentions seem more predictive if they are measured close to the time of the intended act. This may be impractical for most research situations, where researchers do not have ready access to a convenience sample. Furthermore, working adults' sexual activities may be less planned than those of adolescents, who may have access to sex partners at specific times. The results of the study are useful in that the theory-based intervention would sensitise participants to contextual factors,

which may make it easy or difficult (that is, factors which may determine self-efficacy and control beliefs) to engage in the required behaviour.

In a study that departed from the methodological norm, Abraham et al. (1999) cautioned that measures of intention usually leave substantial proportions of the variance in behaviour unexplained. To address this shortcoming, their study sought to improve behavioural prediction by identifying post-decisional cognitive processes capable of distinguishing between intenders who acted in accordance with their intentions and those who did not. Abraham and colleagues sought to study the additional cognitive correlates of condom use by understanding the post-intention cognitive processes that distinguish between intenders who act and those who do not act.

The results of the Abraham et al. (1999) study showed that measures of condom use intention and general condom use self-efficacy distinguished between participants who used a condom in their last sexual encounter and those who did not. The majority of those who used condoms intended to use them. The majority of those who reported not using condoms had intended to use them. An analysis of the post-decisional measures (that is, differences between intenders who did and did not use condoms) was performed. The eleven variables used in this measure included general self-efficacy, four action-specific self-efficacy measures (acquisition, suggestion, negotiation and social management of putting on a condom), four action-specific planning measures, having a condom available and the relative importance of condom use. Among the intenders, a discriminant analysis comparing users and non-users of condoms at their last sexual encounter showed that the relative importance of condom use was strongly correlated with condom use, while negotiation planning, general self-efficacy, negotiation self-efficacy and having a condom available showed moderate correlations. Weaker but significant correlations were observed for suggestion self-efficacy as well as self-efficacy and planning in relation to the social management of putting on a

condom. The findings of this study attest to the effectiveness of interventions that focus on planning, enhancing confidence in relation to condom use negotiation and encouraging students to carry condoms. Such interventions appear to have a bearing on whether people use condoms or not.

The findings by Abraham et al. (1999) are relevant to the current thesis in that Time 2 (one month post-intervention) and Time 3 (six months post-intervention) behavioural assessments must take into account the intentions that participants had at baseline assessment. This would help in determining whether or not participants behaved in accordance with their intentions, which can help in answering Ajzen and Fishbein's (1980) concern about the stability of intentions over time.

The theory of planned behaviour has been applied in African contexts as well (Giles et al., 2005; Jemmott III et al., 2007; Lugoe & Rice, 1999; Molla et al., 2007). All the studies measured participants on attitude, subjective norm, perceived behavioural control or self-efficacy and intention. Lugoe and Rice (1999) and Molla et al. (2007) added past behaviour to the equation. Like the European studies, the African studies found that the theory of reasoned action accounted for a significant proportion of the variance (23% to 67%) in condom use intention, thus confirming the predictive utility of the model, as borne out by meta-analyses (Armitage & Conner, 2001; Sheeran & Taylor, 1999). It is hard to draw conclusions regarding the construct that most accounts for the variance, as the findings were contradictory. For example, Molla et al. (2007) found attitude to be the strongest predictor, while Lugoe and Rice (1999) and Jemmott III et al. (2007) found perceived behavioural control to be the main predictor. Interestingly, none of the studies found subjective norm to be the strongest predictor – an oddity, given the collective nature of African identity which extends to help-seeking behaviour (Van Dyk, 2001a, b). Past behaviour was found to be a significant predictor of condom use intentions (Lugoe & Rice, 1999; Molla et al., 2007).

The African research reviewed confirms that the theory of planned behaviour – perhaps social-cognitive models in general – can be applied to sexual behaviour research in African contexts, and that data can be collected in indigenous languages, as Giles et al. (2005) and Jemmott III et al. (2007) did. The shortcoming of African studies, like their Western counterparts, is that they only went as far as describing explanatory models based on the theories of reasoned action and planned behaviour. While these findings may be useful in providing pointers for intervention design, they fell short of designing an intervention based on these theories, which this thesis attempted to do. The other shortcoming is that in spite of the fact that whole African populations – including the working adult cohort - are at high risk of HIV/AIDS infection (Human Sciences Research Council, 2007; Hunter, 2007; Whiteside & Sunter, 2000), the studies still used mainly adolescent or university student samples. This implies that little is known about the HIV/AIDS health profile of African working adults, a population which this thesis studied.

3.2.1.4 Condom Use Studies Combining the Theory of Reasoned Action with the Theory of Planned Behaviour

Sheeran and Taylor (1999) conducted a meta-analysis of 23 psychosocial predictors of intentions to use condoms. The psychosocial predictors were drawn from the health belief model (Becker, in Sheeran & Taylor, 1999), the theory of reasoned action (Ajzen & Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1991). Only the findings in relation to the theory of reasoned action and the theory of planned behaviour are reported here.

The results of Sheeran and Taylor's (1999) meta-analysis showed strong correlations for the theory of reasoned action variables. In all the studies that measured attitudes towards condom use, attitude had the strongest relationship with intentions, followed by subjective norms, indicating that

positive attitudes and supportive subjective norms were both associated with intentions to use condoms. Descriptive norms (perceptions of peers' condom-related attitudes and behaviour) were moderately related to intentions. The strongest social influence on intentions to use condoms was sexual partner norms, an indication that people are more likely to want to use condoms if they perceive a favourable disposition in their sexual partners in this regard. Perceived behavioural control/self-efficacy was moderately related to intentions to use a condom, a much weaker association with intentions than was the case with attitude and subjective norm. Overall, regression analyses from 25 of the applications of the two theories showed the theory of reasoned action to account for 37% of the sample-weighted mean variance in intentions to use condoms, while the theory of planned behaviour explained 42% of the sample-weighted mean variance. Thus, the theory of planned behaviour better accounts for intentions to use condoms than the theory of reasoned action alone. This implies that interventions that strive to increase people's confidence in their ability to engage in requisite preventive behaviour could be the most effective (Sheeran & Taylor, 1999).

Like Sheeran and Taylor (1999), Nucifora et al. (1993) found that the addition of perceived behavioural control in a hierarchical multiple regression improved the explanatory model after attitude and subjective norm were controlled for. When actual behaviour was the criterion, both perceived and actual behavioural control emerged as significant predictors of behaviour after intention was controlled for. When interaction effects were tested, the interaction between intention and perceived behavioural control was significant. Similarly, the interaction between intention and actual behavioural control added significantly to the prediction of behaviour. In a similar study with English youth, Sutton, McVey and Glanz (1999) found that the addition of perceived behavioural control did not add to the variance in condom use intentions, especially in their high risk sub-sample. Sutton et al. did not find any difference

between the theory of reasoned action and the theory of planned behaviour in predicting young people's intentions to use condoms. While attitudes and subjective norms were not the strongest predictors of intentions, past behaviour tended to have a stronger association with intentions to use condoms. The limitation of both studies is that they were cross-sectional, and it is therefore not possible to make inferences about actual behaviour.

White et al. (1994) assessed the utility of revisions to the theories of reasoned action and planned behaviour in the context of HIV-preventive behaviours. The behaviours of interest were condom use during a sexual encounter in the next month, and discussing condom use with a new partner during the same period. They widened the normative component of the theories by introducing group norms as a predictor variable. Group norm is the perception that significant others not only approve of a behaviour, but actually perform the behaviour. They also revised control measures by adding self-efficacy and planning to perceived behavioural control.

Like other researchers, White et al. (1994) found a strong association between condom use intentions and condom use behaviour, with subjective norm contributing more variance than attitude. Regression analyses for behavioural intentions and reported behaviour found that attitudinal and normative components accounted for a significant proportion of the variance in intention to engage in safe sex behaviours. The addition of the revised control component improved the model. The addition of self-efficacy to the regression model contributed to the prediction of intentions more than perceived behavioural control, which could indicate that the two concepts are not as synonymous as Ajzen (1991) proposed. In terms of discussion of condom use with a new partner, the revised control component accounted for a larger proportion of variance in reported behaviour than attitudinal and normative components.

The studies reviewed above unequivocally attest to the usefulness of the theories of reasoned action and planned behaviour in understanding condom use behaviour. Research applying these theories to voluntary counselling and testing, as well as monogamy, is reviewed below.

3.2.2 Theories of Reasoned Action and Planned Behaviour and HIV Voluntary Counselling and Testing

In the only theory-based study on voluntary counselling and testing that was found – interestingly an African study - Kakoko, Astrom, Lugoe and Lie (2006) applied the theory of planned behaviour in a cross-sectional study among Tanzanian school teachers to predict the intended use of voluntary counselling and testing. The respondents completed a theory of planned behaviour questionnaire that measured intention, behavioural beliefs, outcome evaluation, attitude, normative beliefs, motivation to comply, subjective norm, control beliefs, power of control and perceived risk.

Kakoko et al. (2006) found that, in general, participants had favourable attitudes towards HIV voluntary counselling and testing, perceived normative pressure positively, felt a high level of control and had strong intentions with respect to the use of voluntary counselling and testing services. A four-step hierarchical regression model showed that the addition of attitude and subjective norm in the second step contributed significantly to the variance in intention. Inclusion of perceived behavioural control in the third step further increased the explained variance, thus comparing favourably with other African studies (for example, Lugoe & Rice, 1999) that used the theory of planned behaviour.

The results of the Kakoko et al. (2006) study provide support for the applicability of the theory of planned behaviour to predicting teachers' intentions to use voluntary counselling and testing services. The predictive

power of the theory of planned behaviour constructs attest to the usefulness of the model in African settings. Subjective norm and attitude carried more weight in the variance than perceived behavioural control, which implies that the use of voluntary counselling and testing depended on how teachers perceived social and psychological constraints, as well as beliefs in terms of how they evaluated advantages and disadvantages of the intended behaviour. The significant contribution of attitude over subjective norm is interpreted as a reflection of the individual nature of voluntary counselling and testing services in the studied population. The low rating received by perceived behavioural control could be a reflection of the use of voluntary counselling and testing services being hampered by social and psychological barriers, in particular fear of adverse consequences and confidentiality of HIV results, factors that operate at social and cultural levels rather than at an individual level.

Kakoko et al.'s (2006) study resembles this thesis in that it used a sample of working adults. Its limitations are that no elicitation study was conducted and it was cross-sectional, so it was not possible to establish a link between intention and actual use of voluntary counselling and testing services.

3.2.3 Theories of Reasoned Action and Planned Behaviour and Monogamy

Only two studies were found on monogamous behaviour and condom use. In an American study motivated by the preponderance of HIV/AIDS research focusing on women, Beadnell et al. (2008) were interested in heterosexual men's sexual decision-making in relation to monogamy and condom use. They applied the theory of reasoned action by examining three safe sex strategies, namely monogamy, steady-partner condom use and intention to use a condom with casual partners. In addition, they examined intrapersonal, interpersonal and cultural variables not specified

by the theory of reasoned action, but that are known to be predictive of safe sex, especially understanding the ways in which they affect behaviour.

Separate models were tested for each of the three safe sex strategies. An analysis of the theory of reasoned action model showed that the model predicted half or more of the variance in monogamy, steady partner condom use and casual partner condom use intentions. The expanded model for monogamy showed that 51% of the variance in monogamy intentions was explained by the model. Two external variables were mediated by the theory of reasoned action variables: domestic abuse by social norm and church attendance by self-efficacy. Three external variables directly influenced either intention or behaviour. Partner norm directly influenced intention, in addition to its effect being mediated by self-efficacy, attitude and social norm (Beadnell et al., 2008).

The expanded model for interpersonal variables showed perceived partner norm to have the strongest effect. Partner norm had positive effects on attitude, norm and self-efficacy. Partner norm is considered to be important, as sexual intercourse is a dyadic activity, not individual behaviour as perceived by most conceptual models. An interesting but odd finding in the intrapersonal model was that although neither alcohol nor drug use influenced monogamy, each had a slight effect on other models: alcohol on attitudes towards steady-partner condom use, and drug use directly on casual partner condom use intentions. This positive relationship between substance use and condom use could be an indicator of the success of sexually transmitted infection campaigns in the population being studied (Beadnell et al., 2008).

For all three outcomes, intention was more strongly related to attitude than to social norm or self-efficacy. Self-efficacy was significantly related to both monogamy intention and behaviour, and to steady partner condom use intention, but oddly, not to casual partner intention, which could be an

indication that condom use self-efficacy is more about interpersonal negotiation than logistics and mastery. Among the recommendations for intervention design suggested by the authors is the importance of understanding the cognitions underlying beliefs and attitudes in any targeted heterosexual male population. Those cognitions should form the focus of the designed interventions (Beadnell et al., 2008).

The Beadnell et al. (2008) study is useful in understanding the dynamics of monogamy among heterosexual men, especially as it does not rely on an adolescent-only sample. Its findings, however, have limited application in an African context, in that it misses some of the African traditional dynamics (Peltzer et al., 2006) that may play a role in promiscuous behaviour. The study does give an indication of factors that could promote monogamous behaviour and which should be the focus of interventions such as the one planned for this thesis.

Serial monogamy was one of the preventive behaviours studied by Skinner (2000) in his study among youth in two South African townships. Interestingly, he removed permanent monogamy from the study after discovering during the elicitation stage of the research that there were entrenched negative attitudes towards permanent monogamy among males in the study population. Monogamy was regarded as undermining the “right” of men to have multiple sex partners. For this reason, serial monogamy, despite its poor correlation with attitudes, became the preventive behaviour to be encouraged. Serial monogamy, like condom use, was predominantly under attitudinal influence, with partner and family being the most important normative influences. The addition of perceived behavioural control contributed little to the model, indicating low control beliefs. Low control was related to negative perceptions towards monogamy such as “fear of being hurt” if abandoned by an only partner.

There is a lot of research scope for monogamy in behavioural science in Africa, as monogamy, like condom use, remains one of the main modes of AIDS prevention (Skinner, 2000).

3.3 CRITIQUE OF HIV/AIDS RESEARCH BASED ON THE THEORIES OF REASONED ACTION AND PLANNED BEHAVIOUR

The research reviewed in this chapter contains certain problems that this thesis will attempt to obviate where possible. These problems are sample bias, health behaviour bias, methodology and inconsistent findings. Each problem is discussed in detail below.

3.3.1 Sample Bias

The majority of the studies reviewed (79%) were conducted in North America, Europe and Australia, and used, as research participants, sections of their populations considered to be “high-risk”. It appears that these high-risk groups in those populations tend to be predominantly adolescents who also happen to be undergraduate university students (for example, Abraham et al., 1999; Boldero et al., 1992; Boyd & Wandersman, 1991), homosexual men (Fisher et al., 1995; Kasprzyk et al., 1998), heterosexual minorities (Bogart et al., 2000; Morrison et al., 1995) and injecting substance users (Bryan et al., 2003; Kasprzyk et al., 1998). It is apparent from the examples provided that most of the research conducted uses easily accessible convenience samples in the researchers’ work environments. Findings from research based on such selective samples become difficult to generalise to a country such as South Africa, which has different HIV/AIDS dynamics. The definition of a “high-risk group”, as applied in most of the reviewed research, cannot be applied in sub-Saharan Africa where, for example, injection substance use is unheard of in some countries, and homosexuality is not openly

disclosed. AIDS in South Africa, as in the rest of sub-Saharan Africa, is a pervasive epidemic and is spread mainly through heterosexual sex (Rehle et al., 2007; Whelehan, 2009). As Rehle and colleagues suggest, the incidence of AIDS in South Africa is high among the 15–49 year age group, many of whom would be the economically active members of the population. Doing HIV/AIDS research in an African context therefore requires more inclusive samples which are not limited to university students or specific high-risk groups.

3.3.2 Health Behaviour Bias

Most (98%) of the reviewed studies selected condom use as the AIDS preventive health behaviour that formed the focus of their research. No mention is made of other preventive behaviours (such as HIV testing and monogamy, which this thesis examined). Interestingly, the only theory-based study to mention voluntary counselling and testing was conducted in Africa (Kakoko et al., 2006). HIV/AIDS in Africa has other dynamics that may not be prevalent in the countries where most of the research was produced, for example, male dominance in sexual relationships (Campbell, 2003; Maman et al., 2001; Ndida, Uzodike, Chimbwete, Pool & MDP, 2007). In addition to condom use, the Department of Health in South Africa advocates abstinence, monogamy and use of voluntary counselling and testing services in its AIDS prevention messages (Department of Health, 2000). This warrants the inclusion of these other health behaviours in AIDS research in South Africa, which this thesis hopes to achieve.

3.3.3 Methodology

All of the studies reviewed, including the few African studies, sought to study statistical models based on the theories of reasoned action and

planned behaviour. They were mainly interested in studying the relationships between the theoretical constructs and intention to perform the required health behaviour (condom use). Most of these studies are cross-sectional, which rules out any chances of actual behaviour being measured. Almost all the studies employed similar research methodologies - for example, they measured the same constructs, performed zero-order correlations and entered those correlations into regression analyses. The result is a confusing web of coefficients and contradictory relationships between predictors and intentions. The longitudinal studies which measured behaviour relied on self-reports and did not control for self-presentation bias. The longitudinal studies reviewed (Kasprzyk et al., 1998; Morrison et al., 1995) measured self-reported behaviour only once post-baseline, and did so after 90 days and 120 days respectively. Both failed to identify mediating variables that could have accounted for the behaviour reported at Time 2. Most of the studies reported the intervention implications of their findings, but failed to actually design an intervention programme, as this thesis did.

3.3.4 Inconsistent Findings

As already pointed out, most of the reviewed studies followed the methodology prescribed by Ajzen and Fishbein (1980). The outcome is that studies report inconsistent, sometimes contradictory, findings, as a result of which it becomes difficult to generalise. For example, after reviewing 28 studies, it is still not clear whether intentions are determined more by attitude, subjective norm or perceived behavioural control, as each study would produce a different profile. Such inconsistencies and contradictions are found even in studies that are similar in sample, sample size and methodology - for example, condom use intentions among university students have been found to be attitudinally based (Fisher et al., 1995) and normatively based (Nucifora et al., 1993).

3.4 SUMMARY

This chapter reviewed HIV/AIDS research that applied the theory of reasoned action and the theory of planned behaviour. Most of the research was conducted outside South Africa, and it is not certain that the findings can be applied in the South African context. In addition, the studies are mainly descriptive surveys that developed statistical models to explain relationships between intentions and preventive behaviour, as predicted or mediated by theoretical variables. The intervention implications of the findings were broadly presented, but none of the studies actually designed an intervention based on the researched theory. The studies that applied the theories in the African context also failed to go beyond predictive statistical models explaining the utility of the theories. Furthermore, almost all the studies used convenience samples comprising either university students or clinic attendees. None of them used a sample of working people, as this thesis did.

The research conducted as part of this thesis was used to design a HIV/AIDS intervention model based on the theories of reasoned action and planned behaviour. Departing from the norm of existing research, this intervention was tested with a sample of working adults in a government department. The research followed the guidelines prescribed by Ajzen and Fishbein (1980) for developing statistical models. The designed intervention was guided by the theories of reasoned action and planned behaviour, and drew largely from communication theory (Maibach & Parrot, 1995) in developing health messages. The research design was also longitudinal, with two follow-up behaviour measurement periods – at one month and six months after the intervention. A full explication of the methodology followed is presented in chapter 5. The premise of this thesis is that enough is known about the explanatory power of the theories of

reasoned action and planned behaviour in the context of HIV/AIDS. It is time for these theories to be applied in an intervention.

The elicitation study performed prior to data collection and intervention implementation is described in the next chapter

CHAPTER 4

ELICITATION STUDY

According to Ajzen and Fishbein (1980), Fishbein and Middlestadt (1989) and Montano and Kasprzyk (2002), the first step in applying the theory of reasoned action/planned behaviour is to conduct open-ended elicitation interviews to identify modal salient beliefs (commonly held beliefs) and modal subjective norms (most frequently reported significant others) in the target population. The aim of an elicitation study is to understand the uniqueness of the target population, so that interventions can be customised to their circumstances, thus making the interventions more relevant.

Elicitation interviews are conducted with a sample of at least fifteen to twenty people from the target population. The elicitation interview participants are asked to provide two kinds of information. Firstly, they are asked to describe the positive and negative outcomes or attributes of performing a specific behaviour. Secondly, they are asked to describe any individuals or groups who might approve or disapprove of their performance of the behaviour. The data from the elicitation interview is then subjected to content analysis to identify the relevant outcomes or attributes of the behaviour and relevant social referents. The information gathered from the elicitation interview forms the basis of the questionnaire content from which the theory of reasoned action / planned behaviour measures are developed.

This chapter reports on the elicitation study that was conducted for this study in compliance with the methodology prescribed by Ajzen and Fishbein (1980). The elicitation study constitutes the first phase of

research, which seeks to apply the theories of reasoned action and planned behaviour.

4.1 SAMPLE AND SAMPLING PROCEDURE

The sample used for the elicitation study consisted of people employed by the government department from which data for the main study was going to be gathered. The elicitation questionnaire was sent randomly by internal e-mail to one hundred employees at the head office in Pretoria and all nine provincial offices. After excluding incomplete questionnaires, thirty-eight questionnaires were analysed.

4.2 ELICITATION QUESTIONNAIRE DESIGN

4.2.1 Aim

The elicitation questionnaire (Appendix A) was designed in accordance with the guidelines prescribed by Ajzen and Fishbein (1980). The aim of the questionnaire was to measure salient beliefs with regard to the behaviours of interest in the researched population. Ajzen and Fishbein state that salient beliefs have to be identified prior to the administration of the final theory-based questionnaire and the implementation of theory-based interventions. The elicitation questionnaire used in this study was designed by the researcher in strict adherence to the guidelines prescribed by Ajzen and Fishbein.

4.2.2 Description and Measurement

The rationale for the elicitation questionnaire is that respondents have to state the advantages and disadvantages of engaging in the behaviour of interest. The questions have to take the four elements of action, target,

context and time into consideration (Ajzen & Fishbein, 1980). The elicitation measure used in this study was a nine-item questionnaire preceded by two biographical items. The questionnaire items were intended to elicit attitudes, subjective norms and perceived behavioural control in relation to the three health behaviours of interest, namely condom use behaviour, HIV test-seeking behaviour and monogamous behaviour.

While Ajzen and Fishbein recommend that attitude questions simply ask respondents to state the advantages and disadvantages of a behaviour, the attitude questions in this study were worded to elicit more personal meanings by asking 'How do you feel about...' and then creating a space for respondents to list advantages and disadvantages of each health behaviour. The rationale was that such wording would compel respondents to not only provide rational responses, but to respond with their own circumstances in mind. Perceived behavioural control was measured with a 7-point rating scale (ranging from *Very Easy* to *Very Difficult*), indicating the ease or difficulty of engaging in the specific predictor behaviour. Subjective norm was measured by respondents listing the significant others whom they thought wished to see them (respondents) engage in the specific behaviour and with whose wishes respondents would comply.

4.2.3 Administration

The elicitation questionnaire was administered individually two months prior to the commencement of the research by sending it to employees by internal e-mail. The completed questionnaires were returned by e-mail or in hard copy in a sealed envelope.

4.2.4 Scoring

To assess salient modal beliefs, the questionnaires were subjected to content analysis by identifying common, frequent themes in relation to each health behaviour. The frequency with which each theme was reported by respondents was tallied, and the total number of tallies per theme was calculated. Perceived behavioural control was scored on a 7-point rating scale ranging from 1 (*Very Difficult*) to 7 (*Very Easy*). Subjective norm was scored by noting the significant other and ranking the significant others' level of approval for the proposed behaviour on a 5-point scale (ranging from 1 [low] to 5 [high]).

4.3 ELICITATION STUDY FINDINGS

The findings of the elicitation study are reported in relation to the three health behaviours of interest, namely condom use behaviour, testing behaviour and monogamous behaviour. The findings are reported in terms of modal salient beliefs, perceived behavioural control and subjective norm. The data illustrated in Tables 4.1 to 4.12 are only for descriptive purposes, and were not subjected to statistical analyses, therefore it is not known whether the observed differences between males and females were significant or not.

4.3.1 Condom Use Behaviour

4.3.1.1 Condom Use Modal Salient Beliefs

In response to the question "*How do you feel about always using a condom during sexual intercourse*" respondents listed both the advantages and disadvantages of using a condom. Findings in relation to advantages of condom usage indicated that the majority of participants

(87%) acknowledged the value of condoms in preventing sexually transmitted infections. This was followed by acknowledgement of the contraceptive value of condoms in preventing pregnancy (76%). As illustrated in Table 4.1, it is notable that the infection prevention and pregnancy prevention themes were reported more by females (96% and 89% respectively) than by males (73% and 53% respectively). It appears that females were more concerned with the practical utility of condoms while males responded with more vague statements such as safer sex (40%) and philosophical issues such as healthy life style and sound values (40%).

Table 4.1: Condom Use Advantages

Dominant Themes	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Prevents HIV and STI transmission to self and partner	11 (73)	22 (96)	33 (87)
Prevents pregnancy	8 (53)	20 (89)	28 (76)
Sex is safer	6 (40)	4 (17)	10 (26)
Condoms signify a healthy lifestyle and sound values such as caring, loving, commitment and responsibility	6 (40)	2 (9)	8 (21)

With regard to condom use disadvantages (Table 4.2), the modal salient beliefs were dominated by concerns about the safety of condoms (42%), the sensation-dulling effects of condoms (39%) and the association of condoms with promiscuity and unfaithfulness (34%).

Table 4.2: Condom Use Disadvantages

Dominant Themes	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Condoms can be defective and their safety cannot be guaranteed	3 (20)	13 (57)	16 (42)
Condoms decrease sensation, are uncomfortable and could have undesirable medical consequences (e.g. vaginal thrush)	6 (40)	9 (39)	15 (39)
Condoms create a perception of unfaithfulness and encourage promiscuity	5 (33)	8 (35)	13 (34)
Condoms create a relationship distance, that is, reduced intimacy, commitment and communication	6 (40)	3 (13)	9 (24)
Condoms prevent a desired pregnancy	3 (20)	2(9)	5 (13)

The similarity between males and females in terms of beliefs about sensation-dulling effects and perceptions of unfaithfulness is important to note. Anxiety over the safety of condoms was much higher among females (57% as opposed to 20% in males), which is understandable when viewed in relation to the perceived advantage of condoms for them as a means of contraception. The pregnancy-prevention disadvantage of condoms was acknowledged more by males (20%), which could indicate that males, more than females, considered condoms to be a more reliable method of contraception than females did, probably because the latter have a wider range of options available than males. Most males (40% as opposed to 13% in females) believed that condoms reduced intimacy in relationships. There may be many reasons for this, among which could be

that males are less keen to use condoms in more intimate or established relationships, while females consider the “burden” - for example, pregnancy - that could result from having sex without a condom.

4.3.1.2 Condom Use Subjective Norms

Table 4.3 shows that the most influential significant others in the person’s decision to use a condom were those in more intimate relationships, namely spouse/sex partner (63%), parents (58%), friends (53%) and siblings (50%). It is interesting that social groupings external to the immediate family of which people are a part (for example, churches) and individuals in a professional role (for example, doctor) ranked the same as siblings, and were ranked higher by males. This could be an indicator of the powerful influence these parties can have on people’s health behaviour. More importantly, they can have a lot of influence in changing the behaviour of males. Females regarded members of the family, for example parents, siblings, extended family and children, as more important to them. Males and females felt more or less similar in relation to friends, colleagues and religious leaders.

Table 4.3: Condom Use Subjective Norms

Significant others	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Spouse / Sex Partner	10 (67)	14 (61)	24 (63)
Parents (Mothers and fathers reported either jointly or separately)	8 (53)	14 (61)	22 (58)
Friends	8 (53)	12 (52)	20 (53)
Siblings (Brothers and sisters reported either jointly or separately)	6 (40)	13 (57)	19 (50)
Parties external to the family (individuals or groups associated with respondents either by virtue of profession [e.g Counsellor, Doctor] or institutional membership [e.g Church, Sport Club])	10 (67)	9 (39)	19 (50)
Colleagues	6 (40)	9 (39)	15 (39)
Extended family (e.g uncles, aunts, grandparents, cousins etc.)	3 (20)	10 (43)	13 (34)
Children	2 (13)	5(22)	7(18)
Religious leader(s)	2(13)	3(13)	5(13)

4.3.1.3 Condom Use Perceived Behavioural Control

In response to the question “How easy or difficult will it be for you to always use a condom during sexual intercourse”, respondents had to rate themselves on a 7-point bipolar scored scale ranging from *Very Easy* to *Very Difficult*. As Table 4.4 illustrates, the majority of respondents (74%) had confidence in their ability to use condoms when they wanted to. Most of them (42%) reported that they would find it easy, while 32% indicated that they would find it very easy. While the majority (86%) of males indicated that they would find it easy to use a condom, 14% of them indicated that they would find it difficult. With females, on the other hand, 65% indicated they would find it easy, while 30% reported that they would

find it difficult to use a condom. This could be an indicator of gender differences in condom use decision-making power in relationships. The finding suggests that males are in control of decision making on condom use in most relationships, and that any interventions to increase condom use should target males. It also needs to be viewed in the context of most available condoms being male ones. It is worth exploring what the outcome of this assessment would be were female condoms to be in more abundance than they are at present.

Table 4.4: Condom Use Perceived Behavioural Control

Item response	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Very Easy	5 (33)	7 (30)	12 (32)
Easy	8 (53)	8 (35)	16 (42)
Difficult	1 (7)	7 (30)	8 (21)
Very Difficult	1 (7)	0 (0)	1 (3)

4.3.2 HIV Testing Behaviour

4.3.2.1 HIV Testing Modal Salient Beliefs

To obtain the modal salient beliefs for HIV testing, respondents had to list advantages and disadvantages of HIV testing in response to the question *“How do you feel about seeking voluntary counselling and testing for HIV”*. As shown in Table 4.5, the majority (79%) of respondents reported the importance of knowing their own status as an advantage. The second most reported advantage was the belief that knowledge of one’s own status would encourage them to make positive lifestyle changes (61%). Also noticeable was the belief in the advantage of seeking early treatment (50%) and obtaining education (29%) once one’s HIV status was known. More males tended to see knowing their HIV status, making positive

lifestyle change and education as advantages, while females perceived accessing early treatment and care as an advantage.

Table 4.5: HIV Testing Advantages

Dominant Themes	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Know my HIV status	13 (87)	17 (74)	30 (79)
Make a positive lifestyle change after testing	10 (67)	13 (57)	23 (61)
Testing will facilitate early treatment and care	6 (40)	13 (57)	19 (50)
Education (testing will help gain more knowledge about HIV/AIDS; Ignorance of HIV status could result in worsening health)	11 (40)	5 (22)	16 (29)

The perceived disadvantages of HIV testing are reported in Table 4.6. The most frequently reported disadvantages of seeking HIV testing (53%) pertained to fear of negative emotional consequences (depression, suicidal behaviour and other psychological problems) as a result of testing positive. This belief was most frequent among female respondents (57% as opposed to 47% of males). The second most frequent negative belief (34%) was that testing positive would result in negative life circumstances (social stigma, discrimination and loss of employment). This theme was reported more by males (40%) than females (30%). It was interesting to note that males were more concerned about external factors, that is, fear of what others might do to them. Females were more concerned about internal factors, that is, the psychological suffering they would experience as a result of testing positive. Twenty-four percent of respondents indicated that testing had no disadvantages at all. Some female

respondents (17%) expressed the belief that testing positive might induce more “revenge infections” that is, the intentional and malicious spreading of the virus. Another belief expressed by some female respondents (13%) was that testing positive implied that one was “guilty” of being unfaithful to one’s partner.

Table 4.6: HIV Testing Disadvantages

Dominant Themes	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Negative emotional consequences (Depression, anxiety and related psychological problems associated with testing positive)	7 (47)	13 (57)	20 (53)
Negative life circumstances (Social stigma and discrimination associated with testing positive)	6 (40)	7 (30)	13 (34)
No disadvantages	3 (20)	6 (26)	9 (24)
It contributes to “revenge” infections	0 (0)	4 (17)	4 (11)
Testing positive implies being “guilty” of unfaithfulness	0 (0)	3 (13)	1 (8)

4.3.2.2 HIV Testing Subjective Norms

In response to the question requiring respondents to list significant people who would approve of them seeking voluntary counselling and testing, most respondents, as shown in Table 4.7, chose as the most influential significant others people in more intimate relationships (Spouse/sex partner and parents). It is important to note that for HIV testing, siblings were rated less frequently (42%) than people outside the family circle (45%). Colleagues were rated more highly in relation to HIV testing (47%) than in relation to condom use (39%) (see Table 4.3). Less frequently

reported were people external to the immediate family (such as social groupings of which people are a part and individuals in a professional role) (45%), and members of the extended family (32%). It was interesting to note that most female respondents' significant others were in more intimate relationships, such as spouse/sex partner (70%), parents (65%) and siblings (48%). Males, on the other hand, rated friends (73%) and parties external to the family (60%). Males and females were similar in their rating of colleagues (47% and 48% respectively) as significant others in relation to HIV testing behaviour.

Table 4.7: HIV Testing Subjective Norms

Significant others	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Spouse / Sex Partner	10 (67)	16 (70)	26 (68)
Parents (Mothers and fathers reported either jointly or separately)	8 (53)	15 (65)	23 (60)
Friends	11 (73)	11 (48)	22 (58)
Colleagues	7 (47)	11 (48)	18 (47)
Parties external to the family (individuals or groups associated with respondents either by virtue of profession [e.g Counsellor, Doctor] or institutional membership [e.g Church, Sport Club])	9 (60)	8 (35)	17 (45)
Siblings (Brothers and sisters cited jointly or separately)	5 (33)	11 (48)	16 (42)
Extended family (e.g uncles, aunts, grandparents, cousins)	3 (20)	9 (39)	12 (32)

4.3.2.3 HIV Testing Perceived Behavioural Control

In response to the question “*How easy or difficult will it be for you to seek voluntary counselling and testing for HIV*”, respondents had to rate themselves on a 7-point bipolar scored scale ranging from *Very Easy* to *Very Difficult*. As Table 4.8 shows, the majority (77%) of respondents indicated that they would find it easy or very easy to seek voluntary counselling and testing for HIV. Of these, the majority (82%) were females. Twenty-three percent of respondents, of which 34% were males and 17% were females, indicated that they would find it difficult to seek voluntary counselling and testing. This could suggest that males had less confidence than females in seeking voluntary counselling and testing. It could also indicate a need for more male-friendly testing services.

Table 4.8: HIV Testing Perceived Behavioural Control

Item response	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Very Easy	7 (47)	10 (43)	17 (45)
Easy	3 (20)	9 (39)	12 (32)
Difficult	4 (27)	3 (13)	7 (18)
Very Difficult	1 (7)	1 (4)	1 (5)

4.3.3 Monogamous Behaviour

4.3.3.1 Monogamy Modal Salient Beliefs

To obtain the modal salient beliefs for monogamous behaviour, respondents had to list advantages and disadvantages of monogamy in response to the question “*How do you feel about having only one sex partner*”. As Table 4.9 shows, the majority (84%) of participants believed that monogamy exposed them to low risk of sexually transmitted infections, made sex safer and had general health benefits. This belief

was reported by slightly more males (87%) than females (83%). The other belief was that monogamy was good for relationship building and encouraged positive values such as faithfulness, caring and openness in relationships (68%). Interestingly, the latter belief was more prominent among female respondents (78%). Males appeared to have focused more on the concrete outcomes of monogamy such as reduced risk of HIV infection than on sentimental issues such as faithfulness and openness in relationships. It was also interesting that both males and females believed in the joy of sex without a condom as one of the benefits of monogamy.

Table 4.9: Monogamy Advantages

Dominant Themes	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Low risk of infection, safer sex and health considerations	13 (87)	19 (83)	32 (84)
Relationship building and positive values (faithfulness, caring, openness)	8 (53)	18 (78)	26 (68)
Enjoyment of sex without a condom	2 (13)	4 (17)	6 (16)

In terms of the disadvantages of monogamy, Table 4.10 shows that the majority (63%) of respondents believed that monogamy carried no disadvantages. The only disadvantages reported were the belief that monogamy posed a risk if one's partner was unfaithful (21%), as well as the belief that sex was boring in a monogamous relationship (10%). Interestingly, both these disadvantages were reported more frequently by males.

Table 4.10: Monogamy Disadvantages

Dominant Themes	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
No disadvantages	8 (53)	16 (70)	24 (63)
Partner unfaithfulness poses a risk	4 (27)	4 (17)	8 (21)
Boring sex life	2(20)	1 (4)	4 (10)

4.3.3.2 Monogamy Subjective Norms

Monogamy subjective norm was measured by asking respondents to list important people who would approve of them having only one sex partner. Table 4.11 shows that the most frequently reported significant others for monogamous behaviour were people in more intimate relationships, such as spouse/sex partner (63%), parents (55%), siblings (50%) and friends (42%). Less frequently reported were people outside the immediate family and friends, namely colleagues (39%), extended family (26%) and religious leaders (21%). An interesting observation is that in the case of monogamy, males reported spouse/sex partner (67%) as significant other more frequently than females (61%). Female respondents, on the other hand, reported friends (74%), siblings (57%) and extended family (35%) more frequently than males (40% for siblings, 40% for friends and 13% for extended family).

4.3.3.3 Monogamy Perceived Behavioural Control

In response to the question “How easy or difficult will it be for you to have only one sex partner”, respondents had to rate themselves on a 7-point bipolar scored scale ranging from *Very Easy* to *Very Difficult*. As Table 4.12 shows, the majority (96%) of respondents indicated that they would find it very easy, to easy, to have only one sex partner. Female respondents tended to find it very easy (52%) to have one sex partner,

while only 13% of males indicated that they find it very easy to have only one sex partner. Only 5% of the participants reported that they find it difficult to stay monogamous.

Table 4.11: Monogamy Subjective Norms

Significant others	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Spouse / Sex Partner	10 (67)	14 (61)	24 (63)
Parents (Mothers and fathers reported either jointly or separately)	9 (60)	11 (43)	21 (55)
Siblings (Brothers and sisters cited jointly or separately)	6 (40)	13 (57)	19 (50)
Friends	6 (40)	17 (74)	16 (42)
Colleagues	7 (47)	8 (35)	15 (39)
Extended family (e.g uncles, aunts, grandparents, cousins etc.)	2 (13)	8 (35)	10 (26)
Religious leader(s) (Pastor/Priest/Minister)	2 (13)	6 (26)	8 (21)

Table 4.12: Monogamy Perceived Behavioural Control

Item response	Male f (%) n = 15	Female f (%) n = 23	Total f (%) n = 38
Very Easy	2 (13)	12 (52)	14 (37)
Easy	12 (80)	10 (43)	22 (59)
Difficult	1 (7)	1 (4)	2 (5)
Very Difficult	0(0)	0 (0)	0 (0)

4.4 INTERVENTION IMPLICATIONS OF THE ELICITATION STUDY FINDINGS

Following guidelines prescribed by Ajzen and Fishbein (1980), the findings of the elicitation study served as the conceptual foundation for the design of the theory-based intervention, as well as the theory-based questionnaire. This section describes how the findings of the elicitation study were used for the design of the theory-based intervention. The intervention implications of the elicitation findings for each of the three health behaviours are presented below.

4.4.1 Condom Use Intervention Implications

Beliefs expressed in the elicitation study that were appropriate to HIV/AIDS prevention included beliefs that condoms prevent sexually transmitted infections and pregnancy, promote safer sex and promote a healthier lifestyle. Such health-promoting beliefs would be reinforced in the health promotion workshops. Some of the beliefs expressed in the elicitation study were found to be barriers to the promotion of condom use health behaviour. These were beliefs such as:

- (a) Condoms are not safe;
- (b) Condoms take away pleasure;
- (c) Condoms are a sign of infidelity and encourage promiscuity; and
- (d) Condoms reduce intimacy.

Cognitive behaviour therapy techniques (Beck & Weishaar, 1989) would be used to get participants to question these beliefs in the workshops, as their questioning would help participants separate fact from urban legend, as well as question the social discourse forming these beliefs.

The findings regarding subjective norms in the elicitation study were not useful for the practical application of subjective norms to a training intervention. Strict adherence to the definition of subjective norm in the theory would require participants to “guess” what significant others expected of them and then adapt their behaviour accordingly. As this would not have been possible, the researcher thought it best to make, as the focus of intervention, the role of participants as significant others to people to whom they were related. This implied that participants would serve as a reference group with which others would feel pressured to comply. As the workshop would be conducted at the workplace and colleagues featured among significant others identified in the responses, the subjective norm component of the intervention would focus on the role of participants, as people who would be putting pressure on their colleagues to use condoms. The rationale was that the workshop participants, in their role as significant others to their peers, would set the normative standard on condom usage, with which their colleagues would be motivated to comply.

For condom use perceived behavioural control, the intervention would focus on facilitators and barriers to condom use, which participants would list during the workshop. Attempts would be made to maximise the facilitators by reinforcing existing ones, as well as introducing new ones. Strategies for overcoming barriers would be generated. Where indicated, role plays would be enacted to equip participants with skills for managing or overcoming barriers to condom use.

4.4.2 HIV Testing Intervention Implications

As was the case with condom use, some of the beliefs associated with HIV testing were found to be appropriate to AIDS prevention, such as the belief that it is important to know one’s own HIV status and that HIV

testing facilitated help seeking behaviour and care. Such health-promoting beliefs would be reinforced in the workshops. Some of the salient beliefs identified were negative and rooted in fears associated with knowledge of one's own HIV status, such as the fears of stigma and the emergence of psychological problems. The focus of the intervention would be to employ cognitive-behavioural strategies to challenge such negative beliefs, so that participants would learn to manage their fears and shift from avoidance of HIV testing to being motivated to test. The inappropriate beliefs associated with HIV testing that would need to be challenged during the workshop were:

- (a) Beliefs fuelled by avoidance (for example, beliefs that it is better not to know because knowing will result in unbearable problems of a psychological and social nature); and
- (b) Beliefs about the negative consequences of testing.

The discourses around these beliefs would be discussed and participants would be encouraged to consider them critically.

As with condom use subjective norm, subjective norm for HIV testing, as originally conceptualised in the theory, would have been difficult to translate into a practical learning exercise in a workshop. The most pragmatic way of creating a learning exercise was to put participants in the position of "significant other" to their peers, so that they (participants) would function as a reference group with which others would be motivated to comply. As colleagues were identified as significant others in the elicitation study and the workshop was to be conducted in the workplace, the intervention would be for participants to think of themselves as people with whose wishes peers would want to comply. This would require that they set the normative standard for appropriate testing behaviour which, in turn, would make colleagues want to comply with their (participants) wishes.

Participants reported high levels of perceived control over testing, although there was also some doubt about the ability to seek testing, especially among males. The necessary intervention would be to build self-confidence about HIV testing while addressing some of the fears participants had. Persuasive health messaging techniques (described in detail in Chapter 5) and verbal persuasion techniques (Bandura, 1977) would be employed to increase participants' sense of mastery over HIV testing.

4.4.3 Monogamy Intervention Implications

Intervention would reinforce the appropriate beliefs participants expressed about monogamy, for example, the belief that monogamy helps build relationships based on positive values. The main negative salient belief about monogamy, namely the belief that variety is desirable in a sexual relationship, would be questioned using cognitive behavioural techniques, as described in Chapter 5.

Persuasive messaging would be employed to increase participants' confidence in their ability to be monogamous. Concerning subjective norm, the role of participants as significant others to their peers would be emphasised, particularly their role as models of monogamous and other AIDS preventive behaviours.

4.5 SUMMARY

This chapter reported on the elicitation study carried out in compliance with the research methodology prescribed by Ajzen and Fishbein (1980). The modal salient beliefs, subjective norms and perceived behavioural control for the study sample in respect of the three health behaviours of interest were identified. The intervention implications - that is, the use of

the findings for the purpose of designing a theory-based intervention – were proposed for each of the three constructs.

Chapter 5 deals with the research methodology used in this study, including a detailed description of the workshop outline, as guided by the elicitation interview findings.

CHAPTER 5

RESEARCH METHODOLOGY

The literature review of international and South African HIV/AIDS research on the application of the theories of reasoned action and planned behaviour highlighted the following problems: (a) Most of the research uses convenience samples of adolescents or university students, and the findings may not be generaliseable to populations such as working adults; (b) the studies focused more on the explanatory utility of the theoretical variables in predicting behaviour; and (c) none of the studies actually designed and tested an intervention model derived from these theories. To remedy these limitations, the current study aims to contribute to the body of knowledge in this field by firstly using a sample of working adults in an African context and secondly, developing and testing the efficacy of an intervention model based on the two theories. The nature of the investigation required, firstly, adherence to the procedures prescribed by Ajzen and Fishbein (1980) in testing the applicability of the model in a sample of adult South African workers and secondly, the design of an intervention informed by the philosophical bases of the theories.

This chapter discusses the research design and procedures in terms of the research objectives mentioned in Chapter 1.

5.1 RESEARCH OBJECTIVES AND HYPOTHESES

The overall objective of this study was to investigate the application of the theory of reasoned action (Fishbein & Ajzen, 1980) and the theory of planned behaviour (Ajzen, 1991) in the development of a HIV/AIDS health

promotion programme in the workplace. This objective was divided into the following five secondary objectives:

- (a) To determine if the combined theories of reasoned action and planned behaviour (TRA/TPB) variables (attitudes, subjective norms and perceived behavioural control) will predict intentions to change HIV/AIDS health behaviour.
- (b) To develop a HIV/AIDS health promotion workshop in accordance with the theory of reasoned action and theory of planned behaviour, and to determine whether or not the TRA/TPB workshop will predict HIV/AIDS health behaviour change.
- (c) To compare the TRA/TPB and Information-only groups on health behaviour at one month and six months post-intervention.
- (d) To determine if the TRA/TPB workshop would be more instrumental in behaviour change than an Information-only intervention.
- (e) To use the findings of the study to make suggestions regarding the design of workplace HIV/AIDS interventions.

The research questions flowing from this objective were posed as follows:

- 1) *Will the combined TRA/TPB variables significantly predict intentions to engage in HIV/AIDS preventive behaviours?*
- 2) *Will the TRA/TPB workshop significantly predict HIV/AIDS health behaviour change across the three measurement periods (baseline, one month follow-up and six months follow-up)?*
- 3) *Will there be significant differences in HIV/AIDS health behaviour between participants who took part in a TRA/TPB-based workshop*

and those who took part in a traditional, lecture-type, information-giving workshop?

The following hypotheses were tested:

- Hypothesis 1: The combined theories of reasoned action and planned behaviour variables will predict a significant proportion of the variance in intentions to use condoms.
- Hypothesis 2: The combined theories of reasoned action and planned behaviour variables will predict a significant proportion of the variance in intentions to seek a HIV test.
- Hypothesis 3: The combined theories of reasoned action and planned behaviour variables will predict a significant proportion of the variance in intentions to have only one sex partner.
- Hypothesis 4: There will be significant differences in condom use behaviour across the three measurement periods (pre-intervention, one month post-intervention and six months post-intervention) for the TRA/TPB group.
- Hypothesis 5: There will be significant differences in HIV testing behaviour across the three measurement periods (pre-intervention, one month post-intervention and six months post-intervention) for the TRA/TPB group.
- Hypothesis 6: There will be significant differences in monogamous behaviour across the three measurement periods (pre-intervention, one month post-intervention and six months post-intervention) for the TRA/TPB group.

- Hypothesis 7: There will be significant differences in condom use behaviour between the TRA/TPB workshop group and the information-only workshop group one month after participating in the health promotion workshops.
- Hypothesis 8: There will be significant differences in condom use behaviour between the TRA/TPB workshop group and the information-only workshop group six months after participating in the health promotion workshops.
- Hypothesis 9: There will be significant differences in HIV testing behaviour between the TRA/TPB workshop group and the information-only workshop group one month after participating in the health promotion workshops.
- Hypothesis 10: There will be significant differences in HIV testing behaviour between the TRA/TPB workshop group and the information-only workshop group six months after participating in the health promotion workshops.
- Hypothesis 11: There will be significant differences in one sex partner behaviour between the TRA/TPB workshop group and the information-only workshop group one month after participating in the health promotion workshops.
- Hypothesis 12: There will be significant differences in one sex partner behaviour between the TRA/TPB workshop group and the information-only workshop group six months after participating in the health promotion workshops.

5.2 RESEARCH DESIGN

The research design chosen for this study was the longitudinal, within-groups, before and after *non-equivalent control group design* (Christensen, 2001; Goodwin, 2002; Neale & Liebert, 1986). The non-equivalent control group design is a *quasi-experimental* technique in which non-equivalent treatment (experimental group in the case of experiments) and comparison (control in the case of experiments) groups are compared. The method is labelled quasi-experimental, as it does not meet all the requirements of a true experimental design, namely random assignment of study participants and controlling for the influence of extraneous variables. In the current study, it was not possible to assign participants randomly to the two groups, as they were assessed at different locations, nor was it possible to control for the influence of extraneous factors. Participants were studied in their work environment, which precluded the creation of a laboratory-like setting, as required for true experimental designs.

The quasi-experimental method that is appropriate for this thesis is the pre-test-post-test non-equivalent control group design. This is a design that includes a treatment and comparison group, but the groups may not be randomly assigned. The pre-test-post-test procedure requires that both groups be tested on a dependent variable before and after exposure to a treatment condition, and then compared in order to determine if significant differences exist (Christensen, 2001; Goodwin, 2002; Neale & Liebert, 1986).

Data collection for this study was conducted in four phases:

- Phase one was the elicitation study, which the theory prescribes should precede the main data collection (this phase is presented as Chapter 4 of this thesis).

- Phase two (Time 1) was the baseline assessment carried out prior to participation in the interventions that constituted treatment conditions.

Questionnaires were handed to participants of both the experimental and control groups prior to their participation in the intervention workshops.

- Phase three (Time 2) was the assessment of TRA/TPB variables and health behaviour conducted one month after participation in the two treatment conditions. Questionnaires were posted to participants by internal e-mail with the inscriptions “EM” (experimental male), “EF” (experimental female), “CM” (control male) and “CF” (control female) printed in tiny font at the bottom corner of the biographical questionnaire to distinguish between the different categories. The questionnaires were returned by post via internal courier in sealed envelopes.
- Phase four (Time 3) was the assessment of health behaviour conducted six months after participation in the two treatment conditions. The questionnaires were posted to participants’ workplace addresses, each category using a different colour of paper. The questionnaires were then returned by post via internal courier in sealed envelopes.

5.3 POPULATION AND SAMPLE

This section describes the population, sample and sampling techniques that apply to this study.

As noted in the critique of HIV/AIDS research in Chapter 2, most of the available research in the field of HIV/AIDS studied student and adolescent populations (for example, Abraham et al., 1999; Boldero et al., 1992; Boyd

& Wandersman, 1991), a trend which excludes working adults. As reviewed in Chapter 1 (for example, Huiskamp et al., 2005), there are benefits to extending behavioural research to the working population, as the workplace presents a ready-made audience for health promotion. In an attempt to remedy this shortcoming, the population of interest for this study was identified as being South African working adults employed in a government department*.

5.3.1 Sampling Technique

A convenient sample drawn from employees in a government department was used.*

There were two groups of participants in this study. Both groups were targeted for participation in the study on the basis of their availability. One group, the TRA/TPB group, constituted the treatment condition and took part in a theory-based intervention workshop. The other group, the information-only group, which was used for comparison purposes, participated in a lecture-type, question-and-answer information session. The only inclusion criteria were that participants ought to have been part of the two treatment conditions (workshops), had to be sexually active and ought to have completed the questionnaires in full. The questionnaires that were not completed in full were excluded from the analyses.

5.3.2 Sample Characteristics

For research studying the theory of planned behaviour, Francis et al. (2004) recommend that at least 25 people should be used for the

*Permission for the research was granted on condition that the department was not to be named in the thesis for security reasons.

elicitation study phase of the research, and at least 80 for the main research. This study complied with this requirement, in that 38 employees (23 females and 15 males, mean age 32.68) participated in the elicitation interview, while 170 participated in the final study. The sample comprised employees at a South African government department located in the security cluster of ministries. The sample characteristics are illustrated in Tables 5.1 through 5.4.

As shown in Table 5.1, at baseline assessment (Time 1), the final sample comprised 170 employees. Ninety-two of these comprised the TRA/TPB group (mean age 34.72), while 78 comprised the Information-only group (mean age 34.64). At one month follow-up assessment (Time 2), there were 103 participants, 56 of whom were in the TRA/TPB group and 47 were in the information-only group. At six months follow-up, there were 67 participants, 37 of whom were in the TRA/TPB group and 30 were in the information-only group. It is unclear what accounted for the high attrition rate. It could be a function of changed work and personal circumstances at the time of the follow-up assessment, and this could suggest a shortcoming of longitudinal research stretched over a six month period in a security-related work environment, where work circumstances tend to be fluid and unpredictable.

Table 5.1: Sample Size by Gender

Research Phase	TRA/TPB Group		N	Information-only Group		N	Total
	Males	Females		Males	Females		
Time 1 (Baseline)	61	31	92	35	43	78	170
Time 2 (One Month Follow-up)	32	24	56	19	28	47	103
Time 3 (Six Months Follow-up)	22	15	37	11	19	30	67

Table 5.2 shows the highest level of education reported by the sample. The most frequent qualification for both groups combined was Matric (38.2%), followed by degree (20.0%), three-year diploma (19.4), lower than Matric (12.9%) and post-graduate qualification (7.6%). Three people did not indicate their level of education.

Table 5.2: Highest Level of Education

Education Level	TRA/TPB Group f (%)	Information- only f (%)	Groups Combined f (%)
Lower than Matric	12 (13)	10 (12.8)	22 (12.9)
Matric	33 (35.8)	32 (41)	65 (38.2)
3-Year Diploma	19 (20.9)	14 (19.9)	33 (19.4)
Degree	23 (25)	11 (14)	34 (20)
Post-graduate	5 (5.4)	8 (10)	13 (7.6)
Missing Data	0 (0)	3 (3.8)	3 (1.7)

N = 170

Table 5.3 indicates sexual relationship status. The most frequently reported category for both groups combined was “married” (40.5%), followed by “unmarried with regular partner” (26.4%) and “unmarried without a partner” (12.9%). Ten people (5.8%) reported having more than one sexual partner. Seven people (4.1%) were in new relationships – that is, relationships that were less than three months old. In total, 120 people (70.58%) in the entire sample could be said to be in a stable and established sexual relationship (categories “married”, “married with regular partner” and “divorced with regular partner”). Thirty-three (19.4%) were not in an established sexual relationship (categories “unmarried without a partner” and “divorced without a partner”).

Table 5.3: Sexual Relationship Status

Relationship Status	TRA/TPB Group f (%)	Information- only f (%)	Groups Combined f (%)
Married	43 (46.7)	26 (33.3)	69 (40.5)
Married with additional partner	6 (6.5)	2 (2.6)	8 (4.7)
Unmarried without a partner	11 (11.9)	11 (14)	22 (12.9)
Unmarried with new partner (< 3 months)	1 (1)	4 (5)	5 (2.9)
Unmarried with regular partner	21 (22.8)	24 (30.7)	45 (26.4)
Unmarried with more than one partner	2 (2.1)	0 (0)	2 (1)
Divorced without a partner	4 (4.3)	7 (8.9)	11 (6.4)
Divorced with new partner (< 3 months)	1 (1)	1 (1.2)	2 (1)
Divorced with regular partner	3 (3.2)	3 (3.8)	6 (3.5)
Divorced with more than one partner	0 (0)	0 (0)	0 (0)

N = 170

An optional item asked participants to indicate whether or not they knew their HIV status. The aim of this question was to track HIV testing behaviour over time, however, this could not be done as the high attrition rate made it difficult. The responses are shown in Table 5.4. Ninety-one respondents (53.5%) indicated that they knew their HIV status, while 45 (26.4%) did not. Thirty-four (20.0%) did not respond to this item.

Table 5.4: Known HIV Status

HIV Status Known	TRA/TPB Group f (%)	Information- only f (%)	Groups Combined f (%)
Yes	52 (56.5)	39 (50)	91 (53.5)
No	27 (29.3)	18 (23)	45 (26.4)
No response	13 (14)	21 (26.9)	34 (20)

N = 170

5.4 PROCEDURE

The study adhered to the procedures prescribed by Ajzen and Fishbein (1980). The procedure involved the design and implementation of the elicitation study as reported in Chapter 4 of this thesis, design and implementation of the theory-based intervention, and analyses of research data. The data collection for the main research for both the TRA/TPB group and the Information-only group was done by questionnaire in three phases: Time 1 was the baseline (pre-workshop) assessment, Time 2 was the follow-up assessment one month post-workshop, and Time 3 the follow-up assessment six months post-workshop.

5.4.1 TRA/TPB Group

Participants in the TRA/TPB group were recruited while they were on a four-week line-functional, security-related training course at the department's training academy. The group was representative of the employees of the department, as it comprised people from head office and various provincial offices. The procedure involved the following five steps:

- (a) Participants signed informed consent letters (see Appendix B) prior to their participation in the TRA/TPB workshop. Their names and office addresses were obtained for the purpose of forwarding follow-up questionnaires;
- (b) Participants filled out the Biographical Questionnaire, TRA/TPB Questionnaire and the AIDS Health Behaviour Questionnaire prior to their participation in the TRA/TPB workshop (the questionnaires are discussed in detail in the Measurements section and Appendices D, E and F);
- (c) Participants took part in a workshop facilitated by the researcher (the workshop process is described in detail in section 5.5 and Appendix C);
- (d) One month after the intervention workshop (Time 2), participants filled out the Biographical Questionnaire, TRA/TPB Questionnaire and the AIDS Health Behaviour Questionnaire.
- (e) Six months after the intervention workshop (Time 3), participants filled out the Biographical Questionnaire and the AIDS Health Behaviour Questionnaire.

5.4.2 Information-only Group

The information-only group members were recruited at their different workplaces at various provinces before information sessions on HIV/AIDS by an Employee Assistance Programme (EAP) consultant. The procedure involved the following five steps:

- (a) Participants signed informed consent letters (see Appendix B) prior to their participation in the Information-only workshop. Their names and office addresses were obtained for the purpose of forwarding follow-up questionnaires;

- (b) Participants then filled out the Biographical Questionnaire, TRA/TPB Questionnaire and the AIDS Health Behaviour Questionnaire prior to their participation in the Information-only workshop (the questionnaires are discussed in detail in the Measurements section);
- (c) Participants took part in an Information-only workshop facilitated by an Employee Assistance Programme consultant (the workshop content is described in section 5.6);
- (d) One month after the intervention workshop (Time 2), participants filled out the Biographical Questionnaire, TRA/TPB Questionnaire and the AIDS Health Behaviour Questionnaire.
- (e) Six months after the intervention workshop (Time 3), participants filled out the Biographical Questionnaire and the AIDS Health Behaviour Questionnaire.

A detailed description of the theory-based workshop intervention and the content of the information sessions for the Information-only group as well as the measurements used in the study are presented next.

5.5 THEORY-BASED INTERVENTION WORKSHOP

Participants in the TRA/TPB group took part in a workshop session derived from the theories of reasoned action and planned behaviour. The theory-based intervention designed for the study was a self-contained 5- to 6-hour session modelled on the four-session intervention model proposed by McCamish, Timmins, Terry and Gallois (1993). The difference was that McCamish and colleagues' workshops lasted two-and-a-half hours at weekly intervals, while in this study, the encounters had to be once-off, as participants' availability after the session was not possible.

In addition, the content and process of the workshops in this study were customised in accordance with the health behaviours of interest.

Six once-off group sessions were held. The first two sessions were attended by 10 people. However, to manage the pressure of time, the last four groups were enlarged to 20 participants per session. The sessions were to be facilitated by an Employee Assistance Programme (EAP) consultant trained by the researcher. However, the consultant had to withdraw after the first session due to other work commitments. The last five sessions were facilitated by the researcher. It is unlikely that change of facilitators could have had a major impact on participant outcomes. The EAP consultant was thoroughly briefed by the researcher on the conceptual model informing the study. Therefore, the two facilitators worked according to the same framework. In addition, the consultant had adequate training in group facilitation skills, and had detailed briefing on facilitation as it pertained to the workshop. The modal salient beliefs, subjective norms and perceived behavioural control of the population in relation to the three predictors that were identified in the elicitation study (attitudes, subjective norms and perceived behavioural control) formed the themes for discussion in the workshop.

The workshop session (outline of the workshop attached as Appendix C) was divided into five sub-sessions: introduction or breaking the ice; in-depth discussion on attitudes, subjective norms and perceived behavioural control for all three predictors; intention formation; learning behavioural skills; and consolidation. The sub-sessions are discussed in detail below.

5.5.1 Sub-session One: Introduction/Breaking the Ice

Sub-session one was the facilitator's initial contact with the groups. The aim was to put participants at ease and explain the nature of the

workshop in the context of the research project. A brief introduction on the purpose of the research and the format of the workshop was presented verbally. Once the purpose of the workshop had been discussed, questionnaires were distributed to participants to complete for 30 minutes. At the end of the questionnaire session, the workshop commenced with the facilitator using questions as prompts. These prompts were intended to make the participants feel at ease talking about HIV/AIDS and, most importantly, identifying safer sex practices. The session ended with the facilitator highlighting the issues that were raised during the discussion. The three health behaviours of interest, namely regular condom use, seeking HIV testing and monogamy were introduced as the main focus of the workshop.

5.5.2 Sub-session Two: In-depth Discussion on Attitudes, Subjective Norms and Perceived Behavioural Control

The second part of the workshop was aimed at enabling the participants to explore, understand, question and reformulate their attitudes, subjective norms and perceived behavioural control in relation to condom use, HIV testing and monogamy. Therapeutic techniques published in the psychology literature were used to facilitate the discussion.

5.5.2.1 Theoretical Background Underlying Interventions

As the research was concerned with sexual behaviour change, techniques derived from the psychotherapy and communication practice literature were used during the facilitation of the theory-based workshops. Ideas were drawn from cognitive behaviour therapy (Beck & Weishaar, 1989) and communication theory (Witte, 1995). A brief theoretical background to the techniques used will be presented at this point.

(a) *Cognitive Behaviour Therapy Techniques in the context of Health Promotion*

Cognitive behaviour therapy is a rubric for therapies developed from the behaviour therapy and cognitive therapy traditions in therapeutic psychology (Patterson, 1986). The basic assumption of cognitive behaviour therapy approaches is that a reciprocal relationship exists between thoughts, feelings and behaviours. Thus, any behaviour, adaptive or dysfunctional, is a consequence of cognitive processing in that cognitive processing provides a stimulus for behaviour. Hence, behaviour can be changed by altering the cognitions that precede it. Although originally formulated to treat mental health difficulties in psychiatric settings, Beck (1991) conceded that cognitive therapy techniques can be used to modify behaviour in well-adapted people as cognitions do not always cause distress – instead, the cognitive processing difficulties of psychiatrically ill people are an exaggerated and persistent form of those seen in normal emotional functioning. Thus, cognitive behaviour therapy techniques can be applied outside the illness context.

Hobbis and Sutton (2005) consider the use of cognitive behaviour therapy techniques relevant in health promotion, as they can be used to alter people's beliefs in a more adaptive and health-promoting fashion. Thus, they can be useful in theory of planned behaviour interventions. According to Hobbis and Sutton, the application of cognitive behavioural techniques in health promotion does not require the deep exploration of core beliefs, as would be done in the context of psychotherapy. Rather, the focus is more on what Aaron T. Beck referred to as *automatic thoughts* - that is, thoughts that are spontaneous and triggered by circumstances. Beck and Weishaar (1989) consider the questioning of automatic thoughts to be the most basic intervention before core beliefs or schemas are tackled. In the case of this study, some of the automatic thoughts about AIDS-preventive

behaviour - for example *“It is natural for a man to have many partners because men cannot control their sex drive”*, could be considered maladaptive in that they prevent the occurrence of important health behaviour, thereby exposing people to risks such as HIV infection. The rationale is that teaching people to question such thoughts would result in more adaptive thoughts being adopted. The outcome of more adaptive thoughts would be adaptive behaviour.

(b) Cognitive Restructuring

Cognitive restructuring is a rubric encompassing treatment methods based on the assumption that emotional disorders result from maladaptive thought patterns. Therefore, changing maladaptive thought patterns would result in behaviour change (Wilson, 1989). Cognitive restructuring techniques include the Socratic dialogue, also known as Socratic questioning (Beck, 1991; Beck & Weishaar, 1989), disputing of irrational beliefs (Ellis, 1989; 2003) and self-instructional training (Meichenbaum, in Beck & Weishaar, 1989). Although these methods were originally conceptualised for the treatment of psychopathology, they can be used when well-adapted to different contexts such as learning and development (Beck, 1991). For the purpose of the TRA/TPB workshop in this study, the disputing of irrational beliefs would have been inappropriate, as its confrontational nature (for example, use of words like ‘crazy’ and ‘bullshit’ that Albert Ellis used to label irrational beliefs) might have alienated participants. Instead, positive affective appeals (Monahan, 1995) were found to be most appropriate to encouraging participation. Self-instructional training would not have worked in a group setting, as it is more applicable to individuals in an individual therapy setting. Socratic dialogue was found to be most appropriate for the workshop, as it is non-confrontational and can be used to facilitate discussion in a group.

Socratic dialogue is a method of questioning intended to promote new learning so that the client (workshop participants in the case of this study) can arrive at different and more logical conclusions. Socratic dialogue helps with (a) clarifying or defining problems, (b) the identification of thoughts, images and assumptions, (c) examination of the meaning of events and (d) assessing the consequences of maintaining maladaptive thoughts and behaviour (Beck & Weishaar, 1989). During the TRA/TPB workshop, for example, the statement or belief *“Going for HIV testing shows that you have a guilty conscience, otherwise if you know you have not been sleeping around where do you think you would have got AIDS from”* (sic.), generated Socratic questions such as the following:

- *What is the importance of HIV testing?*
- *Let us examine what (participant) said. What would you say is wrong with that kind of thinking?*
- *If we continue to think like that, what are we likely to do about HIV testing?*
- *Considering the importance of HIV testing for sexually active people, as we discussed earlier, what would you suggest the alternative to that kind of thinking could be?*
- *If HIV testing is to be taken seriously, what would you suggest is the more appropriate way to think about HIV testing?*
- *What kind of thinking would encourage people to take HIV testing seriously and actually motivate them to go for testing?*

The outcome of these Socratic interactions was that participants saw the link between sexual practices and thoughts about those sexual practices. They became more aware that the way in which they framed their thoughts about various safer sex practices determined whether or not they would engage in those practices.

(c) *Persuasive Communication*

Persuasive communication (Albarracin et al., 2003; Witte, 1995) or verbal persuasion (Bandura, 1977) is a communication method of leading people, through suggestion, into believing that they have the capacity to perform an act. Persuasive communication techniques were used in the TRA/TPB workshops to support the cognitive-behavioural exercises in encouraging participants to question their health behaviour salient beliefs, and to encourage them to adopt more appropriate beliefs about AIDS preventive health behaviour.

Techniques derived from the persuasive health messaging framework formulated by Witte (1995) were used during the workshop exercises. According to Witte, the persuasive health messaging framework which comprises elements from the theory of reasoned action (Fishbein & Ajzen, 1980), the elaboration likelihood model (Petty & Cacioppo, in Witte, 1995) and protection motivation theory (Rogers, in Witte, 1995) provides an integrated approach to health communication campaigns. The persuasive messaging framework proposes that health messages should contain *constant* and *transient* factors. The constant factors are the *threat* (susceptibility and severity), *efficacy* (self-efficacy and response efficacy), and *cues* (credibility of the message source). The constant factors of the persuasive messaging framework are used to structure the content and features of the message. For example, the audience must be convinced that (a) they are susceptible to the severe threat posed by the health condition of interest (HIV/AIDS in the case of this study); (b) that the adoption of easy and recommended behavioural responses would avert the treat; and (c) the message must be presented by a credible source and structured to “fit” the audience. Adding a theory of planned behaviour and social learning theory stance to this equation, Albarracin et al. (2003)

suggest that the persuasive communication should also increase perceptions that behaviour is easy and up to the individual.

The second part of the persuasive health message, according to Witte (1995), is the transient component. These are the changeable elements of the message such as salient beliefs, salient referents, culture, environment and message goals. To maximise the impact of health messages, it is essential that the audience profile in terms of these transient elements be assessed to ensure the relevance of the intervention. This purpose is served by elicitation studies as performed in this study. The integration of the transient information into the constant components of the framework is what ensures the relevance of the message, thus leading to central processing of the message, which has a lasting effect on the audience. The overall purpose of the persuasive health messaging framework is that the message must change beliefs, reinforce existing (positive) beliefs and introduce new beliefs.

To reinforce positive health messaging techniques, the facilitator's verbalisations in the workshops were framed in accordance with the positive affective appeals or emotional benefit appeals recommended by Monahan (1995). The use of positive affect in health messages, according to Monahan, has been "borrowed" from commercial advertising, where it has been shown that advertisements that arouse positive emotions result in more positive feelings towards the product and greater intent to comply with the message. Monahan proposes that positive affect within health messages can lead to positive feelings within a person that, in turn, can make the person easier to persuade. Although positively framed messages will probably not change the negative affect associated with the illness condition, they may enhance positive attitudes towards prevention.

(d) Positive Health Messaging Techniques

In addition to the Socratic questioning that was used to encourage people to change the thoughts that predisposed them to risky behaviour, persuasive health messaging was used to prompt participants to consider the impact that the failure to practice the health behaviour would have on them and their loved ones (the perceived threat component of the message). They were then encouraged to talk about the benefits of the positive life experience that could be realised as a result of practising the safer sex behaviours (positive affective appeals). The positive affective appeals were structured to sensitise the participants to their personal efficacy and to raise the outcome expectancies of the health behaviour, as recommended by Bandura (1977; 1982). This was done by facilitator verbalisations that encouraged them to consider how easy and possible it was to practise the recommended health behaviour and appreciate its benefits. The persuasive message frames were built into the cognitive restructuring, so that participants saw the link between their thoughts about health behaviour and the health behaviour itself. The verbalisations were done in a manner that was supportive and encouraging, as recommended by Monahan (1995).

The procedure followed in sub-session two with regard to all the target health behaviours is outlined below.

5.5.2.2 Health Behaviours Targeted in Sub-session Two

The three health behaviours under study namely, condom use, seeking HIV testing and monogamy were subjected to cognitive behaviour therapy and persuasive communication techniques. The aim of the interventions was to modify participants' attitudes, subjective norms and perceived behavioural control in relations to these health behaviours. A detailed description of how the interventions were performed follows.

(a) Condom Use Attitudes

The intervention aimed to focus on reinforcing participants' positive beliefs about condoms as reported in the elicitation interview. When negative or inappropriate beliefs arose, Socratic questioning techniques were used to get participants to question or dispute them. The assumption was that risky and health protective behaviours were both a function of certain beliefs that shaped attitudes which, in turn, influenced behaviour. It was necessary to go through the process of listing advantages and disadvantages, as the participants in these workshops did not take part in the elicitation interview. Issues that may have been missed in the elicitation interview came to the fore in these sessions.

(b) Condom Use Subjective Norms

Subjective norms, as coined in the original theory, refer to an individual's (first person) belief that significant others (third persons) expect him/her to perform specific actions, and that belief would motivate them (first person) to act as expected (by third persons or significant others). In the context of workshops such as those in this study, this would translate into activities where participants would 'guess' or speculate about significant others' expectations of them and adapt their thoughts and actions accordingly. As it was not possible for participants in this study to 'guess' what their significant others expected of them, the researcher thought it best to *invert* the original conceptualisation of subjective norms for the purpose of the workshop, so that the participants viewed themselves in the 'third person' - that is, they played the role of *significant other* to those who were important to them. This required them to consider the influential role they played in the lives of their significant others and how they were going to influence their significant others to adopt more appropriate health behaviour. The notion was that every person who has significant others is also a *significant other* to those people.

Using techniques from the persuasive messaging framework (Witte, 1995), participants were encouraged to think about the condom use beliefs that were agreed on earlier in the workshop, and talk about how they were going to influence and motivate those important to them to adopt those beliefs. Significant others were placed in categories (for example, friends at work, friends at home, parents, children, church groups and so on) and ways of influencing the different categories were brainstormed. Ideas were shared on how to form peer networks of like-minded individuals on the subject of condom use in the workplace – creation of a “condom using community”.

(c) Condom Use Perceived Behavioural Control

Once commonly held appropriate beliefs about condom use were coined and ways of reinforcing appropriate subjective norms were agreed on, the discussion shifted to perceived behavioural control. As recommended by Bandura (1977), verbal persuasion was used to equip participants with the knowledge that only they could regulate their behaviour, and that they had to believe in their ability to use condoms. To achieve high condom use, control beliefs participants were required to think about possible barriers to and facilitators for the various beliefs mentioned in earlier discussions. Participants first listed possible barriers - factors that would make it difficult - to realising the appropriate condom use beliefs and influential relations with significant others. As the barriers to condom use were underreported in the elicitation interview, the workshop attempted to sensitise participants to these barriers by placing more emphasis on them. Ways of counteracting those barriers were discussed. Next was the listing of facilitators (factors that would make it easy) to achieving desired behaviours and subjective norms. Ways of reinforcing the facilitators or creating opportunities for them to be fully realised were discussed.

(d) HIV Testing Attitudes

The intervention on HIV testing attitudes focused on the fears associated with knowledge of one's own HIV status. The discussion focused on reinforcing some of the positive beliefs about HIV testing that were identified during the elicitation study, such as the belief that testing facilitated early treatment seeking. Beliefs fuelled by avoidance behaviour and fear of negative consequences of testing were targeted for cognitive restructuring (for example, the belief that it is better not to know, as knowing would result in psychological and social problems). Cognitive-behavioural and persuasive communication techniques, as used with condom use attitudes, were used to encourage participants to re-examine the beliefs they held about seeking voluntary HIV counselling and testing. In the end, the group had to generate more appropriate beliefs that they wished their peers to espouse.

(e) HIV Testing Subjective Norms

As with condom use, participants were encouraged to think in terms of their role as important other to people with whom they were in close relationships. Persuasive messaging framework techniques (Witte, 1995) were used to encourage participants to think of ways to encourage people in close relationships to them to seek HIV counselling and testing. The important others who were listed in the elicitation study were mentioned as frequently as possible. The role of colleagues as important others was given prominence as the intervention was done in the workplace and, more importantly, because colleagues were ranked the fourth most important other in the elicitation study.

(f) HIV Testing Perceived Behavioural Control

As the elicitation results indicated a high degree of self-doubt about the ability to seek testing, especially among males, the focus of this part of the workshop was on building self-confidence about seeking HIV testing. Persuasive messaging techniques (Bandura, 1977; Witte, 1995) that were used during the discussion on attitudes were employed. The facilitators of HIV testing behaviour that were identified during the elicitation study, for example the belief that testing provided an opportunity to make a positive life style change, were used as the theme of persuasive messages to reinforce test-seeking behaviour. Ways of overcoming the barriers identified in the elicitation study were also explored in detail.

(g) Monogamy Attitudes

While positive beliefs about monogamy were reinforced, cognitive restructuring techniques were used to make participants question and reinterpret some of the irrational beliefs about monogamy identified in the elicitation interview (for example, the belief that partner variety is a requirement of sexual fulfilment and the belief that it is 'natural' to desire more than one sex partner). Persuasive messaging was used to convey the belief that sexual relations can be exciting in a monogamous relationship. Participants had to generate alternative, monogamy-enhancing beliefs.

(h) Monogamy Subjective Norms

Salient significant others who would approve of monogamy were identified and participants had to talk about how to enhance relations with those significant others, particularly sex partners. The focus of the discussion was on encouraging the important others to commit to appropriate beliefs

about monogamy. Ways of creating social pressure for monogamous behaviour among peers were discussed.

(i) Monogamy Perceived Behavioural Control

As done with condom use and test-seeking behaviours, barriers and facilitators to monogamous behaviour were brainstormed and discussed. Ways of mitigating the barriers and strengthening the facilitators were explored. The facilitators and barriers brought up in the sessions were added to those that dominated the elicitation study.

The entire sub-session was concluded by the facilitator summarising the issues raised in relation to each health behaviour.

5.5.3 Sub-session Three: Intention Formation

The aim of sub-session three was to use the health behaviour beliefs, subjective norms and feelings of being in control generated in the preceding sub-session, and to help participants develop goals for safer sex behaviour over the next six months. The intention formation was in relation to each of the three health behaviours forming the focus of the study. An attempt was made by the facilitator to get the participants to formulate their intentions in accordance with Ajzen and Fishbein's (1980) four-element approach of action, time, target and context. The facilitator prompt used to steer the intention formation in this direction was: '*when it comes to condom use/ test seeking/monogamy (target) in your relationship with your sex partner (context), what are you going to do differently (action) over the next six months (time)?*' Efforts were made to ensure that the intentions formed addressed all the attitudes, subjective norms and perceived behavioural control raised in the workshop and elicitation study. The outcome of this facilitation was that participants were

each challenged to commit themselves to a course of action in relation to specific target behaviours (condom use, test seeking and monogamy). The facilitator summarised by placing the single actions that were brainstormed during the session into behavioural categories as proposed by Ajzen and Fishbein. At the end of this sub-session, each participant had committed verbally to health-protective actions or behaviour in order to avoid HIV infection.

5.5.4 Sub-session Four: Learning Behavioural Skills

The aim of sub-session four was to allow participants to identify specific behavioural skills or knowledge in relation to behaviour that they needed to acquire in order to achieve the intended behaviours, as generated in the previous sub-session. Relevant behavioural information was orally presented by the facilitator and, where feasible, role-plays on the various target behaviours were undertaken. Role-plays were conducted on themes suggested by participants in the workshops and elicitation study, such as:

- introducing condoms to an unwilling partner in a long-term relationship;
- introducing the topic of HIV testing in an established relationship 'without arousing suspicion';
- introducing or negotiating condom use;
- refusing sexual advances from a person with whom you need to have a working relationship.
- speaking to teenage children about sex;
- answering embarrassing questions from children; and

- how to talk to children about condom use;

Sub-session four turned out to be the most interactive session in almost all the workshops. It was also the session that enabled participants to set the agenda and decide on the most significant issues to talk about and what skills needed to be learned.

5.5.5 Sub-session Five: Consolidation

Sub-session five was the closing session, in which the facilitator summarised the highlights of the workshop session focusing on the three health behaviours. These highlights were limited to the beliefs that participants agreed were appropriate to espouse, how participants were going to influence people close to them to adopt those beliefs, how participants were going to create circumstances that were going to make it easy for them to engage in the appropriate health behaviours, and the skills learned from the workshop. Participants were encouraged to verbalise the memories they wished to take from the workshop, and how they were going to maintain the knowledge, attitudes and behaviours learned in the workshop.

A lot of qualitative data was gathered during the facilitation of the TRA/TPB workshop. Most of this qualitative data turned out to be useful, and is incorporated in Chapter 7.

5.6 THE INFORMATION-ONLY WORKSHOP

The intervention for the information-only group was a formal lecture followed by a question–and-answer session.

The workshop covered the following topics:

- The department's HIV/AIDS strategic plan;

- The department's resources for assisting employees requiring assistance with sexual health matters (the clinic and pharmacy as well as the available health professionals and how they could be reached);
- The biomedical aspects of HIV/AIDS (how the HI virus attacks the immune system; explanation of various HIV-related terms such as CD4 cells, viral load, sero-conversion and opportunistic infections);
- Prevention of HIV infection;
- Myths about HIV/AIDS (how it is transmitted and not transmitted);
- Support for next-of-kin and colleagues who get infected; and
- Anti-retroviral treatment and how it works.

At the end of the workshop participants had been exposed to all the necessary information on the biomedical facts of HIV/AIDS and the psycho-social support resources available at their place of work.

5.7 MEASURING INSTRUMENTS

The researcher-designed measuring instruments used to gather data in the study are reported on below. These are the Biographical Questionnaire, AIDS Health Behaviour Questionnaire and the TRA/TPB Questionnaire. The AIDS Health Behaviour Questionnaire and the TRA/TPB Questionnaire were piloted among six English-proficient employees who were requested to comment on the difficulty level and wording of the questions, the length of the questionnaires, annoying features and any other problems they encountered in completing the questionnaires. The aim was to ensure that items that were problematic were discarded or rephrased.

The questionnaires were administered to the TRA/TPB group and the Information-only group at Time1, Time 2 and Time 3. The TRA/TPB questionnaire, however, was only administered at Time 1 and Time 2 as the focus of interest at Time 3 was only health behaviour. At Time 1 participants completed the questionnaires individually prior to their participation in intervention workshops. Time 2 and Time 3 administration of the questionnaires was done by sending questionnaires to participants by internal e-mail and they returned them by e-mail or internal courier in a sealed envelope. The questionnaires were inscribed with the respondent's group category at the bottom corner of the Biographical Questionnaire.

Each of the questionnaires will now be discussed in terms of the aim, description and scoring.

5.7.1 Biographical Questionnaire

5.7.1.1 Aim

The aim of the biographical questionnaire (Appendix D) was to identify the personal variables by which the sample could be characterised and described.

5.7.1.2 Description

The five items of the biographical questionnaire pertained to sex, age, highest level of education and sexual relationship status. A fifth item, which was made optional because of its sensitivity, asked respondents about whether they knew their HIV status. They had to respond with a "Yes" or a "No". The aim of this question was to determine whether there was an increase in knowledge of HIV status at follow-up assessments, which would have been an indicator of increased HIV test-seeking behaviour.

5.7.1.3 Scoring

The scoring was done by coding each response by the number allocated and entering each number on an Excel spread sheet.

5.7.2 AIDS Health Behaviour Questionnaire

5.7.2.1 Aim

The aim of the researcher-designed AIDS Health Behaviour Questionnaire (Appendix E) was to measure respondents' performance and non-performance of various AIDS preventive behaviours.

5.7.2.2 Description

The 27-item AIDS Health Behaviour Questionnaire was designed to yield a health behaviour index score as prescribed by Ajzen and Fishbein (1980). The questionnaire was designed by listing single actions that are indicative of the behavioural category in question. The single actions listed include both appropriate and inappropriate behaviours. For this study, a "True/False" response format was used, as it was thought that this format compelled respondents to explore the extent to which a statement was applicable or not applicable to them. Respondents would then choose the behaviours they engaged in during the period in question.

The behavioural categories assessed by the questionnaire were condom use (Items 3 – 10), HIV test seeking (Items 11 – 19) and monogamy (Items 1 and 20 – 27). Item 2 pertained to abstinence, and was used to exclude respondents who were not sexually active.

5.7.2.3 Scoring

Scoring stencils were designed for positive and negative responses. Values of +1 were allocated to all “True” responses to positive behaviours, and all “False” responses to negative behaviours. Values of -1 were allocated to all “True” responses to negative behaviours, and all “False” responses to positive behaviours. A score was computed by adding together all +1 and -1 responses to obtain the respondent’s health behaviour index score. The scores ranged from -27 to +27. Scores in the negative (below 0) showed a lack of adherence to HIV/AIDS health behaviour. Scores in the positive (above 0) indicated adherence to appropriate HIV/AIDS health behaviour, with scores closer to 27 suggesting higher adherence and those closer to 0 showing poor adherence.

The health behaviour index score was split into three scores in accordance with the three health behaviours being studied, namely the condom use index (measured by items 3 – 10), HIV testing index (measured by items 11 – 19) and monogamy index (measured by items 1, 20 – 27). The scores ranged from -8 to +8 for condom use, -9 to +9 for HIV test-seeking, and -9 to +9 for monogamy. Scores falling in the negative range (below 0) indicated non-adherence to the health behaviour, and those in the positive range (above 0) indicated adherence.

5.7.3 TRA/TPB Questionnaire

5.7.3.1 Aim

The aim of the TRA/TPB questionnaire (Appendix F) is to measure respondents’ health behaviour intentions, attitudes towards the health behaviours of interest, subjective norms and perceived behavioural control.

5.7.3.2 Description

The researcher-designed TRA/TPB questionnaire was constructed in strict adherence to guidelines as published by Ajzen and Fishbein (1980), Francis et al. (2004) and Montano and Kasprzyk (2002). While care was taken to adhere to the guidelines by the proponents of the theory, changes were implemented on the rating scale anchors, as the feedback obtained from the pilot administration of the questionnaire showed that respondents struggled to make sense of the *Unlikely – Likely* end-points in relation to most of the questions. With the exception of the control beliefs questions, the anchors for most items were kept as *Disagree – Agree*. Some of the items were reverse scored, which means the negatively worded endpoints appeared on the right.

Francis et al. (2004) and Montano and Kasprzyk (2002) recommend that TRA/TPB questionnaires make a distinction between *direct* and *indirect* measurement of constructs. Direct measures are overall or general measures of direct determinants of individuals' attitudes, subjective norms and perceived behavioural control in relation to health behaviour. Indirect measures, on the other hand, are belief-based in that they ask respondents about what a specific behaviour means to them and what they believe would be the outcome of *that* specific behaviour.

The 60- item questionnaire measured the following constructs:

- *Behavioural intention (Items 1 - 6)*: Francis et al. (2004) propose three methods of measuring behavioural intention: intention performance, generalised intention and intention simulation. Intention performance is a method used in situations where it is possible to observe the actual performance of behaviour. Generalised intention is used where individual respondents report on their own health-related behaviour. Intention simulation is used in experimental contexts where proxy measures of actual behaviour can be produced to approximate "real" situations. The generalised intention method, which Francis and

colleagues consider the method with the highest internal consistency, was used in this study. Behavioural intention was measured with six items, two of each referring to the three operationalised health behaviours. The questions were anchored with a 7-point unipolar *Disagree - Agree* scale.

- *Attitude (Items 7 – 24)*: Direct attitude was measured by a 6-item semantic differential scale (items 7 – 12) anchored with adjectives such as *Good – Bad, Unwise – Wise*. Behavioural beliefs (an indirect measure of attitude) was measured by six items (items 13 to 18) anchored with a unipolar *Disagree – Agree* scale. Outcome evaluations (another indirect measure of attitude) was measured by six items (items 19 to 24) anchored with a bipolar *Undesirable – Desirable* scale.
- *Subjective norms (Items 25 – 42)*: Direct subjective norms were measured by six items (items 25 – 30) anchored with a 7-point unipolar *Disagree – Agree* scale. Normative belief (an indirect measure) was measured by six items (items 31 to 36) anchored by a 7-point unipolar *Disagree – Agree* scale. Motivation to comply with referents (another indirect measure) was measured with a six-item (items 37 – 42) 7-point bipolar scale anchored by *Not at all – Very Much* endpoints.
- *Perceived behavioural control (Items 43 – 60)*: Direct perceived behavioural control was measured by six items (items 43 – 48) anchored by a 7-point unipolar *Disagree–Agree* scale. Control belief (an indirect measure) was measured by six items (items 49 – 54) anchored by a 7-point unipolar *Unlikely – Likely* scale. Perceived power to influence (the other indirect measure) was measured by six items (items 55 – 60) anchored by a 7-point bipolar scale anchored by *Not at all – Very much* endpoints.

The intention score was further split into three scores in accordance with the three health behaviours under study, namely condom use intention (items 5 and 6), HIV testing intention (items 1 and 2) and monogamy intention (items 3 and 4).

5.7.3.3 Scoring

Scoring was done in accordance with the guidelines prescribed by Francis et al. (2004). The scoring format is summarised in Appendix G. The scoring was performed as follows:

- *Behavioural intention:* The overall behavioural intention items (items 1 to 6) were scored from 1 to 7 with the total score on the six items ranging from a minimum count of 6 to a maximum count of 42. The final score was obtained by calculating the mean of all six intention items and ranged from 1 to 7. Low intention scores were indicated by low scores and high intentions by high scores.
- *Condom use intention:* The two condom use intention items (items 5 and 6 in Appendix F) were scored from 1 to 7, with the total score on the two items ranging from a minimum count of 2 to a maximum count of 14. The final condom use intention score was obtained by calculating the mean of the two condom use intention items and ranged from 1 to 7, with low scores indicating low condom use intentions, while high scores indicated high condom use intentions.
- *HIV testing intention:* The two HIV testing intention items (items 1 and 2 in Appendix F) were scored from 1 to 7, with the total score on the two items ranging from a minimum count of 2 to a maximum count of 14. The final HIV testing intention score was obtained by calculating the mean of the two HIV testing intention items and ranged from 1 to 7,

with low scores indicating low HIV testing intentions, while high scores indicated high HIV testing intentions.

- *Monogamy intention:* The two monogamy intention items (items 3 and 4 in Appendix F) were scored from 1 to 7, with the total score on the two items ranging from a minimum count of 2 to a maximum count of 14. The final monogamy intention score was obtained by calculating the mean of the two monogamy intention items and ranged from 1 to 7, with low scores indicating low monogamy intentions, while high scores indicated high monogamy intentions.
- *Attitude:* The six direct attitude items (items 7 to 12) were scored from 1 to 7, yielding a total score ranging from a minimum count of 6 to a maximum count of 42. The final score was computed by calculating the mean of all six direct attitude scores. The final direct attitude scores ranged from 1 to 7, with low scores showing poor attitude and higher scores showing positive attitude.

Behavioural belief items were scored in the same way as the direct attitude scores that is, 1 to 7 in a unipolar direction. The outcome evaluation items were scored from -3 to +3, with the final scores ranging from -15 to +15 (scores in the negative showed a poor outcome evaluation and those in the positive showed a good outcome evaluation). The total indirect attitude score was obtained by multiplying each behavioural belief item score by the corresponding outcome evaluation item score. For example, if a respondent rated herself 6 on item 13, *“My going for a HIV test in the next six months shows that I care about my health and my partner’s health”* (a behavioural belief item scored from 1 to 7 and anchored by *Disagree – Agree* end-points) and 7 on item 19 *“For me, caring about my health is”* (a corresponding outcome evaluation item scored from -3 to +3 and anchored by *Undesirable – Desirable* end-points), the joint score for the two items would be 18, which is a product of the behavioural belief score (6)

multiplied by the corresponding outcome evaluation score (3). The procedure was repeated with items 14 and 20 through items 18 and 24. All the joint behavioural belief and outcome belief scores were added together to obtain an indirect attitude score which ranged from -126 to +126. The indirect attitude score was added to the direct attitude score to obtain the overall attitude score. For the final statistical analyses, only the direct attitude scores (single-digits) were used as the combined direct and indirect scores (double- to triple-digits) proved problematic when entered into correlations with single-digit health behaviour and intention scores.

- *Subjective norms:* The six direct subjective norm items (items 25 to 30) were scored from 1 to 7, yielding a total score ranging from a minimum count of 6 to a maximum count of 42. The final score was computed by calculating the mean of all six direct subjective norm scores. The final direct subjective norm scores ranged from 1 to 7, with low scores showing low subjective norm and higher scores showing high subjective norm.

Normative belief items were scored in the same way as the direct subjective norms scores that is, 1 to 7 in a unipolar direction. The 'motivation to comply' items were scored from -3 to +3, with final scores ranging from -15 to +15. The total indirect subjective norms score was obtained by multiplying each normative belief item score by the corresponding 'motivation to comply' item score. For example, if a respondent rated herself 3 on item 31, "*My partner would approve of me staying faithful to her/him*" (a normative belief item scored from 1 to 7 and anchored by *Disagree – Agree* end-points) and 3 on item 37 "*My partner's approval of my faithfulness is important to me*" (a corresponding 'motivation to comply' item scored from -3 to +3 and anchored by *Not at all – Very much* end-points), the joint score for the two items would be -3, which is a product of the normative belief score (3) multiplied by the corresponding motivation to comply score (-1).

The procedure was repeated with items 38 and 44 through items 42 and 48. The final indirect subjective norms scores ranged from -126 to +126. The indirect subjective norms score was added to the direct subjective norms score to obtain the overall subjective norms score. For the final statistical analyses, only the direct subjective norm scores (single-digits) were used.

- *Perceived behavioural control:* The six direct perceived behavioural control items (items 43 to 48) were scored from 1 to 7, yielding a total score ranging from a minimum count of 6 to a maximum count of 42. The final score was computed by calculating the mean of all six direct perceived behavioural control scores. The final direct perceived behavioural control scores ranged from 1 to 7, with low scores showing low perceived behavioural control and higher scores showing high perceived behavioural control.

Control belief items were scored in the same way as the direct perceived behavioural control scores that is, 1 to 7 in a unipolar direction. The perceived power items were scored from -3 to +3, with final scores ranging from -15 to +15. The total indirect perceived behavioural control score was obtained by multiplying each control belief item score by the corresponding perceived power item score. For example, a rating of 5 on item 49 *“Knowing my HIV status would make it possible for me to achieve a positive life style change”* (a control belief item scored from 1 to 7 and anchored by *Unlikely - Likely* end-points) and 6 on item 55 *“The likelihood of making a positive life style change makes it easy for me to go for HIV testing”* (a corresponding perceived power item scored from -3 to +3 and anchored by *Not at all – Very much* end-points) would result in a joint score of 10, which is a product of the control belief score (5) multiplied by the corresponding perceived power score (2). The procedure was repeated with items 50 and 56 through items 54 and 60. The final indirect perceived behavioural control scores ranged from -126 to +126.

The direct and indirect perceived behavioural control scores were added to obtain the overall perceived behavioural control score. For the final statistical analyses, only the direct perceived behavioural control scores (single-digits) were used.

5.8 STATISTICAL ANALYSES

Three levels of statistical analyses were performed with the raw data obtained from the questionnaires.

- (a) In the first analysis, multiple correlation coefficients (R) between the weighted combination of constructs of the theories of reasoned action and planned behaviour and behavioural intentions of participants were computed to determine the degree of relationship. The multiple correlations obtained were then entered into a regression analysis to determine the extent to which the theoretical constructs predicted intentions. This tested hypotheses 1, 2 and 3.
- (b) In the second analysis, the health behaviour and theoretical construct scores of the TRA/TPB workshop group across the three measurement periods were subjected to Analysis of Variance (ANOVA) to determine if there were significant differences across the three measurement periods. Only health behaviour was measured at Time 3. This tested hypotheses 4, 5 and 6.
- (c) In the third analysis, the health behaviour differences between the TRA/TPB workshop group and the information-only workshop group at one month and six months follow-up were compared using *t*-tests. This tested hypotheses 7 to 12.

5.9 SUMMARY

This chapter explained details pertaining to the research design of the study and the sample and sampling procedures used. The theory-based intervention that was designed for the study has also been presented in detail. The different measuring instruments administered to the sample were described in detail, as well as the statistical analyses performed.

The findings yielded by the data gathered through the procedures described in this chapter are reported in detail in Chapter 6.

CHAPTER 6

RESULTS

This thesis examined the effectiveness of a HIV/AIDS intervention model derived from the theories of reasoned action and planned behaviour. Participants were divided into two groups. One group participated in a theory-based health promotion workshop, while the other participated in a conventional information-giving workshop. Both groups of participants completed questionnaires measuring health behaviour intention, attitude, subjective norm, perceived behavioural control and health behaviour at baseline and one month post-intervention. Only health behaviour was measured at six months post-intervention. The raw data obtained from the questionnaires were analysed with the Statistical Package for the Social Sciences (SPSS). This chapter reports the findings of statistical analyses in relation to the objectives of the study and the twelve hypotheses tested.

6.1 PREDICTION OF HEALTH BEHAVIOUR INTENTIONS

The first objective of the thesis was to determine if the combined theories of reasoned action and planned behaviour variables (attitude, subjective norm and perceived behavioural control) predicted health behaviour intentions (condom use intention, HIV testing intention and monogamy intention.) Hypotheses 1 to 3 were formulated to test this objective.

To test these hypotheses, multiple correlation (R) coefficients were computed to determine the extent to which the model predicted behavioural intention. Only data at baseline was used for this analysis. The model summary of health behaviour intentions (condom use, HIV testing and monogamy) is shown in Table 6.1.

Table 6.1: Prediction of Health Behaviour Intentions

<i>Health Behaviour Variables</i>	<i>R</i>	<i>R²</i>	<i>β</i>	<i>p- values</i>
Condom Use Intention	.266*	.071	.256** (A) .011 (SN) .038 (PBC)	.007
HIV Testing Intention	.512*	.262	.505** (A) .044 (SN) -.043 (PBC)	.000
Monogamy Intention	.187	.035	.153 (A) .066 (SN) .039 (PBC)	.117

n = 107; * $p < .05$; ** $p < .001$

Predictors: Attitude (A), Subjective Norms (SN), Perceived Behavioural Control (PBC).

6.1.1 Intention to Use Condoms

Hypothesis 1 predicted that the combined TRA/TPB variables would predict a significant proportion of the variance in intention to use condoms. Table 6.1 above shows a significant relationship between condom use intention and the combined TRA/TPB variables (attitude, subjective norms and perceived behavioural control) ($R = .266$; $p = .007$). It should, however, be noted that the effect size of the correlation is very small, and that only 7.1% of the variance in intention to use condoms is predicted by the TRA/TPB variables ($R^2 = .071$; $p < .05$). The individual

variable that had the strongest effect on intention to use a condom is attitude ($\beta = .256$; $p < .001$). Perceived behavioural control ($\beta = .038$, *ns*) and subjective norms ($\beta = .011$, *ns*) had no significant effect on condom use intention. This means that participants who had a positive attitude towards condom use were more likely to intend to use condoms.

Although Hypothesis 1 – that the combined TRA/TPB variables would predict a significant proportion of the variance of the intention to use condoms – could technically be accepted, the small effect size should be kept in mind.

6.1.2 Intention to Seek HIV Testing

Hypothesis 2 predicted that the combined TRA/TPB variables would predict a significant proportion of the variance in intention to seek HIV testing. As seen in Table 6.1, there was a significant relationship between intention to seek HIV testing and the combined TRA/TPB variables ($R = .512$, $p < .000$). The combined TRA/TPB variables explained 26.2% of the variance in HIV testing intentions ($R^2 = .262$; $p < .05$). The individual variable that had the strongest effect on intention to seek HIV testing was attitude (as was the case in intention to use condoms) ($\beta = .505$; $p < .000$). Subjective norms ($\beta = .044$, *ns*) and perceived behavioural control ($\beta = -.043$, *ns*), on their own, did not have a significant effect on intentions to seek HIV testing. This means that participants who had a positive attitude towards HIV testing were more likely to consider being tested for HIV themselves.

Hypothesis 2 – that the combined TRA/TPB variables would predict a significant proportion of the variance in intention to seek HIV testing – can thus be accepted.

6.1.3 Intention to have One Sex Partner

Hypothesis 3 predicted that the combined TRA/TPB variables would predict the intention to have only one sex partner (monogamy). Table 6.1 shows an insignificant relationship between the combined TRA/TPB variables and monogamy intention ($R = .187$; $p = .117$). Only 3.5% of the variance in monogamy intentions was explained by the TRA/TPB variables ($R^2 = .035$; *ns*). Attitudes ($\beta = .153$, *ns*) had no influence on monogamy intentions, nor did subjective norms ($\beta = .066$, *ns*) and perceived behavioural control ($\beta = .039$, *ns*).

This weak relationship suggests that hypothesis 3 – that the combined TRA/TPB variables would predict a significant proportion of the variance in intentions to have one sex partner – had to be rejected. This implies that positive attitudes towards monogamy, social pressure to be monogamous and confidence in one's own ability to be monogamous, had no significant effect on the participants' intentions to be monogamous.

6.1.4 Conclusion on Prediction of Health Behaviour Intentions

The findings for the first objective of the study showed that the TRA/TPB variables (attitudes, subjective norms and perceived behavioural control) explained only 7.1% of the variance in intentions to use condoms, and 26.2% of variance in intentions to seek HIV testing. The variable with the strongest effect on both intentions to use condoms and to seek HIV testing was attitudes towards condom use and HIV testing. Subjective norms and perceived behavioural control had no influence on variance in condom use or HIV testing intentions. The TRA/TPB model failed to explain any significant variance in intentions to practise monogamy.

6.2 HEALTH BEHAVIOUR CHANGE ACROSS MEASUREMENT PERIODS

The second objective of the study was to develop a HIV/AIDS health promotion workshop in accordance with the theory of reasoned action and theory of planned behaviour, and to determine if the TRA/TPB workshop would predict HIV/AIDS health behaviour change. This objective required that the health behaviour of the TRA/TPB group be measured across all three measurement periods – baseline or before intervention (Time 1), one month post-intervention (Time 2) and six months post-intervention (Time 3) – in order to determine whether or not there were improvements in the three health behaviours up to six months after participation in the theory-based workshop. Hypotheses 4 to 6 were formulated to test this objective.

To determine whether or not there had been a change in the health behaviour of the TRA/TPB group as a result of the theory-based intervention, analysis of the variance (ANOVA) was computed on scores for all three measurement periods. In this study, the two-tailed ANOVA was used to assess whether the mean differences between health behaviours across the three measurement periods were due to error or true differences. The findings of the ANOVA are shown in Table 6.2.

6.2.1 Condom Use Behaviour across Three Measurement Periods

Hypothesis 4 predicted that there would be significant differences in condom use health behaviour across the three measurement periods. Analysis of variance (ANOVA) showed that the mean differences for condom use behaviour failed to reach significance ($F = 3.911$; $p = .111$) across the three measurement periods (see Table 6.2). Hypothesis 4 was rejected, which means that the theory-based intervention did not result in

any significant change in condom use behaviour over the six month period.

Table 6.2: ANOVA for Health Behaviour across Three Measurement Periods

	<i>Time 1 (n = 92)</i>		<i>Time 2 (n = 56)</i>		<i>Time 3 (n = 37)</i>		<i>F - ratio</i>	<i>P - value (2-tailed)</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
Condom use	1.12	3.189	1.07	3.687	1.43	3.228	3.911	0.111
HIV testing	2.02	4.606	2.66	3.165	.11	3.235	2.070	0.116
Monogamy	4.84	2.588	3.52	3.368	3.38	2.832	1.536	0.217

6.2.2 HIV Testing Behaviour across Three Measurement Periods

Hypothesis 5 predicted that there would be significant differences in HIV testing health behaviour across the three measurement periods. The health behaviour means were subjected to ANOVA, and as can be seen in Table 6.2, the mean differences for HIV testing behaviour failed to reach significance ($F = 2.070$; $p = .116$) across the three measurement periods. Hypothesis 5 was thus rejected, which means that the theory-based intervention did not result in any significant change in test-seeking behaviour over a six month period.

6.2.3 Monogamy across Three Measurement Periods

Hypothesis 6 predicted that there would be significant differences in monogamy health behaviour across the three measurement periods. As Table 6.2 shows, when the means for monogamy health behaviour were

subjected to ANOVA, no significant differences were observed across the three measurement periods ($F = 1.536$; $p = .217$). Hypothesis 6 was rejected, which implies that the theory-based intervention did not bring about any significant change in monogamous behaviour over a six month period.

6.2.4 Conclusion on Health Behaviour Change

The findings in respect of the second objective, namely to determine if the theory-based intervention would result in significant health behaviour change, indicated that participation in a TRA/TPB-based health promotion workshop did not result in any significant improvement in HIV/AIDS health behaviour over a six month period. This means that the intervention model (derived from the theories of reasoned action and planned behaviour) did not have any significant impact on participants' use of condoms, seeking an HIV test or monogamous behaviour.

6.3 HEALTH BEHAVIOUR DIFFERENCES BETWEEN THE TRA/TPB GROUP AND THE INFORMATION-ONLY GROUP

The third and final objective of the study was to compare the TRA/TPB group and the Information-only group with regard to health behaviour one month (Time 2) and six months (Time 3) post-intervention. The objective required that all three health behaviours be assessed and compared at Time 2 (1 month after intervention) and Time 3 (6 months after intervention) for both groups. Hypotheses 7 to 12 were formulated to test this objective.

6.3.1 Differences in Condom Use Health Behaviour

To determine if there were any significant health behaviour differences between the two groups one month and six months after intervention, the means of the health behaviour indices between the two groups were subjected to t-tests.

Hypothesis 7 and 8 predicted that there would be significant differences in condom use health behaviour between the TRA/TPB group and the Information-only group one month and six months after participating in the workshop interventions. Table 6.3 shows that there were no significant differences in condom use behaviour between the two groups at one month ($t = -1.976$; $df = 102$; $p = .051$) and six months follow-up assessment ($t = -.579$; $df = 66$; $p = .565$). Both hypotheses 7 and 8 were thus rejected, which means that the type of intervention in which people participated did not produce any significant differences in condom use health behaviour after one and six months respectively.

Table 6.3: Condom Use Differences between TRA/TPB Group and Information-only Group at One Month (T2) and Six Months (T3) Post-Intervention

Variable	TRA/TPB Group <i>n</i> = 56 (T2); <i>n</i> = 37 (T3)		Information-only Group <i>n</i> = 47 (T2); <i>n</i> = 30 (T3)		<i>t</i>	<i>p</i> – value (2-tailed)
	Mean	SD	Mean	SD		
Condom Use Index T2	1.07	3.687	2.36	2.770	-1.976	.051
Condom Use Index T3	1.43	3.228	1.87	2.825	-.579	.565

6.3.2 Differences in HIV Testing Health Behaviour

Hypotheses 9 and 10 predicted that there would be significant differences in HIV testing health behaviour between the TRA/TPB group and the Information-only group one month and six months after participating in the different workshops. The t-test results in Table 6.4 show no significant differences between the two groups in HIV testing health behaviour one month after participating in the two different workshops ($t = -1.233$; $df = 102$; $p = .221$), or at six months follow-up assessment ($t = -.922$; $df = 66$; $p = .360$). Hypotheses 9 and 10 were thus rejected, which means that the type of intervention received by participants did not change their HIV test-seeking behaviour at one or six months post-intervention.

Table 6.4: HIV Testing Differences between TRA/TPB Group and Information-only Group at One Month (T2) and Six Months (T3) Post-Intervention

Variable	TRA/TPB Group n = 56 (T2); n = 37 (T3)		Information-only Group n = 47 (T2); n = 30 (T3)		t	p – value (2-tailed)
	Mean	SD	Mean	SD		
HIV Testing Index T2	1.86	3.165	2.66	3.434	-1.233	.221
HIV Testing Index T3	.11	4.095	1.07	4.349	-.922	.360

6.3.3 Differences in Monogamy Health Behaviour

Hypotheses 11 and 12 predicted that there would be significant differences in monogamy health behaviour between the TRA/TPB group and the Information-only group one month and six months after participating in the different workshops. Table 6.5 shows that the only significant difference was that the Information-only group showed an increase in monogamous behaviour one month after the workshop ($t = -3.080$; $df = 102$; $p < .003$). Although the mean for the Information-only group was still slightly higher than that of the TRA/TPB group at the six months period, it did not reach a significant level. Hypothesis 11 could thus be accepted. The higher mean for the Information-only group at one month follow-up assessment could probably be a reflection of the extra emphasis that was placed on monogamy during the information workshop a month earlier.

Table 6.5: Monogamy Differences between TRA/TPB Group and Information-only Group at One Month (T2) and Six Months (T3) Post-Intervention

Variable	TRA/TPB Group		Information-only Group		t	p – value (2-tailed)
	n = 56 (T2); n = 37 (T3)		n = 47 (T2); n = 30 (T3)			
	Mean	SD	Mean	SD		
Monogamy Index T2	3.52	3.368	5.28	2.174	-3.080*	.003
Monogamy Index T3	3.38	2.832	4.37	1.771	-1.664	.101

* $p < .05$

Hypothesis 12 was rejected, since there was no significant difference in monogamous health behaviour between the two groups six months after participating in the different workshops ($t = -1.664$; $df = 66$; $p = .101$).

6.3.4 Conclusion on Health Behaviour Differences

Findings in relation to the third objective, namely to determine if there would be health behaviour differences between the two groups at one month and six months follow-up assessment, failed to show significant differences in health behaviour between participants who took part in a theory-based health promotion intervention and those who took part in a lecture type, information-sharing workshop. The type of intervention received did not make a difference to condom use health behaviour and HIV testing health behaviour after one month. There were significant differences in monogamous behaviour for the information-only group after one month. At six months follow-up assessment, no differences in all three health behaviours were observed, an indication that the type of intervention received did not result in differences in behaviour.

6.4 SUMMARY

This chapter presented the results of statistical tests used to test the hypotheses outlined in Chapter 5. In terms of the predictive utility of the theories of reasoned action and health behaviour, the findings showed that the theoretical variables predicted condom use intentions (albeit with a small effect size) and HIV testing intentions (moderate effect size). Most of the variance in condom use intentions and HIV testing intentions was explained by attitudes, while subjective norms and perceived behavioural control did not predict any significant variance. The theoretical variables, however, did not predict any monogamy intentions.

An assessment of health behaviour change in the TRA/TPB sample across the three measurement periods revealed that the theory-based intervention did not result in any improvement or significant change in health behaviour. Thus, the theory-based intervention did not have an effect on health behaviour over a six month period.

Comparisons between the TRA/TPB group and the Information-only group with regard to health behaviour at one month and six months showed no differences in condom use and HIV testing health behaviour after one month. Only the Information-only group showed a significant difference in monogamy behaviour after one month. There were no differences in all three health behaviours after six months.

In conclusion, it can be said that the TRA/TPB intervention workshop did not contribute to any changes in the health behaviour of participants regarding condom use, seeking HIV testing or having only one sex partner. The possible reasons for these findings will be discussed in Chapter 7, as well as the implications this has for the development of behaviour change programmes relevant to the Southern African context. Also discussed in Chapter 7 is the qualitative information that came up during the workshop facilitation. While this information was not part of the data gathering in accordance with the aims of the thesis, it became useful in understanding the implications of the findings.

CHAPTER 7

DISCUSSION

The results of the thesis, its implications for HIV/AIDS interventions in the workplace as well as limitations and suggestions for future research, will be discussed in this chapter.

The overall aim of the thesis was to explore the applicability of the theories of reasoned action and planned behaviour in the design of a HIV/AIDS health promotion workshop. The discussion shall focus on whether the theories worked in a South African context in accordance with the objectives of the study. Secondly, the psycho-social barriers that may have accounted for the findings shall be discussed. Thirdly, suggestions for a theory-based HIV/AIDS intervention in the South African workplace will be made. Finally, the limitations of the study and recommendations for future research will be presented.

7.1 DID THE THEORIES OF REASONED ACTION AND PLANNED BEHAVIOUR WORK IN THIS SOUTH AFRICAN STUDY?

The overall purpose of the study was to determine, firstly, if the combined variables of the theories of reasoned action and planned behaviour would predict HIV/AIDS health behaviour intentions. The second purpose was to design a theory-based HIV/AIDS health promotion workshop and to determine if that workshop resulted in behaviour change. The third objective of the study was to compare the two groups of participants in terms of health behaviour responses at one month and six months post-intervention. The final objective was to use the findings of the study to make suggestions regarding the design of workplace HIV/AIDS

interventions. The implications of the findings of the study are discussed below.

7.1.1 Did TRA/TPB Variables Predict Health Behaviour Intentions?

The first objective of the study was to investigate if the variables of the theories of reasoned action and planned behaviour, namely attitudes, subjective norms and perceived behavioural control, would predict participants' intentions to use condoms, seek HIV testing and to have monogamous relationships. The findings of the study indicated that the theoretical model accounted for a small to moderate proportion of intentions to use condoms and seek HIV testing. Only 7.1% and 26.2% of participants' intentions to use condoms and to seek HIV testing respectively, could be explained by a combination of the theories of reasoned action / planned behaviour variables. This finding, which is not much different from findings made by other researchers (Armitage & Conner, 2001; Sheeran & Orbell, 1998; Sheeran & Taylor, 1999) gives credence to the hypothesis that the theories of reasoned action and planned behaviour may require extension as they leave a significant proportion of the variance unexplained.

The variable which explained most of the variance in condom use and HIV testing intentions was attitude. This means that participants with positive attitudes towards condom use and HIV testing had higher intentions to use condoms and to seek HIV testing. Subjective norms and perceived behavioural control did not contribute significantly to the variance in condom use and testing intentions. Monogamy was not related to the theoretical variables at all, implying that monogamous behaviour in the context of the study was probably accounted for by factors other than what the theories of reasoned action and planned behaviour could explain.

The results of this study highlighted the importance of attitudes in shaping intentions, as found by other African authors (for example, Molla et al., 2007; Skinner, 2000). The implication of this finding is that HIV/AIDS prevention programmes must place more emphasis on attitude-changing interventions in order to influence safer sex practices and related preventive behaviour. A useful method in training interventions would be to design a persuasive health messaging framework aimed at increasing positive attitudes towards condom use and HIV testing. Persuasive communication has been found to be effective as a method of increasing people's favourable attitudes and intentions towards condom use in the future (Albarracin et al., 2003). The same persuasive communication techniques to build health-promoting attitudes can be used in respect of other HIV/AIDS preventive behaviours.

The most effective use of communication strategies to change behaviour is suggested by Fishbein and Yzer (2003). Fishbein and Yzer recommend that communications targeting beliefs in behaviour change interventions should first determine whether the target behaviour is subject to attitudinal, normative or efficacy (control) considerations or combinations thereof. This should lead to the identification of a number of behavioural, normative or control beliefs that distinguish between people who do or do not engage in the behaviour of interest, so that it is known which beliefs are highly correlated with the intention or behaviour. It will then become clearer which of these beliefs should be targeted by the communication messages. This method ensures that practitioners do not waste time and resources in changing beliefs that are not salient in the target population.

The foregoing discussion shows that although attitudes predicted health behaviour intentions, the theories of reasoned action and planned behaviour were not very successful in explaining health behaviour intentions in a sample of working adults who participated in the study. The

implications of the findings in relation to behaviour change over time are discussed next.

7.1.2 Did the Theory-Based Intervention Change Health Behaviour over Time?

The second objective of the study was to investigate the effect of a theory-based (TRA/TPB) workshop on the health behaviour of participants over time. It was hypothesised that the theory-based intervention would result in health behaviour change over a six month period. It became clear from the results that the theory-based workshop did not have an effect on condom use, HIV testing or monogamous health behaviour of participants at one month and six months after the intervention. As observed in the theory-based workshops, most participants did not consider condom use and HIV testing to be necessary to their circumstances, as they considered themselves to be in established sexual relationships and faithful to their partners¹. Being in steady relationships means that participants may not have found the message of the workshops very useful.

The finding suggests that AIDS education workshops have to be sensitive to the maturity level of the researched populations, so that interventions can be tailored to their needs and circumstances. This emphasises the need to perform thorough elicitation interviews to help understand and

¹ Qualitative data (for example barriers to behaviour change) are presented in the discussion chapter and not the results chapter because the main aim of this thesis was to statistically test the TRA/TPB model for its predictive value in behaviour change in the workplace. Although the gathering of qualitative data did not form part of the initial aims of the study, they are useful to inform the discussion on why the model did not inform behaviour change in this group. The qualitative data was analysed using content analysis.

ascertain the needs of the target population. An understanding of the unique circumstances of the target population would be useful in the design of a customised persuasive health messaging framework. The issue of whether intervention type made a difference to health behaviour at follow-up assessments is discussed next.

7.1.3 Did Intervention Type Contribute to Health Behaviour Change?

The third objective of the study, namely to establish if there would be significant differences in health behaviour between the TRA/TPB group and the information-only group at one month and six months after intervention, could also not be reached. The results showed no significant differences in condom use and HIV test seeking behaviours at one month and six months post-intervention. This finding suggests that the type of intervention received (namely, only information versus a TRA/TPB workshop) did not have an effect on the condom use and HIV testing behaviours of the sample. As the analysis did not focus on the content of the workshops, it was not possible to determine which aspects of the workshops did or did not have relevance to condom use and HIV testing health behaviours. Only monogamy health behaviour at Time 2 (one month after the health behaviour workshops) was significantly different between the two groups. This implies that intervention type had an effect on monogamous behaviour. The information-only group had a higher mean than the TRA/TPB group, which is a sign of the impact that the facilitation input had on people's monogamy intentions and, subsequently, behaviour.

In the next section, the possible barriers that could stand in the way of behaviour change in terms of condom use, HIV test seeking and

monogamous behaviour are explored with special emphasis on the barriers mentioned by participants in the elicitation study, as well as intervention workshops.

7.2 WHY THE THEORIES OF REASONED ACTION AND PLANNED BEHAVIOUR MAY NOT HAVE WORKED: ANALYSIS OF BARRIERS TO BEHAVIOUR CHANGE

During the intervention workshops, participants expressed certain beliefs which could make it difficult for them to form preventive health behaviour intentions or engage in appropriate health behaviour. A more intense understanding of these beliefs and how they influence behaviour is going to be essential if health psychology is to design interventions to counter the barriers posed by these beliefs. Barriers related to all three health behaviours are identified, and proposals on how psychological interventions can be used to counter each set of barriers are made below.

7.2.1 Condom Use Barriers

Beliefs about condoms that were identified as barriers can be categorised in four themes: sensation-reduction, trust, cultural beliefs and safety concerns. The condom use barriers identified in the study are discussed per theme in more detail below.

7.2.1.1 Sensation-reduction

The most prevalent belief in all the workshops was that sex with a condom “is not real”, and that one was better off not using condoms. It was mainly male participants who brought up the pleasure barrier, and they mentioned it specifically in the context of established relationships. They,

however, did not seem to have a problem with using a condom “outside”, meaning that only when having casual sex with a person outside one’s steady relationship is condom use acceptable. They tended to believe that condom usage was not necessary for people in stable and established relationships. A similar finding was made by Bogart et al. (2000) and it shows the importance of considering relationship type when designing condom use interventions that will have a desired impact.

7.2.1.2 Trust

Issues related to trust in relationships were prominent during condom use discussions. A dominant belief was that using a condom was admission that one “had something to hide” or “could not be trusted”. This belief, which was also brought up in the context of established relationships, points to how communication problems in relationships can be a barrier to safer sex practices. It became clear during some of the workshops that condom use was a taboo in some established relationships. Some people felt that suggesting condom use in a relationship where one had not been used before could arouse suspicion that the initiator of the suggestion had been engaging in sexually risky behaviour. It seemed that participants were more comfortable discussing condoms in casual or new relationships. Another observation made was that people in sexual relationships seemed to create an imaginary “cut-off line” beyond which they stop worrying about HIV infection and decide to stop using condoms, even when the HIV status of the partner is unknown. It is as if they reach a point of “condom fatigue” when they feel that a relationship has matured and they can trust each other.

7.2.1.3 Cultural Beliefs

Some of the beliefs could be described as culture-driven such as the belief that sex without a condom is what brings a couple “closer”, thus creating a stronger relationship. This is akin to a belief among Rwandans that the exchange of body fluids during sexual intercourse represents the “gift of self”. Therefore, the use of condoms may be construed as “blocking” this gift (Van Dyk, 2001a). A similar belief is that it is acceptable for a man to have more than one sex partner, as it is “natural” for a man to “spread his seeds”. These are examples of beliefs that may be entrenched in people’s collective unconscious that may encourage sexually risky behaviour and be difficult to change. It is essential to heed Kippax and Crawford’s (1993) recommendation that researchers familiarise themselves with the cultural contexts in which sexual behaviour is practised as such an understanding would ensure the delivery of interventions which would not alienate recipients.

7.2.1.4 Safety concerns

Some of the participants expressed the fear that condoms could not be relied on as they had a poor safety record, therefore “you might as well not use one”. While condom failure is a real possibility, it seems people who are reluctant to use condoms tend to give it more prominence than necessary. This tendency may obscure the benefits of condom use, which have been proven to outweigh their limitations.

A closer examination of these condom use barriers show that they are related to trust and communication issues in relationships, beliefs entrenched in people’s cultural beliefs which may be difficult to change and ignorance of facts about HIV transmission and condoms. The most appropriate intervention to help people dispute these beliefs can be achieved by framing persuasive health messages as well as employing

some of the cognitive behavioural techniques as used in the TRA/TPB workshops in this study.

Suggestions on how interventions to address condom use barriers can be designed are presented next.

7.2.1.5 Interventions to address condom use barriers

From what has been learned in the conduct of this research, the imparting of unequivocal biomedical facts about HIV/AIDS and persuasive health messaging (Albarracin et al., 2003; Monahan, 1995; Witte, 1995) can be useful in getting people to think deeply about the meaning of some of the beliefs they hold and how the maintenance of these beliefs can hamper AIDS-preventive behaviour.

Fact-based information about HIV/AIDS by qualified persons is the first thing that is needed to help people gain the knowledge to help them discern myth from fact. For example, the concern about the safety of condoms may be addressed with accurate information on how to use condoms as well as the use of prophylactic treatment in cases of condom failure.

Once people have the correct knowledge it would become easier to frame persuasive health messaging (Witte, 1995) to modify their beliefs. Some of the condom use barriers raised in the workshops can be obviated with good communication in sexual relationships. For this reason, AIDS education interventions must include training on communication in relationships to help people develop necessary skills such as negotiating condom use and related sexual health issues. The health-protective sexual communication (HPSC) method recommended by Van Der Straten, Catania & Pollack (1998) for new sexual encounters would be a useful addition to the persuasive health messaging framework for AIDS education used in this study, as its use would teach some of the

skills necessary in negotiating safer sex practices. The HPSC method, which places most emphasis on impression management, self-regulation and sexual assertiveness, teaches trainees to talk to potential sex partners about the following issues before having sex with them:

- the number of past sex partners;
- the fact that there would be no sexual intercourse unless a condom is used;
- the need to get tested for HIV before having sex (without a condom); and
- the new sex partner's history in terms of sexually transmitted infections, injected substances, homosexuality, birth control and other issues relevant to sexual health.

The HPSC should be adapted for people in steady relationships, in order to enable communication on matters such as introducing condom usage, seeking HIV testing or committing to each other. Teaching HPSC in AIDS education programmes can facilitate the development of openness and trust in sexual relationships, so that couples can learn to talk openly about various topics, such as when to introduce condoms into the relationship and when to seek HIV testing.

For more culturally entrenched beliefs, the persuasive health messaging may take the form of discourse analyses of the meanings that people in different communities in Africa ascribe to issues such as intimacy in sexual relationships and beliefs about male sexuality. An understanding of the social discourses around intimacy in sexual relationships and male sexuality would help in structuring persuasive communications to alter those discourses. As beliefs rooted in tradition are closely related to people's sense of who they are, cognitive restructuring techniques may

not be appropriate, as their questioning nature may be experienced as confrontational and disrespectful of people's sense of identity.

7.2.2 HIV Testing Barriers

Beliefs about HIV testing that constituted barriers mainly reflected the following themes: fear of social stigma associated with testing positive for HIV, beliefs in urban legends and impaired communication in relationships. These themes are discussed in more detail below.

7.2.2.1 Fear of Social Stigma

The fear of knowing one's own HIV status was prevalent during the workshops. Participants expressed views suggestive of negative imagery of what happens if people test positive for HIV, for example fears of dying alone, being rejected by loved ones and emotional disorders. This fear of testing could be linked to the social stigma surrounding HIV/AIDS which is prevalent in South African society and acts as a barrier to HIV prevention strategies (Luseno & Wechsberg, 2009; Van Dyk & Van Dyk, 2003a; Visser et al., 2009). HIV/AIDS stigma is maintained by the association of HIV transmission with stigmatised behaviours (for example, multiple sexual partners) and marginalised groups such as sex workers (Stephenson, 2009). Negative imagery associated with social exclusion was identified in the workshops as being one of the factors that discourage HIV testing behaviour. Reduction in HIV stigma has been found to be a facilitator of HIV test-seeking behaviour (Hutchinson & Mahlalela, 2006). Therefore, efforts to reduce stigmatising beliefs might cause a rise in HIV testing behaviour.

An interesting observation made in some of the workshops was that some participants, especially women, thought it was best not to know – or not

to disclose - one's own HIV status, as this would increase the danger of social isolation. Fear of stigma in African contexts seems to be a fear of isolation. For example, Van Dyk and Van Dyk (2003a) found that fear of rejection by loved ones and the community and fear of discrimination by health professionals were some of the factors that reinforced the fear of stigma. This could be attributed to the collective nature of African societies. The collective nature of African society, as embodied in the ancient philosophy of *ubuntu*, means that an individual cannot separate himself from the collective. Loosely translated, *ubuntu* means: "I am because we are – I can only be a person through others" (Mbigi, 2000, p.6). Mphahlele (2002) refers to this quality of communalism as *African humanism*, which means that people find fulfilment not as separate individuals but within the family and community. Mbigi further clarifies the point by paraphrasing Desmond Tutu's characterisation of this philosophy as follows: "...The solitary human being is a contradiction in terms, and therefore you seek work for the common good because your humanity comes into its own in community, in belonging" (Mbigi, 2000, p. 7). The embeddedness of the African psyche in collectivism could account for the difficulty that a lot of people in African societies might have with regard to knowing and disclosing their HIV-positive status, as disclosure carries the risk of being excluded from the collective of which they are a part. The stronger external locus of control rooted in collectivism seems to influence people's reactions to the AIDS epidemic in Africa, a factor that the theories of reasoned action and planned behaviour cannot explain.

7.2.2.2 Belief in Urban Legends

Some participants believed that it was dangerous to encourage HIV testing in South African society, as knowledge of a positive HIV status encouraged revenge infections - that is, the tendency of some HIV-infected people to intentionally and maliciously spread the virus. The

origin of this belief is unclear. It could be one of the urban legends that reflect the fears that people have about knowing their HIV status, and is possibly rooted in the stigmatising attitudes some sections of the population have towards people living with HIV and AIDS. Such beliefs are an indicator of the need to educate communities about HIV and AIDS, as education has been found to mediate stigmatising attitudes (Kalichman & Simbayi, 2004). It is likely that exposure to correct information about HIV and AIDS is what creates a climate for such urban legends and unfounded beliefs to thrive, and the disputing of faulty beliefs through educational interventions would lessen the impact of unfounded urban legends and conspiracy theories such as this one.

7.2.2.3 Impaired Communication in Relationships

The awkwardness of introducing the subject of HIV testing, either in an intimate relationship or in relation to friends and colleagues, also created a barrier that intervention programmes must address. Workshop participants expressed fears that raising the issue of HIV testing with a partner might be construed as a “confession” that one has been unfaithful, or that suggesting HIV testing to a colleague who “shows symptoms” might be judgemental and alienating. For this reason, talking about HIV testing does not seem to come naturally to most people.

Suggestions on possible interventions to address HIV testing barriers are presented next.

7.2.2.4 Interventions to address HIV testing barriers

To address the fear of social stigma as barrier to HIV testing, AIDS education programmes need to focus beyond empowering individuals to cope with social stigma. While teaching people to cope with stigma is

important, it is even more important to educate social groups about the disadvantages of discrimination and the rights of people who test positive for HIV. Persuasive health messages addressing the fear of isolation and related barriers have to be designed to make AIDS education programmes more effective. The persuasive health messages will have to raise people's awareness of the benefits of HIV testing, such as the mobilisation of access to treatment resources and support networks. The education of the public in managing the consequences of stigma must be accompanied by the education of health professionals in communicating HIV test results. Such education is essential as some health professionals have been found to be judgemental, emotional and impersonal in communicating HIV test results (Hult, Maurer & Moskowitz, 2009). Van Dyk and Van Dyk (2003a) also found their participants' perception of lack of confidentiality among health professionals to be an inhibiting factor. Basic human rights education should address the problem of social stigma.

Reasons behind the urban legends that people believe require exploration. The influence of urban legends can be countered by exposing people to accurate information about the benefits of HIV testing. To address the communication problems that make it difficult for people to talk about HIV testing, it would be useful to include communication skills in different contexts in HIV/AIDS education curricula. That would require an understanding (from elicitation interviews) of relationship communication issues that can be addressed through specific health message frames as proposed by Witte (1995).

7.2.3 Monogamy Barriers

The only two barriers to monogamy identified in the workshops were perceptions about the desirability of sex partner variety and the uncontrollable male sexual urge.

Some participants expressed the belief that it was desirable, perhaps inevitable, to have multiple partners either simultaneously or serially. This belief could constitute a barrier to monogamy, as it encourages behaviour that is known to increase the spread of the HI virus. In a study in two Eastern Cape townships Skinner (2000) found permanent monogamy to be so stigmatised that he discarded it as a variable for his study. Skinner substituted permanent monogamy with serial monogamy, instead.

A related belief, which is discussed in detail under condom use barriers above, was the perception of an insatiable sexual appetite in men, and that male promiscuity was more tolerable. This barrier was also influenced by lack of trust in relationships as epitomised by a male participant's assertion – using the analogy of a spare wheel in a motor vehicle – that it helps to have an additional partner “...*in case she dumps you*”. These observations add relevance to Kippax and Crawford's (1993) emphasis on the importance of understanding the cultural context of sexual behaviour. Adapting theory-based interventions to fit in with the beliefs shaped by cultural contexts of recipients would make them more successful.

Suggestions on addressing monogamy barriers are presented next.

7.2.3.1 Interventions to address Monogamy Barriers

An analysis of monogamy barriers indicates that the beliefs on which they are based may be rooted in social discourses in some South African communities. These discourses, and the beliefs they shape, influence the kind of sexual practices people adopt. A thorough understanding of these discourses will make it possible to design appropriate health messaging frames that will target the thought patterns that maintain risky sexual practices. That understanding is lacking currently.

An interesting observation about these health behaviour barriers is that they were identified only during the intervention workshops and could be

related to the ideas expressed in the elicitation interviews. None of them were identified through the analysis of quantitative questionnaires. This highlights the limitation of TRA/TPB research observed by Dutta-Bergman (2005) that exclusive focus on cognitive processes precludes affective processes involved in sexual decision-making. Interventions to address these barriers to HIV/AIDS health behaviour are crucial if health promotion interventions are to work. Well-thought-out interventions will definitely fail if they do not accommodate or fit in with the pre-existing modal salient beliefs held by their potential recipients. As will be suggested in the next section, the identification of barriers should form a part of elicitation studies as this will ensure that they are addressed in interventions.

The next section makes suggestions on how the theories of reasoned action and planned behaviour can be applied in South African workplace.

7.3 SUGGESTIONS FOR THEORY-BASED HIV/AIDS INTERVENTIONS IN THE SOUTH AFRICAN WORKPLACE

As the findings of this study have shown, an intervention based on the theories of reasoned action and planned behaviour in their unadulterated form did not result in behaviour change in a sample of working adults in South Africa. The following suggestions are made for the design of interventions in a South African workplace.

7.3.1 Elicitation Interview

The elicitation interview can be done differently. Ideally focus group interviews could be used as this would enable researchers to probe and analyse some of the prevailing discourses that inform the thinking of the researched. If questionnaires are used, a useful approach would be for researchers not to specify the health behaviours that will form the focus of

the research as was done in this study. The elicitation questions should, instead, be non-directive with the respondents specifying relevant behaviours. This would compel the researcher to focus only on the health behaviours that the researched population consider salient. While individual modal salient beliefs are still important, it is also essential to identify group modal salient beliefs in the form of discourses that drive behaviour in that group. The elicitation interview should also strive to identify barriers to health behaviour in the researched group and not only the researched individuals as was done in this study. In addition to the questions that Ajzen and Fishbein (1980) propose for modal salient beliefs the following questions could be added:

- (a) *With regard to (health behaviour of interest, e.g AIDS prevention) what do people in your community (that is, specific social groups to which you belong) consider the advantages of (specific actions, e.g using a condom)?*
- (b) *With regard to (health behaviour of interest) what do people in your community consider the disadvantages of (specific actions)?*
- (c) *With regard to (health behaviour of interest) what factors do people in your community believe make it difficult to perform (specific actions)?*
- (d) *With regard to (health behaviour of interest) what factors do people in your community believe make it easy to perform (specific actions)?*

Questions (a) and (b) would tap into the beliefs that the collective consider relevant, therefore should form the focus of workshop interventions. Questions (c) and (d) would tap into the barriers (and facilitators) that the group experience so that these would be addressed in the group intervention as part of developing perceived behavioural control. These questions would tap into the social discourses in which sexual practices in

the researched population are embedded. That would make it easier to design persuasive health messages directed at beliefs that maintain risky behaviour.

7.3.2 Deviation from the Compatibility Principle

As this study has shown, strict adherence to Ajzen and Fishbein's methodology compels researchers to use quantitative methods and to ask individual-focussed questions in questionnaires. In African settings it may be necessary to violate the compatibility principle as suggested by Kaiser et al. (2007) as the inclusion of qualitative methods such as discourse analysis-type enquiry during the elicitation phase can deepen researchers' understanding of the researched, thereby making their interventions more relevant. A more appropriate methodology would be a combination of quasi-experimental and qualitative techniques. While this would ensure the collection of quantitative data as done in this thesis, it will also enable researchers to probe and observe nuances that quantitative data tend to miss.

7.3.3 Persuasive Health Message Frames

The persuasive health messaging techniques in workshops would have to be adapted to help people re-examine some of the discourses that inform their beliefs in the context of the AIDS epidemic prevalent in Africa. The persuasive health message frame for such discourse analyses could be phrased as follows:

“Considering that we live in an age of the AIDS epidemic, we need to acknowledge that some of the beliefs that guided our behaviour over generations may no longer be relevant as they encourage behaviour

that spreads AIDS. Let us identify those beliefs and examine their relevance for the times that we live in. What are those beliefs?”.

Persuasive health message frames like this one would raise people's awareness of the need to keep re-formulating and negotiating the values that guide their behaviour. From such message frames would emerge reappraisals of the beliefs that people live by and the reformulation of those beliefs and, by implication, the behaviours shaped by those beliefs. The advantage of encouraging people to examine their own discourses is that they would be involved in authoring the narratives that will guide their behaviour. The effect is likely to be more persuasive than prescriptions by an expert, who, in some cases, would be a person from outside the target community.

The time spent on persuasive communication techniques is an important consideration. The theory-based workshops in this study lasted only four to five hours. It is unlikely that participants had adequate time to reflect on the persuasive messages and internalise them. The outcome could have been different had the workshop sessions been spread over a number of weeks as done in the McCamish et al. (1993) study. It is essential, therefore, that health behaviour interventions employing persuasive health messaging not be limited to a once-off session but be spread over a number of sessions.

7.3.4 Peer Education and other Group-level Interventions

The shortcomings of the individualist nature of the theories of reasoned action and planned behaviour have already been reported (Dutta-Bergman, 1995; Kippax & Crawford, 1993). These shortcomings are likely to be more glaring in collectivist cultures such as we have in South Africa (Mbigi, 2000; Mphahlele, 2002) where individual behaviour is often motivated by the desire to belong or to be accepted by the social grouping

of which the individual is a part. This implies that in a mainly collective society like South Africa peer education and other group-level interventions can be effective as they complement the social fabric that is founded on social networks and social influence. An apposite example of how collective action has been used to draw people together in common purpose was the acts defiance against repressive government policies in the past. These collective actions took the form of peer influence in which individuals who defied protest actions such as boycotts tended to be marginalised. This form of collective action can be translated to peer influence in HIV/AIDS education.

The concept of subjective norms could be used to reinforce the collective philosophy of ubuntu (Mbigi, 2000) by emphasising the care and support that should be extended to significant others who test positive for HIV. Also, when people are encouraged to formulate health-protective intentions in a workshop, as done in this thesis, the intentions can be formulated as collective intentions (assuming participants are in some form of an established relationship such as co-workers, a church group, or a burial society). Forming collective intentions would create motivation to comply with peer expectations (subjective norms) for the individual members so that a person who behaves contrary to the group's expectations would be risking isolation by the group.

The limitations of the study and recommendations for further research will now be discussed.

7.4 LIMITATIONS OF THE STUDY

The research culminating in this thesis is not without limitations. The limitations of the study and recommendations on how it can be used to generate further research in this field or improve current research are explored in this section.

7.4.1 Circumstantial Problems

There were a few incidental problems that plagued the study in the beginning. The original plan was to use employees at the author's place of employment as the TRA/TPB group, while the comparison group would have been employees in other government departments who took part in HIV/AIDS education programmes presented by the Public Administration Leadership and Management Academy (PALAMA), then known as the South African Management Development Institute (SAMDI). This is a government agency responsible for all training in government departments. Unfortunately, it was discovered at the time of making arrangements that all HIV/AIDS education programmes in government departments had been discontinued two years previously. This forced the researcher to source all participants, including the comparison group, in his own workplace.

The second problem was in relation to the facilitator for the TRA/TPB group. The initial plan was that the group was going to be facilitated by an Employee Assistance Programme (EAP) facilitator responsible for HIV/AIDS programmes. The facilitator was trained by the researcher in group facilitation, especially the facilitation customised to the methodology for this study. The EAP consultant was removed to other projects after facilitating only one group session. The researcher had to conduct his own facilitation.

Another weakness was the size of the groups for the TRA/TPB group. The original plan was that groups were going to be restricted to 10 participants per workshop. The training programme from which participants were sourced was approaching the end, and it was going to be difficult to find them once they returned to their workplaces. This compelled the researcher to increase group sizes to 20 people per workshop, which made facilitation and group participation difficult. The other problem was the high attrition rate, especially at Time 3. Most of the participants who

had committed their availability became difficult to locate, as operational requirements moved them to other jobs or even locations.

The amount of time available to conduct the theory-based workshops was also a problem. The workshops were conducted during working hours and the availability of participants had to be negotiated with supervisors. The nature of the barriers that emerged during the workshops required more time for the persuasive communication techniques to be effectively applied. With the four-to-five hour once-off sessions, barriers could only be identified and discussed without an in-depth exploration of the discourses that may have shaped them. Spreading the workshops over a four week period or longer would have enabled participants to process and internalise the persuasive health messages required to overcome the identified barriers.

7.4.2 Methodological Issues

The study had a few methodological limitations. The first limitation is that the study used a convenience sample of employed adults. The weakness of using such a sample is that it is likely to consist of people who are homogenous, thus creating bias in terms of the three health behaviours studied – for example, in the case of this study, most of the participants were in established relationships. It has been found that people in stable relationships engage in less risky behaviour, as they tend to feel less vulnerable (Bajos, Ducot, Spencer, Spira & The ACSF Group, 1997; Sheeran & Orbell, 1998). In addition, the use of a convenience sample of working adults makes it difficult to generalise the findings to other sub-populations within South African society, for example the unemployed, youth, poorly educated and rural sub-populations.

A further limitation is that it was not possible to conduct proper reliability and validity tests on the questionnaires used. The only way to ensure

internal validity was to design the TRA/TPB measure strictly according to the guidelines prescribed by Ajzen and Fishbein, as contained in a manual authored by Francis and colleagues (2004).

A weakness linked to the strict adherence to Ajzen and Fishbein's data-gathering method, which became more apparent during the analysis of results, is that no additional qualitative data was gathered during the questionnaire administration phase. The only qualitative data that could be used emerged during the TRA/TPB workshops, as well as the analysis of elicitation study questionnaires. A lot of additional information would have been gathered if qualitative data had been collected during the questionnaire stage. The addition of qualitative data during data collection would have enriched the findings, as it would have added other nuanced dimensions on attitudes, subjective norms and perceived behavioural control, which quantitative data alone failed to glean.

The fact that the analysis of results focused exclusively on statistical tests can also be seen as a limitation. It would have been useful if the content and process of the workshops were also analysed, so that it would be known which persuasive health messages had the most influence on health behaviour. As the researcher was the sole facilitator, it was not possible to keep a record of the group process. Content could only be recorded on flip charts that were used during the facilitation.

Further, the study did not control for other factors that may have had an impact on health behaviour such as sexual relationship type and past sexual health behaviour practices. Controlling for such factors would have excluded the participants who thought the workshop was not necessary as they perceived themselves to be at low risk of HIV infection.

Finally, on hindsight, the elicitation interview could have been done in a focus group format. Analysing the elicitation interview questionnaires created an impression that some people did not give much information because of the burden of writing. A focus group discussion would have

created an opportunity to probe and discover contextual nuances that are so easily lost in questionnaires.

7.5 RECOMMENDATIONS FOR FUTURE RESEARCH

The study has proved that there are many questions about health behaviour change that the science of psychology still needs to explain, especially in African contexts. For this reason, this study delineates scope for further research as follows:

1. The theories of reasoned action and planned behaviour, as well as other health behaviour theories, need to be researched further in the South African context. To minimise the methodological problems noted above, such studies will have to incorporate quasi-experimental and qualitative designs. Quantitative designs alone may not be adequate as a lot of contextual information may be missed.
2. It is possible that the theories of reasoned action and planned behaviour, which are predictive theories, may not have been entirely appropriate for the kind of research this study undertook. Study participants were fairly diverse, and it is likely that this contributed to variation in their perception of relevance of the research, as well as their readiness to change. This possibility suggests that there is a place for stage theories of health behaviour, such as the trans-theoretical model (Prochaska & DiClemente, 1983) in behaviour change research. Using stage theories would require that the stage of change or maturity level of the studied sample be assessed prior to intervention, so that the intervention would be designed to address the developmental stage needs of the subjects. This means that the elicitation interview phase of data collection would tap into health behaviour developmental issues in respect of the health behaviours being studied. This would enable researchers to understand the health behaviour maturation level of the

sample and use this information to design interventions that are appropriate for the sample.

3. The small effect of theoretical variables on health behaviour intention observed in this study could indicate the lack of sufficiency of the theories as reported by other researchers (for example, Conner & Armitage, 1998; Landridge et al., 2007; Rhodes & Courneya, 2003). This finding, coupled with the qualitative information that emerged during the intervention workshops, could indicate that South African research needs to explore the extension of the theories of reasoned action and planned behaviour to include variables other than attitudes, subjective norms and perceived behavioural control.
4. Elicitation interviews must also attempt to identify psycho-social barriers to health behaviour change. Identifying modal salient beliefs that drive health behaviour without knowing barriers that could inhibit health-protective behaviour provides a skewed and incomplete understanding of beliefs that motivate intentions and behaviour. In addition to questionnaires, the elicitation interview could use a focus group method as this will enable researchers to probe for nuances that questionnaires may not pick up.
5. The field of psychology needs to acknowledge its limitations with regard to health behaviour change. Psychology lacks the communication knowledge necessary for the design of health campaigns. As discovered during the research for this thesis, the persuasive health messaging techniques from communication science can be useful in behaviour change interventions. In addition, the field of education is well-versed in adult education approaches that could be useful in health education. Research collaboration among these disciplines is essential in the development of a science of behaviour change.

6. The focus of future studies should also be on factors that determine sexual health behaviour in African contexts, which the theories of reasoned action and planned behaviour, as well as other health behaviour theories, do not explain. Knowledge generated from such research would be useful in developing theoretical models on which the design of interventions can be based.
7. The sample used in this study reported low levels of risky sexual behaviour in the elicitation interview. Future studies should replicate this study in high-risk groups such as the youth, prison populations, sex workers, long-distance truck drivers and migrant workers over longer periods of time.

7.6 SUMMARY

This thesis could not confirm the effectiveness of a health promotion intervention based on the theories of reasoned action and planned behaviour. There were no significant differences between participants who received a theory-based intervention and those who received a lecture-type, information-only intervention. The findings of the study show the limitations of applying a theory developed in an individualised society and applying it in an African context where people's worldviews are rooted in collectivism. Adherence to the quantitative methodology prescribed by the original theory resulted in a lot of qualitative data, in the form of psycho-social barriers, being missed. The data gathered from the study was useful in suggesting how the theories of reasoned action and planned behaviour can be applied in a South African context as well as identifying opportunities for further research in this field.

The findings of this study should be interpreted carefully taking into consideration the context in which the interventions were applied – that is, a six hour workshop with a group of people who were not at high levels of

sexually risky behaviour. It cannot be concluded that the theory-based intervention was not effective. The low level of high-risk sexual behaviour in the sample could imply that there was not much health behaviour to change. This finding, therefore, cannot be generalised to high-risk sexual behaviour groups.

The conclusions drawn from this study are reported in the next chapter.

CHAPTER 8

CONCLUSION: REFLECTION ON LESSONS LEARNED

This study showed that an intervention derived from the theories of reasoned action and planned behaviour – a combined model that, judging by some papers at the annual congresses of the Psychological Society of South Africa, has a recognisable following in South Africa – was not successful in changing health behaviour in a group of government employees. This part of the thesis is a reflection on the lessons I learned and wish to share with other researchers interested in this and other behaviour change models.

A possible explanation for the findings of this study could be that theoretical models formulated in the developed world may not apply in African contexts. The theories of reasoned action and planned behaviour were formulated in North America in the 1980s, and were perfected through research conducted mainly with *undergraduate university students* – a sub-population that, according to Weaver (2008), is not representative of the mainstream American society, as it tends to have “higher than average education, younger age, and a greater proportion of Whites” (p. 780). The research for this thesis, on the other hand, was conducted in South Africa with a sample of working adults at the workplace. The sample used incorporated the diversity of the South African society in terms of culture, race, geographic location and education. The people to whom an intervention based on the theories of reasoned action and planned behaviour was applied were different from the people in the society where the theory originated.

The theory of reasoned action has been criticised for being focused exclusively on individuals and neglecting the social groups of which those

individuals are members (Dutta-Bergman, 2005). This exclusive focus on an individual person, according to Kippax and Crawford (1993), means that the theory neglects the collective nature of sexual behaviour. By this Kippax and Crawford mean that sexual behaviour occurs within an interpersonal and cultural milieu which is shaped by certain discourses that influence people's sexual behaviour. In addition, Kashima et al. (1993) in a study of cooperative behaviour in the context of condom use, criticised the causal structure of the theory of reasoned action and the theory of planned behaviour as being tailor-made for individual behaviour, thus not accommodating dyadic behaviour of which sex is an example.

These criticisms are apposite for this study and could explain why the theory-based intervention did not produce behaviour change. Participants completed questionnaires whose questions were directed at an individual person and the intervention workshop placed emphasis on individual responsibility in changing risky sexual behaviour. The intervention, by virtue of strict adherence to the theory, failed to consider Mphahlele's (2002) statement that people in African contexts find fulfilment in those around them, therefore they will always use others (important others, that is) as a cue to guide their behaviour. Sensitivity to this reality may have made the handling of barriers different in that the intervention would have addressed the barriers at a group, rather than an individual, level.

In view of the foregoing discussion, a befitting question to ask is: Should we (Africans) be importing foreign behaviour change theories to address the problem of HIV/AIDS in our societies? The direct "importation" of a theory of behaviour change might be problematic, as behavioural theories are formulated by people with specific worldviews and epistemological influences. Writings in critical health psychology (Adams & Salter, 2007; Bunton, 2006; Hepworth, 2006; Prilleltensky & Prilleltensky, 2003) caution that theories in health psychology are neither neutral nor acontextual - they are located within a cultural milieu and political context, and they therefore have specific ideological leanings that must be

considered in their application. Bunton (2006), in particular, is scathing when he warns against the tendency of health psychology to rely on “over-simplistic and over-deterministic models in which action emanates from individuals, not the social or economic structures they inhabit” (p. 343). Bunton’s critique highlights a limitation of traditional health psychology, which he characterises as authoritarian, in that it uses ‘experts’ to turn individuals into “responsible (low-cost) citizenship”, meaning people who will exercise self-control and self-regulation in order to stay healthy, thereby creating less of a burden to the health system which is funded from public resources. To this critique may be added the fact that health psychology theories would have been researched in developed societies where health care funding and staffing are not a problem, and where the populace faces specific health issues which are unknown in other countries.

Health psychology in African settings, therefore, needs to complement a biomedical explanation of health, where the focus of intervention is the individual person with her/his beliefs, behaviours and physiological processes, with a more holistic approach that recognises connectedness to other people, places and spiritual worlds (Adams & Salter, 2007; Mphahlele, 2002). This implies that the practice of health psychology should take account of the broader socio-cultural and political contexts in which the users of its services exist.

The methodologies employed in data gathering and the intervention workshops in this study may also have been problematic as they were - in observance of the principle of compatibility - informed by the individual frame of reference on which the theories are founded. This strict adherence to the prescripts of the original theory resulted in important contextual information - that is, barriers - being missed. The elicitation study conducted at the beginning of the research was individual-based, thus missing out on the cultural nuances of the population, which a group-based elicitation study might have elicited. In an African context, where

people are more collectively than individualistically inclined, an elicitation interview that asks individuals to list the advantages and disadvantages of behaviour, as well as their significant others, and decide whether it would be easy or difficult to engage in a particular behaviour, may omit to pay attention to issues that the broader collective may consider to be important.

It needs to be asked whether “predictive” theories like the theory of reasoned action and the theory of planned behaviour should be “tailored” or adapted to African contexts or whether African health psychology should first study and understand African social contexts (beliefs, values and cultural norms that drive behaviour) and then allow relevant, Afrocentric theories to evolve from there. My own response is the latter view. However, the stage of maturity that South African health psychology is at requires that theories and methods that are evidence-based be used while evolving a health psychology that is *our* own. Rather than trying to explain *why* models from developed countries do not work or *how* they can be adapted to our circumstances, South African - and other African - health psychology should embark on rigorous quasi-experimental and qualitative research to test various evidence-based methods in our socio-cultural contexts. Relevant models should evolve from such research enterprises.

While health psychology in Africa is not yet at a stage where it has theories it could call its own, it would be useful not to discard existing theories because they are not entirely relevant. What will work in the interim is what Whaley and Davis (2007) term *cultural competence* in the way in which we apply psychological theories. Whaley and Davis broadly describe cultural competence as acknowledging the importance of culture, vigilance towards the dynamics that result from cultural differences, expansion of cultural knowledge and adaptation of interventions to suit the culturally unique needs of users of psychological services. This means that we should, where possible, reap the benefits of existing theories.

However, we need to be aware of the cultural nuances of behaviour in the context in which we work, as awareness of these nuances would enable us to adapt what is useable in those theories to our circumstances.

AIDS in Africa demands a collective responsibility more than individual responsibility. Only by cultivating collective responsibility through interventions that take advantage of the virtues of a collective societal culture can individual responsibility be maximised. It is clear from the findings of this study that emphasising individual responsibility alone will not achieve the goal of AIDS prevention. Interventions founded on individual-focus theories, therefore, may not be completely relevant in African contexts. Theories that will influence the development of group-level interventions are needed. The quest for a relevant, evidence-based approach to health promotion made me realise that psychology alone does not have all the answers. There is a need for psychology to collaborate with other social science disciplines in order to develop a body of knowledge that can contribute to health behaviour change. Most importantly, sexual health behaviour must be studied and understood in African contexts as total reliance on Western theories presents an incomplete picture or, as Manganyi (in Ratele, 2004, p.406) termed cross-cultural explanations, “intellectual tinkering” which produces “isolated interventions of the ‘Jim-comes-to-Jo’burg’ variety...”.

The road ahead is certainly a long one. May the journey be as exciting as it looks from here!

REFERENCES

- Abraham, C., Sheeran, P., Normsan, P., Conner, M., De Vries, N., & Otten, W. (1999). When good intentions are not enough: Modelling postdecisional cognitive correlates of condom use. *Journal of Applied Social Psychology, 29*, 2591 – 2612.
- Adams, G., & Salter, P. S. (2007). Health psychology in African settings: A cultural-psychological analysis. *Journal of Health Psychology, 12*, 539 – 551.
- Adendorff, T. (2005, July). HIV employees and the work place. *Management Today, 21*, 51.
- AIDS Foundation Africa. (n.d.). HIV/AIDS in South Africa. Retrieved June 26, 2007, from <http://www.aids.org.za/hiv.htm>.
- AIDS Law Project & AIDS Legal Network. (2001). *HIV/AIDS and the law: A resource manual*. AIDS Law Project and AIDS legal Network.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.). *Action control: From cognition to behavior*. Berlin: Springer-Verlag.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179 – 211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Engelwood Cliffs, NJ: Prentice Hall.
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions and perceived behavioral control. *Journal of Experimental Social Psychology, 22*, 453 – 474.

- Albarracin, D., McNatt, P. S., Klein, C. T. F., Ho, R. M., Mitchell, A. L., & Kumkale, G. T. (2003). Persuasive communication to change actions: An analysis of behavioural and cognitive impact of HIV prevention. *Health Psychology, 22*, 166 – 177.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behavior: A meta-analytic review. *British Journal of Social Psychology, 40*, 471 – 499.
- Bajos, N., Ducot, B., Spencer, B., Spira, A., & The ACSF Group. (1997). Sexual risk-taking, socio-sexual biographies and sexual interaction: elements of the French national survey on sexual behaviour. *Social Science and Medicine, 44*, 25 – 40.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behaviour change. *Psychological Review, 84* (2), 191 - 215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37* (2), 122 – 147.
- Beadnell, B., Baker, S. A., Gillmore, M. R., Morrison, D. M., Huang, B., & Stielstra, S. (2008). The theory of reasoned action and the role of external factors on heterosexual men's monogamy and condom use. *Journal of Applied Social Psychology, 38*, 97 – 134.
- Beck, A. T. (1991). Cognitive therapy: A 30-year retrospective. *American Psychologist, 46*, 368 – 375.
- Beck, A. T., & Weishaar, M. E. (1989). Cognitive therapy. In R.J. Corsini & D. Wedding (Eds.), *Current psychotherapies*. (pp. 285 – 320). Itasca: F. E. Peacock Publishers.
- Becker, M. H., & Maiman, L. A. (1975). Sociobehavioral determinants of compliance with health and medical care recommendations. *Medical Care, 13*, 10 -24.

- Boer, H. & Mashamba, T. (2005). Psychosocial correlates of HIV protection motivation among black adolescents in Venda, South Africa. *AIDS Education and Prevention*, 17, 590 – 602.
- Bogart L. M., Cecil, H., & Pinkerton, S. T. (2000). Intentions to use the female condom among African-American adults. *Journal of Applied Social Psychology*, 30, 1923 – 1953.
- Bogart, L. M., & Delahanty, D. L. (2004). Psychosocial models. In T. J. Boll (Ed.), *Handbook of clinical health psychology: Models and perspectives in health psychology* (pp. 201 – 248). Washington DC: American Psychological Association.
- Boldero, J., Moore, S., & Rosenthal, D. (1992). Intention, context and safe sex: Australian adolescents' response to AIDS. *Journal of Applied Social Psychology*, 22, 1374 – 1396.
- Bosompra, K. (2001). Determinants of condom use intentions of university students in Ghana: An application of the theory of reasoned action. *Social Science and Medicine*, 52, 1057 – 1069.
- Boyd, B., & Wandersman, A. (1991). Predicting undergraduate condom use with the Fishbein and Ajzen and the Triandis attitude-behavior models: Implications for public health interventions. *Journal of Applied Social Psychology*, 21, 1810 – 1830.
- Bramford, M. (1995). Health promotion in the workplace. In J. Kemm & A. Close (Eds.), *Health promotion: Theory and practice*. (pp. 301 – 317). Kent: Macmillan Press.
- Bryan, A. D., Aiken, L. S., & West, S. G. (1996). Increasing condom use: Evaluation of a theory-based intervention to prevent sexually transmitted diseases in young women. *Health Psychology*, 15, 371 – 382.

- Bryan, A., Ruiz, M. S., & O'Neill, D. O. (2003). HIV-related behaviors among prison inmates: A theory of planned behavior analysis. *Journal of Applied Social Psychology, 33*, 2565 – 2586.
- Bunton, R. (2006). Critical health psychology: Julie Hepworth. *Journal of Health psychology, 11*, 343 – 345.
- Bureau for Economic Research (2005). *The impact of HIV/AIDS on selected business sectors*. Bureau for Economic Research, Stellenbosch University.
- Campbell, C. (2003). *Letting them die: How HIV/AIDS prevention programmes often fail*. Cape Town: Double Storey / a Juta Company.
- Campbell, C.M., & Williams, B.G. (1996). Academic research and HIV/AIDS in South Africa. *South African Medical Journal, 86*, 55 - 60.
- Charalambous, S., Grant, A. D., Day, J. H., Pemba, L., Chaisson, R. E., Kruger, P., Martin, D., Wood, R., Brink, B., & Churchyard, G. J. (2007). Establishing a workplace antiretroviral therapy programme in South Africa. *AIDS Care, 19*, 34 – 41.
- Chen, W. W. (2001). The relationship between health education and health promotion. *American Journal of Health Education, 32*, 369 – 370.
- Christensen, L. B. (2001). *Experimental methodology*. Boston: Allyn and Bacon, Inc.
- Conner, M., & Armitage, C.J. (1998). Extending the theory of planned behaviour: A review and avenues for further research. *Journal of Applied Social Psychology, 28*, 1429 – 1464.
- Davies, A. (2004, July). Workplace health now business driven. *HR Future, 18* – 20.

- Department of Health. (2000). *HIV/AIDS/STD strategic plan for South Africa: 2000 - 2005*. Pretoria: Department of Health.
- DiClemente, R. J., & Peterson, J. L. (1994). Changing HIV/AIDS risk behaviours: The role of behavioural interventions. In R. J. DiClemente & J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioural interventions* (pp. 1 - 4). New York: Plenum Press.
- Downey, A. M., & Sharp, D. J. (2007). Why do managers allocate resources to workplace health promotion programmes in countries with national health coverage? *Health Promotion International*, 22, 102 – 111.
- Dutta-Bergman, M. J. (2005). Theory and practice in health communication campaigns: A critical interrogation. *Health Communication*, 18, 103 – 122.
- Eagle, G., & Brouard, P. (1995). AIDS education for health professionals. *South African Journal of Psychology*, 25, 21 – 26.
- Ellis, A. (1989). Rational-emotive therapy. In R.J. Corsini & D. Wedding (Eds.), *Current psychotherapies*. (pp. 197 – 238). Itasca: F. E. Peacock Publishers.
- Ellis, A. (2003). Cognitive restructuring of the disputing of irrational beliefs. In W. O'Donohue, J. E. Fisher & S. C. Hayes (Eds.), *Cognitive behavior therapy: Applying empirically supported techniques in your practice* (pp. 79 – 83). New Jersey: John Wiley & Sons Inc.
- Ewart, C. K. (2004). How integrative behavioural theory can improve health promotion and disease prevention. In T. J. Boll (Ed.), *Handbook of clinical health psychology: Models and perspectives in*

health psychology (pp. 249 – 289). Washington DC: American Psychological Association.

Feuerstein, M., Labbe, E.E & Kuczmierczyk, A.R. (1987). *Health psychology: A psychobiological perspective*. New York: Plenum Press.

Fishbein, M. (1993). Introduction by Martin Fishbein. In D.J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to aids preventive behaviour* (pp. xv – xxv). Oxford: Pergamon Press.

Fishbein, M, & Ajzen, I. (2005). Theory-based behaviour change interventions: Comments on Hobbis and Sutton. *Journal of Health Psychology*, 10, 27 – 31.

Fishbein, M. & Middlestadt, S.E. (1989). Using the theory of reasoned action as a framework for understanding and changing AIDS-related behaviours. In V.M. Mays, G.W. Albee & S.F. Schneider (Eds.), *Primary prevention of AIDS: Psychological approaches* (pp. 89 - 110). Newbury Park: Sage.

Fishbein, M., & Yzer, M. C. (2003). Using theory to design effective health behaviour interventions. *Communication Theory*, 13, 164 – 183.

Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS-risk behavior. *Psychological Bulletin*, 111, 455 – 474.

Fisher, W. A., & Fisher, J. D. (1993). A general social psychological model for changing AIDS risk behavior. In J. B. Pryor & G. D. Reeder (Eds.), *The social psychology of HIV infection*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Fisher, W. A., Fisher, J. D., & Rye, B. J. (1995). Understanding and promoting AIDS-preventive behavior: Insights from the theory of reasoned action. *Health Psychology*, 14, 255 – 264.

- Francis, J. L., Eccles, M. P., Johnston, M., Walker, A., Grimshaw, J., For, R., Kaner, E. F. S., Smith, L., & Bonetti, D. (2004). *Constructing questionnaires based on the theory of planned behavior: A manual for health services researchers*. Retrieved April 6, 2008, from <http://www.rebeqi.org/viewfile.aspx?itemsID=212>
- Giles, M., Liddell, C., & Bydawell, M. (2005). Condom use in African adolescents: The role of individual and group factors. *AIDS Care*, 17, 729 – 739.
- Glanz, K., Rimer, B. K., & Lewis, F.M. (2002). *Health behaviour and health education: Theory, research and practice*. San Francisco: Jossey-Bass.
- Goodwin, C. J. (2002). *Research in psychology: Methods and design*. New Jersey: John Wiley & Sons.
- Handelwang, B. (2008). *AIDS watch: A bi-monthly electronic briefing for the business community on developments in the field of HIV/AIDS*. Institute for Futures Research, University of Stellenbosch. Retrieved 16 February 2009 from <http://www.ifr.sun.ac.za>
- Harber, R. P. (2000). Expected impact of HIV/AIDS prevention activities. In E. Clark, & K.Strachan (Eds.), *Everybody's business: The enlightening truth about AIDS* (pp.11 -14). Bellville: Metropolitan Group.
- Harris, J. S., & Fries, J. F. (2002). The health effects of health promotion. In M. P.O'Donnell (Ed.), *Health promotion in the workplace* (3rd ed.) (pp. 1 - 22). New York: Delmar Publishers Inc.
- Hedden, S. L., Whitaker, D., Floyd, L., & Latimer, W. W. (2009). Gender differences in the prevalence and behavioural risk factors of HIV in South African drug users. *AIDS and Behaviour*, 13, 288 – 297.

- Heeran, G. A., Jemmott III, J. B., Mandeya, A., & Tyler, J. C. (2007). Theory-based predictors of condom use among university students in the United States and South Africa. *AIDS Education and Prevention, 19*, 1 – 12.
- Heeran, G. A., Jemmott III, J. B., Mandeya, A., & Tyler, J. C. (2009). Sub-Saharan African university students' beliefs about condoms, condom-use intention, and subsequent condom use: A prospective study. *AIDS and Behaviour, 13*, 268 – 276.
- Hepworth, J. (2006). The emergence of critical health psychology: Can it contribute to promoting public health? *Journal of Health Psychology, 11*, 331 – 341.
- Hobbis, I. C. A., & Sutton, S. (2005). Are techniques used in cognitive behavior therapy applicable to behavior change interventions based on the theory of planned behavior? *Journal of Health Psychology, 10(1)*, 7 – 18.
- Hooper, M. (2004) Employee wellbeing: A hard issue. *People Dynamics, 22*, 8 – 9.
- Hult, J. R., Maurer, S. A., & Moskowitz, J. T. (2009). "I'm sorry, you're positive": A qualitative study of individual experiences of testing positive for HIV. *AIDS Care, 21*, 185 – 188.
- Human Sciences Research Council. (2007). Measuring new HIV infections offers new insights [Media briefs 2007]. Retrieved July 5, 2007, from <http://www.hsrc.ac.za/module-pagesetter-printpub-tid-13pid315.phtml>.
- Huiskamp, A., King, L. J., & Hattingh, S. P. (2005). The rationale behind workplace health promotion. *Africa Journal of Nursing and Midwifery, 4*, 56 – 58.

- Hunter, M. (2007). The changing political economy of sex in South Africa: the significance of unemployment and inequalities to the scale of the AIDS epidemic. *Social Science and Medicine*, 64, 689 – 700.
- Hutchinson, P. L., & Mahlalela, X. (2006). Utilization of voluntary counselling and testing services in the Eastern Cape, South Africa. *AIDS Care*, 18, 446 – 455.
- James, S., Reddy, P., Ruiter, R. A. C., McCauley, A., & Van Den Borne, B. (2006). The impact of HIV and AIDS life skills programme on secondary school students in Kwa-Zulu Natal, South Africa. *AIDS Education and Prevention*, 18, 281 – 294.
- Jemmott, L. S., & Jemmott, J. B. (1992). Increasing condom use intentions among sexually active black adolescent women. *Nursing Research*, 4, 273 – 278.
- Jemmott III, J. B., Heeran, G. A., Ngwane, Z., Hewitt, N., Jemmott, L. S., Shell, R., & O'Leary, A. (2007). Theory of planned behaviour predictors of intention to use condoms among Xhosa adolescents in South Africa. *AIDS Care*, 19, 677 – 684.
- Kaiser, F. G., Schultz, P. W., & Scheuthle, H. (2007). The theory of planned behavior without compatibility? Beyond method bias and past trivial associations. *Journal of Applied Social Psychology*, 37, 1522 – 1544.
- Kalichman, S. C., & Simbayi, L. (2004). Traditional beliefs about the cause of AIDS and AIDS-related stigma in South Africa. *AIDS Care*, 16, 572 – 580.
- Kakoko, D. C., Astrom, A. N., Lugoe, W. L., & Lie, G. T. (2006). Predicting intended use of voluntary HIV counseling and testing services among Tanzanian teachers using the theory of planned behaviour. *Social Science & Medicine*, 63, 991 – 999.

- Kashima, Y., Gallois, C., & McCamish, M. (1993). The theory of reasoned action and cooperative behavior: It takes two to use a condom. *British Journal of Social Psychology*, 32, 227 – 239.
- Kasprzyk, D., Montano, D. E., & Fishbein, M. (1998). Application of an integrated behavioral model to predict condom use: A prospective study among HIV risk groups. *Journal of Applied Social Psychology*, 28, 1557 – 1583.
- Kaufman, M. R., Shefer, T., Crawford, M, Simbayi, L. C. & Kalichman, S. (2008). Gender attitudes, sexual power, HIV risk: A model for understanding HIV risk behaviour of South African men. *AIDS Care*, 20, 434 – 441.
- Kemm, J., & Close, A. (1995). *Health promotion: Theory and practice*. London: Macmillan Press.
- Kippax, S., & Crawford, J. (1993). Flaws in the theory of reasoned action. In D.J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS preventive behaviour* (pp. 253 - 269). Oxford: Pergamon Press.
- Klouda, T. (2000). It's called "Fiddling while Rome burns". In E. Clark, & K. Strachan (Eds.), *Everybody's business: The enlightening truth about AIDS* (pp. 98 - 104). Bellville: Metropolitan Group.
- Kok, G., Hospers, H. J., Harterink, P., & De Zwart, O. (2007). Social-cognitive determinants of HIV risk-taking intentions among men who date men through the internet. *AIDS Care*, 19, 410 – 417.
- Kok, G., Schaalma, H., Ruiter, R. A. C., Van Empelen, P., & Brug, J. (2004). Intervention mapping: A protocol for applying health psychology theory to prevention programmes. *Journal of Health Psychology*, 9, 85 – 98.

- Landridge, D., Sheeran, P., & Connolly, K. J. (2007). Analyzing additional variables in the theory of reasoned action. *Journal of Applied Social Psychology, 37*, 1884 – 1913.
- Leviton, L. (1989). Theoretical foundations of AIDS prevention programmes. In R. Valdiserri (Ed.), *AIDS: The design of effective programs*. New Brunswick: Rutgers University Press.
- Lewis, V. J., & Kashima, Y. (1993). Applying the theory of reasoned action to the prediction of AIDS-preventive behaviour. In D.J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS preventive behaviour* (pp. 29 - 46). Oxford: Pergamon Press.
- Lugoe, W. R., & Rice, J. (1999). Predicting intended condom use among Tanzanian students using the theory of planned behaviour. *Journal of Health Psychology, 4*, 497 – 506.
- Luseno, W. K., & Wechsberg, W. M. (2009). Correlates of HIV testing among South African women with high sexual and substance –use risk behaviours. *AIDS Care, 21*, 178 – 184.
- Macheke, C. & Campbell, C. (1998). Perceptions of HIV/AIDS in a Johannesburg gold mine. *South African Journal of Psychology, 28*, 146 - 153.
- Maibach, E., & Parrot, R. L. (1995). Theory-driven approach to health message design. In E. Maibach & R. L. Parrot (Eds.), *Designing health messages: Approaches from communication theory and public health practice* (pp. 1 – 5). Thousand Oaks: Sage.
- Malotte, C. K., Jarvis, B., Fishbein, M., Kamb, M., Iatesta, M., Hoxworth, T., Zenilman, J., Bolan, G., & The Project RESPECT Study Group (2000). Stage of change versus an integrated psychosocial theory as

a basis for developing effective behaviour change interventions. *AIDS Care*, 12, 357 – 364.

Maman, S., Mbwambo, J., Hogan, N. M., Kilonzo, G. P., & Sweat, M. (2001). Women's barriers to HIV-1 testing and disclosure: Challenges for HIV-1 voluntary counselling and testing. *AIDS Care*, 13, 595 – 603.

Marks, D. F. (2002). Introduction. In D. F. Marks (Ed.), *The health psychology reader*. London: Sage.

Mausbach, B. T., Semple, S. J., Strathdee, S. A., & Patterson, T. L. (2009). Predictors of safer sex intentions and protected sex among heterosexual HIV-negative methamphetamine users: An expanded model of the theory of planned behaviour. *AIDS Care*, 21, 17 – 24.

Mbigi, L. (2000). *In search of the African business renaissance*. Randburg: Knowledge Resources.

McCamish, M., Timmins, P., Terry, D., & Gallois, C. (1993). A theory-based intervention: The theory of reasoned action in action. In D.J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS preventive behaviour* (pp. 185 - 205). Oxford: Pergamon Press.

McDonald, L. (2004). HIV/AIDS treatment for employees – Do we wait for government's programme? *People Dynamics*, 22, 7 - 9.

McDonald, R., & Bunton, G. (2002). Health promotion: Disciplinary developments. In R. Bunton & G. McDonald (Eds.), *Health promotion: Disciplines, diversity and developments* (2nd ed.) (pp. 9 – 27). London: Routledge.

Molla, M., Nordrehaug Astrom, A., & Brehane, Y. (2007). Application of the theory of planned behaviour to intended and self-reported

condom use in a rural Ethiopian population. *AIDS Care*, 19, 425 – 431.

Monahan, J. L. (1995). Thinking positively: Using positive affect when designing health messages. In E. Maibach & R. L. Parrot (Eds.), *Designing health messages: Approaches from communication theory and public health practice* (pp. 81 – 98). Thousand Oaks: Sage.

Montano, D. E. & Kasprzyk, D. (2002). The theory of reasoned action and the theory of planned behaviour. In K. Glanz, B. K. Rimer, & F. M. Lewis (Eds.), *Health behaviour and health education: Theory, research and practice* (pp. 67 - 98). San Francisco: Jossey Bass.

Montgomery, S., Joseph, J., Becker, M., Ostrow, D., Kessler, R., & Kirsch, J. (1989). The health belief model in understanding compliance with preventive recommendations for AIDS: How useful? *AIDS Education and prevention*, 1, 303 – 323.

Morrison, D. M., Gillmore, M. R., & Baker, S. A. (1995). Determinants of condom use among high-risk heterosexual adults. A test of the theory of reasoned action. *Journal of Applied Social Psychology*, 25, 651 – 676.

Mphahlele, E. (2002). The fabric of African culture and religious beliefs – 1971. In E. Mphahlele (Ed.), *Es'kia: Education, African humanism & culture, social consciousness. Literary appreciation* (pp. 142 – 156). Cape Town: Kwela Books in association with Stainbank & Associates.

Ndida, C., Uzodike, U. O., Chimbwete, C., Pool, R., & MDP. (2007). Gender relations in the context of HIV/AIDS in rural South Africa. *AIDS Care*, 19, 844 – 849.

Neale, J. M., & Liebert, R. M. (1986). *An introduction to methods of research* (3rd Ed.). Englewood Cliffs: Prentice Hall.

- Noar, S. M. (2007). An interventionist's guide to AIDS behavioural theories. *AIDS Care*, 19, 392 – 402.
- Nucifora, J., Gallois, C., & Kashima, Y (1993). Influences on condom use among undergraduates: Testing the theories of reasoned action and planned behaviour. In D. J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS-preventive behaviour* (pp. 47 – 64). Oxford: Pergamon Press.
- O'Donnell, M. P. (2002). Preface. In M. P. O'Donnell (Ed.), *Health promotion in the workplace* (3rd ed.) (pp. i – vii). New York: Delmar Publishers Inc.
- Padian, N. S., Van De Wijgert, J. H. H. M., & O'Brien, T. R. (1994). Interventions for sexual partners of HIV-infected or high-risk individuals. In R. J. DiClemente & J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioural interventions* (pp. 227 – 242). New York: Plenum Press.
- Patel, V. L., Gutnik, L. A., Yoskowitz, N. A., O'Sullivan, L. F., & Kaufman, D. R. (2006). Patterns of reasoning and decision making about condom use by urban college students. *AIDS Care*, 18, 918 – 930.
- Patterson, C H. (1986). *Theories of counseling and psychotherapy*. Cambridge: Harper & Row.
- Peltzer, K. (2003). HIV/AIDS/STD knowledge, attitudes, beliefs and behaviours in a rural South African adult population. *South African Journal of Psychology*, 33, 250 – 260.
- Peltzer, K., Mngqundaniso, N., & Petros, G. (2006). HIV/AIDS/STI/TB knowledge, beliefs and practices of traditional healers in KwaZulu-Natal, South Africa. *AIDS Care*, 18, 608 – 613.

- Prilleltensky, I., & Prilleltensky, O. (2003). Towards a critical health psychology practice. *Journal of Health Psychology, 8*, 197 – 210.
- Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change in smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 51*, 390 – 395.
- Prochaska, J. O., Redding, C. A., & Evers, K. E. (2002). The transtheoretical model and stages of change. In K. Glanz, B. K. Rimer, & F. M. Lewis (Eds.), *Health behaviour and health education: Theory, research and practice* (pp. 99 - 120). San Francisco: Jossey Bass.
- Ratele, K. (2004). About black psychology. In D. Hook (Ed.), *Critical psychology* (pp. 389 – 414). Cape Town: UCT Press.
- Reddy, P., & Tobias, B. (1994). Tracing the health promotion movement. *CHASA Journal, 5*, 19 – 23.
- Rehle, T., Shisana, O., Pillay, V., Zuma, K., Puren, A., & Parker, W. (2007). National HIV incidence measures – new insights into the South African epidemic. *South African Medical Journal, 97*, 194 - 199.
- Rhodes, R. E., & Courneya, K. S. (2003). Modelling the theory of planned behavior and past behaviour. *Psychology, Health & Medicine, 8*, 57 – 69.
- Richter, L. & Swart-Kruger, J. (1995). AIDS risk among street children and youth: Implications for intervention. *South African Journal of Psychology, 25*, 31 – 38.
- Rimer, B. K. (2002). Perspectives on interpersonal theories of health behaviour. In K. Glanz, B. K. Rimer, & F. M. Lewis (Eds.), *Health*

behaviour and health education: Theory, research and practice (pp.144 - 159). San Francisco: Jossey Bass.

- Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behavior: A meta-analysis. *Current Psychology, 22*, 218 – 233.
- Ross, M.W. and McClaws, M. (1993). Attitudes towards condoms and the theory of reasoned action. In D. J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS-preventive behaviour* (pp. 81 - 92). Oxford: Pergamon Press.
- Sarafino, E. P. (2008). *Health psychology: Biopsychosocial interactions* (6th Edition). New Jersey: John Wiley & Sons Inc.
- Schlebusch, L. (1990). Boundaries of clinical health psychology, behavioural medicine and related areas. In L. Schlebusch (Ed.), *Clinical health psychology: A behavioural medicine perspective* (pp. 24 - 38). Halfway House: Southern Book Publishers.
- Simbayi, L. C., Chauveau, J., & Shisana, O. (2004). Behavioural responses of South African youth to the HIV/AIDS epidemic: A nationwide survey. *AIDS Care, 16*, 605 -618.
- Sheeran, P., & Orbell, S. (1998). Do intentions predict condom use? Meta-analysis and examination of six moderator variables. *British Journal of Social Psychology, 37*, 231 – 250.
- Sheeran, P., & Taylor, S. (1999). Predicting intentions to use condoms: A meta-analysis and comparison of the theories of reasoned action and planned behaviour. *Journal of Applied Social Psychology, 29*, 1624 – 1675.
- Skinner, D. H. (2000). *A practical application of psychological theory: Use of the theories of reasoned action and planned behaviour to gain a*

better understanding of HIV-related behaviour among youth in the communities of Kayamandi and Mbekweni. Unpublished doctoral thesis, University of Cape Town, Cape Town.

Skogmar, S., Shakely, D., Lans, M., Danell, J., Andersson, R., Tshandu, N., Oden, A., Roberts, S., & Venter, W. D. F. (2006). Effect of antiretroviral treatment and counselling on disclosure of HIV-serostatus in Johannesburg, South Africa. *AIDS Care*, 18, 725 – 730.

Smanjak, P. (2006, October). HIV/AIDS and absenteeism risk. *HR Future*, 24 – 35.

Smart, R. (2000). HIV/AIDS in the workplace: Principles, planning, policy, programmes and project participation. In E. Clark & K. Strachan (Eds.), *Everybody's business: The enlightening truth about AIDS* (pp.190 - 194). Bellville: Metropolitan Group.

Steyn, P. S. (2005, February). The use of health behavioural theories in health promotion and education. *Obstetrics & Gynaecology Forum*, 23 – 27.

Stephenson, R. (2009). Community factors shaping HIV-related stigma among young people in three African countries. *AIDS Care*, 21, 403 – 410.

Strode, A. and Smart, R. (2000). Workplace AIDS programmes - Why employers should get involved. In E. Clark & K. Strachan (Eds.), *Everybody's business: The enlightening truth about AIDS* (pp.194 - 199). Bellville: Metropolitan Group.

Sunmola, A. M., Adebayo, D., Olapegba, M., & Alarape, A. (2006). The experience of condom use and other sexual risk practices among

male brewery employees who recently migrated in Nigeria. *Health Education Journal*, 65, 288 – 301.

Sutton, S., McVey, D., & Glanz, A. (1999). A comparative test of the theory of reasoned action and the theory of planned behavior in the prediction of condom use intentions in a national sample of English young people. *Health Psychology*, 18, 77 – 81.

Terry, D., Gallois, C., & McCamish, M. (1993). The theory of reasoned action and health care behaviour. In D. J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS-preventive behaviour* (pp. 1 – 28). Oxford: Pergamon Press.

Terry, D.J. and O'Leary, J.E. (1995). The theory of planned behaviour: The effects of perceived behavioral control and self-efficacy. *British Journal of Social Psychology*, 34, 199 – 220.

Tlou, E. R. (2005). *The effectiveness of a HIV/AIDS health promotion approach derived from the health belief model*. Unpublished master's dissertation, University of Stellenbosch, Stellenbosch.

UNAIDS/WHO, (2000), *Epidemiological fact sheet on HIV/AIDS and sexually transmitted infections: 2000 update (revised ed.)*. Geneva: UNAIDS.

Van Der Straten, A., Catania, J. A., & Pollack, L. (1998). Psychological correlates of health-protective sexual communication with new sexual partners: The national AIDS behavioural survey. *AIDS and Behavior*, 2, 213 – 227.

Van Dyk, A. (2001a). *HIV/AIDS care and counselling: A multidisciplinary approach*. Pinelands: Pearson Education South Africa.

Van Dyk, A. C. (2001b) Traditional African beliefs and customs: Implications for AIDS education and prevention in Africa. *South African Journal of Psychology*, 31, 60 – 68.

- Van Dyk, A. C. (2007). Occupational stress experienced by caregivers working in the HIV/AIDS field in South Africa. *African Journal of AIDS Research*, 6, 49 – 55.
- Van Dyk, A. C. (2008). *HIV/AIDS care and counselling: A multidisciplinary approach (4th ed.)*. Cape Town: Pearson Education.
- Van Dyk, A. C., & Van Dyk, P. J. (2003a). "To know or not to know": Service-related barriers to voluntary HIV counselling and testing in South Africa. *Curationis*, 26, 4 – 10.
- Van Dyk, A. C., & Van Dyk, P. J. (2003b). "What is the point of knowing?": Psychological barriers to HIV/AIDS voluntary counselling and testing programmes in South Africa. *South African Journal of Psychology*, 33, 118 – 125.
- Van Niftrik, J. (2000). AIDS and employer morality in South Africa. In Clark, E. and Strachan, K (Eds.), *Everybody's Business: The Enlightening Truth about AIDS* (pp.202 – 204). Bellville: Metropolitan Group.
- Varga, C. A., Sherman, G. G., & Jones, S. A. (2005). HIV-disclosure in the context of vertical transmission: HIV-positive mothers in Johannesburg, South Africa. *AIDS Care*, 18, 952 – 960.
- Vass, J., & Phakathi, S. (2006). *Managing HIV in the workplace: Learning from SMEs*. Cape Town: HSRC Press.
- Visser, M. J. (1996). Evaluation of the first AIDS kit, the AIDS and lifestyle education programme for teenagers. *South African Journal of Psychology*, 26, 103 – 113.
- Visser, M. J, Schoeman, J. B. and Perold, J. J. (2004). Evaluation of HIV/AIDS prevention in South African Schools. *Journal of Health Psychology*, 9, 263 – 280.

- Visser, M. J., Makin, J. D., Vandormael, A., Sikkema, K. J., & Forsyth, B. W. C. (2009). HIV/AIDS stigma in a South African community. *AIDS Care*, 21, 197 – 206.
- Wade, L. (2006, March). HIV/AIDS strategic shift. *HR Future*, 31 – 32.
- Walker, J. (2002). Rural women with HIV and AIDS: Perceptions of service, accessibility, psychosocial and mental health counselling needs. *Journal of Mental Health Counselling*, 24, 299 – 318.
- Warwick, P., Terry, D., & Gallois, C. (1993). Extending the theory of reasoned action: the role of health beliefs. In D. J. Terry, C. Gallois & M. McCamish (Eds.), *The theory of reasoned action: Its application to AIDS-preventive behaviour* (pp. 117 – 133). Oxford: Pergamon Press.
- Weaver, C. N. (2008). Social distance as a measure of prejudice among ethnic groups in the United States. *Journal of Applied Social Psychology*, 38, 779 – 795.
- Weinstein, N. D., & Sandman, P. M. (2002). The precaution adoption process model. In K. Glanz, B. K. Rimer, & F. M. Lewis (Eds.), *Health behaviour and health education: Theory, research and practice* (pp. 121 - 143). San Francisco: Jossey Bass.
- Weinstein, N. D., Rothman, A. J., & Sutton, S. R. (1998). Stage theories of health behaviour: Conceptual and methodological issues. *Health Psychology*, 17, 290 – 299.
- Whaley, A. L., & Davis, K. E. (2007). Cultural competence and evidence-based practice in mental health services: A complementary perspective. *American Psychologist*, 62, 563 – 574.
- Whelehan, P. (2009). *The anthropology of AIDS: A global perspective*. Tallahassee: University Press of Florida.

- White, K. M., Terry, D. J., & Hogg, M. A. (1994). Safer sex behaviour: The role of attitudes, norms and control factors. *Journal of Applied Social Psychology, 24*, 2164 – 2192.
- Whiteside, A. (2000). Introduction to Aids Analysis Africa. In E. Clark and K. Strachan, (Eds.), *Everybody's business: The enlightening truth about AIDS* (pp.ix - x). Bellville: Metropolitan Group.
- Whiteside, A., & Sunter, C. (2000). *AIDS: The challenge for Southern Africa*. Tafelberg: Human and Rousseau.
- Wilson, G. T. (1989). Behaviour therapy. In R.J. Corsini & D. Wedding (Eds.), *Current psychotherapies* (pp. 241 – 282). Itasca: F. E. Peacock Publishers.
- Wilson, D., Lavelle, S., Greenspan, R., & Wilson, C. (1991). Psychological predictors of HIV-preventive behaviour among Zimbabwean students. *Journal of Social Psychology, 131*, 293 – 295.
- Wise, D., Goggin, K., Gerkovich, M., Metcalf, K., Kennedy, S. (2006). Predicting intentions to use condoms using gender, sexual experience and the theory of planned behaviour. *American Journal of Health Education, 37*, 210 – 219.
- Witte, K. (1995). Fishing for success: Using the persuasive health message framework to generate effective campaign messages. In E. Maibach & R. L. Parrot (Eds.), *Designing health messages: Approaches from communication theory and public health practice* (pp. 145 – 166). Thousand Oaks: Sage.
- Yzer, M., Fishbein, M., & Hennessy, M. (2008). HIV interventions affect behaviour indirectly: results from the AIDS Community Demonstration Projects. *AIDS Care, 20*, 456 – 461.

Zungu-Dirwayi, N., Shisana, O., Louw, J., & Dana, P. (2007). Social determinants for HIV prevalence among South African educators. *AIDS Care*, 19, 1296 – 1303.

APPENDICES

APPENDIX A: ELICITATION QUESTIONNAIRE

**ELICITATION INTERVIEW
QUESTIONNAIRE**

This questionnaire is a brainstorming exercise aimed at inviting your views on various actions associated with three safer sex behaviours and people who are important to you. For each question you are required to indicate advantages and disadvantages of the behaviour, rate the ease or difficulty of performing the behaviour and list the nature of your relationships with important others. For each question, try to come up with at least 5 responses.

Your responses are anonymous, which means it will not be possible to identify you or link any responses to you.

Sex: Male [] Female []

Age: Marital Status:.....

1. CONDOM USE

How do you feel about always using a condom during sexual intercourse ?

Advantages

Disadvantages

How easy or difficult will it be for you to always use a condom during sexual intercourse? (Indicate your response with a cross [x] mark on the appropriate point on the scale).

___ Very easy

___ Easy

___ Not easy at all

___ Uncertain

___ Not difficult at all

___ Difficult

___ Very difficult

When it comes to condom use, there are people or groups of people who are important to you who would approve of you using a condom during sexual intercourse. In the spaces provided below, use the left column to list five of those people or groups of people. Do not state names, state only their association with you (e.g my friend, my colleagues, my priest etc). Use the 5-point rating scale on the right column to rate their level of approval (1 would indicate an extremely low rating and 5 an extremely high rating).

My _____ : _____ : _____ : _____ : _____
 1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
 1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
 1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

2. VOLUNTARY COUNSELLING AND TESTING

How do you feel about seeking voluntary counselling and testing for HIV?

Advantages

Disadvantages

How easy or difficult will it be for you to seek voluntary counselling and testing for HIV? (Indicate your response with a cross [X] mark on the appropriate point on the scale).

___ Very easy

___ Easy

___ Not easy at all

___ Uncertain

___ Not difficult at all

___ Difficult

___ Very difficult

When it comes to voluntary counselling and testing for HIV, there are people or groups of people who are important to you who would approve of you seeking voluntary counselling and testing. In the spaces provided below, use the left column to list five of those people or groups of people. Do not state names, state only their association with you (e.g my friend, my colleagues, my priest etc). Use the 5-point rating scale on the right column to rate their level of approval (1 would indicate an extremely low rating and 5 an extremely high rating).

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

My _____ : _____ : _____ : _____ : _____
1 2 3 4 5

3. HAVING ONLY ONE SEX PARTNER

How do you feel about having only one sex partner?

Advantages

Disadvantages

How easy or difficult will it be for you to have only one sex partner? (Indicate your response with a cross [x] mark at the appropriate point on the scale).

___ Very easy

___ Easy

___ Not easy at all

___ Uncertain

___ Not difficult at all

___ Difficult

___ Very difficult

When it comes to having one sex partner, there are people or groups of people who are important to you who would approve of you having only one sex partner. In the spaces provided below, use the left column to list five of those people or groups of people. Do not state names, state only their association with you (e.g my friend, my colleagues, my priest etc). Use the 5-point rating scale on the right column to rate their level of approval (1 would indicate an extremely low rating and 5 an extremely high rating).

My _____ : _____ : _____ : _____ : _____

1 2 3 4 5

My _____ : _____ : _____ : _____ : _____

1 2 3 4 5

My _____ : _____ : _____ : _____ : _____

1 2 3 4 5

My _____ : _____ : _____ : _____ : _____

1 2 3 4 5

My _____ : _____ : _____ : _____ : _____

1 2 3 4 5

Thank you.

APPENDIX B: CONSENT LETTER

July 2008

Dear Colleague

CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

I appreciate your willingness to take part in this research project.

I am conducting research titled *The Application of the Theories of Reasoned Action and Planned Behaviour to a Workplace HIV/AIDS Health Promotion Programme*. The research is conducted for doctoral studies in the Department of Psychology at the University of South Africa under the supervision of Prof. A C Van Dyk. The purpose of the research is to explore different methods of doing HIV/AIDS education in the workplace. It is expected that this research can make a contribution to the manner in which HIV/AIDS education is conducted at South African workplaces.

Your participation will involve taking part in a semi-structured workshop and completing anonymous questionnaires. The anonymous questionnaires are going to be completed at three different time periods: just before the workshop, one month after the workshop and six months after the workshop.

You are requested to make yourself available for questionnaire completion for the six months that the project will last. Your names and office numbers are going to be kept only for purposes of sending subsequent questionnaires to you. The next set of questionnaires (two short questionnaires and a long one) will be sent to you during August 2008 and the last set (two short questionnaires) will be sent during February 2009.

The questionnaires are anonymous in that it will not be possible to link responses to any individual. There will be no identifying information on the questionnaires. Also, the information gathered is going to be used only for purposes of writing the thesis. Your participation in the project is completely voluntary. You may withdraw your participation at anytime.

There are no anticipated personal risks attached to your participation in this project. However, if you have a need to follow-up on any issues that emerge for you during the research, we can schedule a follow-up consultation.

Thank you.

Emmanuel Tlou
Clinical Psychologist

Address:

Telephone:

Declaration by participant

I have familiarised myself with the contents of this document. I am willing to take part in this research project.

Participant signature

APPENDIX C: TRA/TPB WORKSHOP SESSION OUTLINE

Introduction

- Introduction by researcher.
- Purpose of the research.

NOTE: Facilitator verbalisations are in italics and the facilitation process in blue font.

SUB-SESSION 1: BREAKING THE ICE

Opening line: *AIDS is considered the leading cause of death in Sub-Saharan Africa where we live. In most cases it can be prevented. We have a responsibility to prevent the spread of the epidemic. This prevention can be achieved by us changing our risky sexual behaviours. AIDS in South Africa is now in its third decade. By now you have most of the knowledge you need to have about the disease. What is different about this workshop is that we are going to learn ways of changing our behaviour so that we limit, and even prevent, the spread of AIDS.*

We are going to focus mainly on three safer sex practices namely, regular condom use, seeking voluntary HIV counselling and testing and having only one sex partner. There may be other safer sex practices that you want to talk about. Our focus will be on the three that have been specified.

The format of the workshop is going to be a semi-structured conversation in which you are going to share ideas on how you can develop and enhance the safer sex practices that are the focus of attention. My role will be to facilitate the discussion.

Facilitator prompts:

How do you feel about talking about HIV/AIDS?

Why is it important to talk about HIV/AIDS?

How should we respond to the problem posed by HIV/AIDS?

What does the group consider safer sex practices? (Facilitator listed them on a flip chart)

Summarisation by facilitator

The summary paraphrased and highlighted the issues that came up in the foregoing discussion. The three health behaviours of interest will be highlighted as the main focus of the rest of the workshop. As far as possible the summary will be framed in accordance with the persuasive message framework proposed by Maibach and Parrot (1995).

SUB-SESSION 2: IN-DEPTH DISCUSSION ON ATTITUDES, SUBJECTIVE NORMS AND PERCEIVED BEHAVIOURAL CONTROL IN RELATION TO THE PREVENTIVE HEALTH BEHAVIOURS.

PART A: CONDOM USE

DISCUSSION ON CONDOM USE ATTITUDES

Facilitator prompt: *There are certain beliefs that we hold about regular condom use. We are now going to talk about those beliefs and examine each one of them. What are those beliefs? (Facilitator wrote them on a flip chart as they were mentioned).*

Now let us go through each belief and ask ourselves whether it makes sense or not – that is, could it be myth or fact? (Positive beliefs were reinforced while negative beliefs were questioned using Socratic dialogue techniques. The positive messaging framework was used).

(At the end of the discussion on beliefs, the facilitator made the following prompt): Now, what does the group consider acceptable beliefs that society should hold about regular condom use? (Facilitator listed them on a flip chart).

DISCUSSION ON CONDOM USE NORMS

Facilitator prompt: *We are social beings who are always influenced by others and want to please those important to us. That means there are people who are important to you whom you want to please and who also want to please you.*

Reflecting on those beliefs about condom use that we spoke about, let us now talk about the people who are important to us whom we would like to influence to adopt those beliefs. In each case, let us propose ways in which we are going to influence those people.

(At the end of the discussion the facilitator made the following prompt): There are also those people who are important to us who expect us to use condoms regularly and whose wishes we want to satisfy. Who are those people and how

can we strengthen our relationships with them? (Facilitator listed them on a flip chart).

Facilitator prompt: *We have seen how interconnected we are with those who are important to us. We are also important to other people. Now let us talk about our role with our peers (friends, colleagues, relatives etc) – how are we going to make them feel motivated to want to use condoms in order to protect themselves against HIV/AIDS.*

DISCUSSION ON BARRIERS AND FACILITATORS TO CONDOM USE BEHAVIOUR

(To avoid confusing participants, the term perceived behavioural control was substituted with barriers and facilitators)

Facilitator prompt: *Reflecting on the discussion so far, we are now aware of the kinds of beliefs that are appropriate for condom use as well as how to create a community or reference group of people who would maintain those beliefs.*

There are certain factors that will make it difficult (let us call them barriers) or easy (let us call them facilitators) for us to cultivate the appropriate beliefs around condom use and the creation of a “condom using community”. Let us identify those barriers and facilitators.

(Facilitator made two separate flip charts, one with barriers and another with facilitators and then made the following prompt):

We are now going to look at ways in which we could mitigate each of these barriers – that is, what is it that we could do to neutralise each barrier and make it ineffective (Facilitator took the group through each listed barrier and allowed the group to talk about beliefs that informed that barrier and ways to mitigate it).

Now let us go through the listed facilitators. What is it that we must do to ensure that each facilitator is strengthened and enhanced so that it becomes easy for us to want to use condoms (Facilitator took the group through each facilitator and allowed them to talk about ways of enhancing it).

PART B: VOLUNTARY COUNSELLING AND TESTING

DISCUSSION ON ATTITUDES TOWARDS VOLUNTARY COUNSELLING AND TESTING

Facilitator prompt: *There are certain beliefs that we hold about seeking voluntary HIV counselling and testing. We are now going to talk about those beliefs and examine each one of them. What are those beliefs (Facilitator wrote them on a flip chart as they were mentioned).*

Now let us go through each belief and ask ourselves whether it makes sense or not – that is, could it be myth or fact (Positive beliefs were reinforced while negative beliefs were questioned using Socratic questioning techniques. The positive messaging framework was used).

(At the end of the discussion on beliefs, the facilitator made the following prompt): Now, what does the group consider acceptable beliefs that society should hold about seeking voluntary HIV counselling and testing? (Facilitator listed on a flip chart).

DISCUSSION ON VOLUNTARY COUNSELLING AND TESTING NORMS

Facilitator prompt: *We are social beings who are always influenced by others and want to please those important to us. That means there are people who are important to you whom you want to please and who also want to please you.*

Reflecting on those beliefs about HIV testing that we spoke about, let us now talk about the people who are important to us whom we would like to influence to adopt those beliefs. In each case, let us propose ways in which we are going to influence those people to want to know their HIV status.

(At the end of the discussion the facilitator made the following prompt): There are also those people who are important to us who expect us to know our HIV status and whose wishes we want to satisfy. Who are those people and how can we strengthen our relationships with them? (Facilitator listed on a flip chart).

Facilitator prompt: *We have seen how interconnected we are with those who are important to us. We are also important to other people. Now let us talk about our role with our peers (friends, colleagues, relatives etc) – how are we going to make them feel motivated to want to go for HIV counselling and testing in order to know their HIV status?*

DISCUSSION ON BARRIERS AND FACILITATORS TO HIV COUNSELLING AND TESTING

(To avoid confusing participants, the term perceived behavioural control was substituted with barriers and facilitators)

Facilitator prompt: *Reflecting on the discussion so far, we are now aware of the kinds of beliefs that are appropriate for voluntary HIV counselling and testing as well as how to create a community or reference group of people who would maintain those beliefs.*

There are certain factors that will make it difficult (let us call them barriers) or easy (let us call them facilitators) for us to cultivate the appropriate beliefs around HIV testing and the creation of a “testing-friendly community”. Let us identify those barriers and facilitators.

(Facilitator made two separate flip charts, one with barriers and another with facilitators and then made the following prompt):

We are now going to look at ways in which we could mitigate each of these barriers – that is, what is it that we could do to neutralise each barrier and make it ineffective (Facilitator took the group through each listed barrier, allowed the group to talk about the beliefs that motivated it and ways to mitigate the barrier. Participants talked about various psychological barriers they experienced and shared ideas on how those barriers could be managed or overcome).

Now let us go through the listed facilitators. What is it that we must do to ensure that each facilitator is strengthened and enhanced so that it becomes easy for us to want to use condoms (Facilitator took the group through each facilitator and allowed them to talk about ways of enhancing it. Participants talked about the various psychological barriers they experienced and shared ideas on how to manage or overcome those barriers).

PART C: MONOGAMY

DISCUSSION ON ATTITUDES TOWARDS MONOGAMY

Facilitator prompt: *There are certain beliefs that we hold about having only one sex partner. We are now going to talk about those beliefs and examine each one of them. What are those beliefs (facilitator wrote them on a flip chart as they were mentioned).*

Now let us go through each belief and ask ourselves whether it makes sense or not – that is, could it be myth or fact (Positive beliefs were reinforced while negative beliefs were questioned using Socratic questioning techniques. The positive messaging framework was used).

(At the end of the discussion on beliefs, the facilitator made the following prompt): *Now, what does the group consider acceptable beliefs that our society should hold about having only one sex partner? (Facilitator listed them on a flip chart).*

DISCUSSION ON MONOGAMY NORMS

Facilitator prompt: *We are social beings who are always influenced by others and want to please those important to us. That means there are people who are important to you whom you want to please and who also want to please you.*

Reflecting on those beliefs about having only one sex partner that we spoke about, let us now talk about the people who are important to us whom we would like to motivate to adopt those beliefs. In each case, let us propose ways in which we are going to influence those people to want to maintain a relationship with only one sex partner.

(At the end of the discussion the facilitator made the following prompt): *There are also those people who are important to us who expect us to have only one sex partner and whose wishes we want to satisfy. Who are those people and how can we strengthen our relationships with them? (Facilitator listed on a flip chart).*

Facilitator prompt: *We have seen how interconnected we are with those who are important to us. We are also important to other people. Now let us talk about our role with our peers (friends, colleagues, relatives etc) – how are we going to make them feel pressurised to want to have only one sex partner?*

DISCUSSION ON BARRIERS AND FACILITATORS TO MONOGAMY

(To avoid confusing participants, the term perceived behavioural control was substituted with barriers and facilitators)

Facilitator prompt: *Reflecting on the discussion so far, we are now aware of the kinds of beliefs that are appropriate for one-partner behaviour as well as how to create a community or reference group of people who would maintain those beliefs.*

There are certain factors that will make it difficult (let us call them barriers) or easy (let us call them facilitators) for us to cultivate the appropriate beliefs around one-partner behaviour and the creation of a “monogamous community”. Let us identify those barriers and facilitators.

(Facilitator made two separate flip charts, one with barriers and another with facilitators and then made the following prompt):

We are now going to look at ways in which we could mitigate each of these barriers – that is, what is it that we could do to neutralise each barrier and make it ineffective (Facilitator took the group through each listed barrier and allowed the group to talk about ways to mitigate each barrier).

Now let us go through the listed facilitators. What is it that we must do to ensure that each facilitator is strengthened and enhanced so that it becomes easy for us to want to use condoms (Facilitator took the group through each facilitator and allowed them to talk about ways of enhancing each one).

Summarisation by facilitator

The summary will consolidate the group's views on how to create positive attitudes towards the three health behaviours; how to create a like-minded reference group of people who share the same beliefs around the health behaviours; and how to increase feelings of control.

SUB-SESSION 3: INTENTION FORMATION

Facilitator prompt: *so far we know what beliefs to uphold about safer sex practices, the kind of people to surround ourselves with and the importance of believing in our ability to conduct ourselves in ways which will minimise the risk of HIV infection.*

In this part of the workshop we are going to talk about goals we should strive towards. Considering what we discussed earlier, what should be our goals for the future, specifically the next six months? (The discussion that followed resulted in participants forming intentions. The discussion was steered towards the formulation of intentions in relation to condom use, HIV testing and monogamy. All intentions were captured on a flip chart).

Summarisation by facilitator

(Consolidation of the intentions formed by the group followed by the following prompt) Now that we know what goals to strive towards, we are going to talk about the behavioural skills we must learn in order to realise those goals.

SUB-SESSION 4: LEARNING BEHAVIOURAL SKILLS

Facilitator prompt: What are the skills that you feel you need to learn to achieve the goals you set for yourselves (Facilitator listed these on a flip chart. Skills that required role-playing were selected. Role plays and didactic inputs were made).

Summarisation by facilitator.

SUB-SESSION 5: CONSOLIDATION

(The facilitator summarised the highlights of the workshop, focusing on the three health behaviours, intentions made by participants and the skills learned).

Facilitator prompt: *Let us talk about what you are going to do to maintain the attitudes and behaviours learned in this workshop - that is, how are you going to live differently from now; what commitments are you making to yourself?*

END OF WORKSHOP

APPENDIX D: BIOGRAPHICAL QUESTIONNAIRE

BIOGRAPHICAL QUESTIONNAIRE

You are requested to provide information about yourself by indicating with a cross (x) or check (✓) or, where applicable, entering a number in the spaces provided. The questionnaire is anonymous, which means it will not be possible to identify you or link any responses to you. Question 4 is optional, which means you are not obligated to answer it.

1. Sex

Male	[]
Female	[]

2. Age [:]

3. Highest Level of Education

Lower than Matric	[]
Matric	[]
3-year Diploma	[]
Degree	[]
Post-graduate	[]

4. Sexual Relationship Status

Married	[]
Married with an additional partner	[]

- Unmarried and without a partner []
- Unmarried with a new partner (less than 3 months) []
- Unmarried with a regular partner (3 months +) []
- Unmarried with more than one partner []
- Divorced and without a partner []
- Divorced with a new partner (less than 3 months) []
- Divorced with a regular partner (3 months+) []
- Divorced with more than one partner []

4. (Optional) Do you know your HIV status? Yes []

No []

APPENDIX E: AIDS HEALTH BEHAVIOUR QUESTIONNAIRE

Time 1 (Baseline) Instruction

The following statements represent some of the sexual practices that people tend to engage in. To complete the questionnaire answer True or False by indicating your response with a cross (X) or check (✓) mark in the spaces next to each statement. If a statement does not apply to you, simply delete it by drawing a line through it.

Your responses to this questionnaire are anonymous, which means it will not be possible to identify you or link any responses to you.

(Items worded in present tense)

Time 2 (1 Month follow-up) Instruction

*The following statements represent some of the sexual practices that people tend to engage in. You are required to report the behaviours you engaged in during the **past one month**. To complete the questionnaire answer True or False by indicating your response with a cross (X) or check (✓) mark in the spaces next to each statement. If a statement does not apply to you, simply delete it by drawing a line through it.*

Your responses to this questionnaire are anonymous, which means it will not be possible to identify you or link any responses to you.

(Items worded in past tense)

Time 3 (6 Month follow-up) Instruction

*The following statements represent some of the sexual practices that people tend to engage in. You are required to report the behaviours you engaged in during the **past six months**. To complete the questionnaire answer True or False by indicating your response with a cross (X) or check (✓) mark in the spaces next to each statement. If a statement does not apply to you, simply delete it by drawing a line through it.*

Your responses to this questionnaire are anonymous, which means it will not be possible to identify you or link any responses to you.

(Items worded in past tense)

		True	False
1.	I avoid sexual contact with anyone who is not my regular partner.	[]	[]
2.	I abstain from all sexual activity.	[]	[]
3.	I pay attention to media messages about using condoms.	[]	[]
4.	I avoid using condoms as they take away the pleasure.	[]	[]
5.	I tell myself that sex is more enjoyable without a condom.	[]	[]
6.	I use a condom when having sex with a casual partner.	[]	[]
7.	I ignore media messages about using condoms as they are not relevant to me.	[]	[]
8.	I talk freely about condom use with my partner	[]	[]
9.	I always insist on sex without a condom.	[]	[]
10.	I refuse to have sex with a person who does not use a condom	[]	[]
11.	I have been for voluntary HIV counselling and testing (VCT)and I know my HIV status.	[]	[]
12.	I ignore media messages about VCT as I feel they are not relevant to me.	[]	[]
13.	I talk freely with my partner about HIV testing	[]	[]
14.	I avoid HIV testing as I fear knowing my HIV status.	[]	[]
15.	I keep myself informed about the benefits of undergoing a HIV test.	[]	[]
16.	I avoid taking a HIV test because I have only one partner.	[]	[]

- | | | | |
|-----|--|-----|-----|
| 17. | I go for regular HIV tests so that I can take appropriate steps if I test positive. | [] | [] |
| 18. | I avoid the company of people who talk about HIV testing as the thought of it scares me. | [] | [] |
| 19. | I like to encourage friends and colleagues to seek voluntary counselling and testing by making them aware of the benefits of doing so. | [] | [] |
| 20. | I make an effort to stay faithful to my partner. | [] | [] |
| 21. | I like talking to my partner about ways of strengthening our relationship. | [] | [] |
| 22. | I do not engage in any casual sex. | [] | [] |
| 23. | I have an additional partner as sex is more exciting when there is variety. | [] | [] |
| 24. | I enjoy partying as it gives me a chance to meet potential casual partners. | [] | [] |
| 25. | I avoid the company of people who have many sex partners. | [] | [] |
| 26. | I have more than one sex partner. | [] | [] |
| 27. | I participate in religious activities as this encourages family values. | [] | [] |

APPENDIX F : TRA/TPB QUESTIONNAIRE

The questionnaire you are about to fill out measures people's views on some safer sex practices. You will be asked questions which make use of rating scales with seven places. Next to each question is a 7 – point rating scale. You are to make a cross (x) mark over, or circle around, a number in the place on the 7-point scale that best describes your opinion. For example, if you were asked to rate the statement "The Weather in Pretoria" on such a scale, the 7-point rating scale would appear as follows

Bad 1 : 2 : 3 : 4 : 5 : 6 : 7 Good
 extremely quite slightly neither slightly quite extremely

The question would appear as follows:

The weather in Pretoria is Bad 1 : 2 : 3 : 4 : 5 : 6 : 7 Good

SO,

If you think the weather in Pretoria is **extremely good**, then you would place your cross or circle as follows:

The weather in Pretoria is Bad 1 : 2 : 3 : 4 : 5 : 6 : **X** Good

In this case, you would place your cross over the number 7 or put a circle around the number 7.

OR

If you think the weather in Pretoria is **slightly bad**, then you would place your mark as follows:

The weather in Pretoria is Bad 1 : 2 : **X** : 4 : 5 : 6 : 7 Good

You will also be using a rating scale with **unlikely-likely** as endpoints. This scale is to be interpreted in the same way. For example, if you were asked to rate the statement "The weather in Pretoria is cold in April" on such a scale, the 7-point scale would appear as follows:

Unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Likely
 extremely quite slightly neither slightly quite extremely

The question would appear as follows:

The weather in Pretoria is cold in April Unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Likely

SO,

*If you think that it is **quite likely** that the weather in Pretoria is cold in April you would place your cross or circle as follows:*

The weather in Pretoria is cold in April Unlikely 1 : 2 : 3 : 4 : 5 : **X** : 7 Likely

In this case you would place your cross over the number 6 or put a circle around the number 6.

*Other questions would have a rating scale anchored by **Not at all** and **Very much**, for example*

Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much

 highly so moderately slightly neither slightly moderately highly so

*Other questions will be anchored by opposite adjectives such as **Unpleasant/Pleasant**, **Undesirable/Desirable** and so on.*

Responses to the questionnaire are **anonymous**, which means it will not be possible to identify you.

Any questions?

The questionnaire begins on the next page.

1. I intend to go for a HIV test in the next six months. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
2. I am definitely going for a HIV test in the next six months. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
3. I expect myself to have only one sex partner for the next six months. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
4. I intend to have only one sex partner for the next six months. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
5. I want to use a condom every time I have sex for the next six months. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
6. I expect myself to use a condom every time I have sex for the next six months. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
7. My seeking a HIV test in the next six months is Bad 1 : 2: 3 : 4 : 5 : 6 : 7 Good
8. My seeking a HIV test in the next six months is Unnecessary 1:2:3 : 4 : 5 : 6 : 7 Necessary
9. My using a condom regularly during sexual intercourse in the next six months is Unwise 1 : 2: 3 : 4 : 5 : 6 : 7 Wise
10. My using a condom regularly during sexual intercourse in the next six months is Unpleasant 1:2: 3 : 4 : 5 : 6 : 7 Pleasant
11. My having one sex partner in the next six months is Undesirable 1 : 2: 3: 4 : 5 : 6 : 7 Desirable
12. My having one sex partner in the next six months is Boring 1 : 2: 3 : 4 : 5 : 6 : 7 Exciting
13. My going for a HIV test in the next six months shows that I care about my health and my partner's health. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
14. My going for a HIV test in the next six months means I am suspicious of my partner. Agree 1 : 2: 3 : 4 : 5 : 6 : 7 Disagree
15. My having only one sex partner in the next six months is emotionally fulfilling to me and my partner and makes us both happy. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree
16. My having only one sex partner in the next six months means I am at low risk of getting infected with HIV. Disagree 1 : 2: 3 : 4 : 5 : 6 : 7 Agree

17. My using a condom during sexual intercourse in the next six months means I do not have to worry about unwanted pregnancy and sexually transmitted infections Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
18. My using a condom regularly in the next six months does not guarantee my safety as condoms can have defects Agree 1 : 2 : 3 : 4 : 5 : 6 : 7 Disagree
-
19. For me, caring about my health is Undesirable 1 : 2 : 3 : 4 : 5 : 6 : 7 Desirable
20. For me, feeling suspicious about my partner is Desirable 1 : 2 : 3 : 4 : 5 : 6 : 7 Undesirable
21. For me and my partner, feeling emotionally fulfilled and happy is Undesirable 1 : 2 : 3 : 4 : 5 : 6 : 7 Desirable
22. Knowing that I am at low risk of getting HIV infection is Undesirable 1 : 2 : 3 : 4 : 5 : 6 : 7 Desirable
23. Not having to worry about unwanted pregnancy or sexually transmitted infections is Undesirable 1 : 2 : 3 : 4 : 5 : 6 : 7 Desirable
24. The discomfort of worrying about the poor safety of condoms is Desirable 1 : 2 : 3 : 4 : 5 : 6 : 7 Undesirable
-
-
25. My siblings (brothers and/or sisters) think I should go for a HIV test. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
26. My partner/spouse thinks I should go for a HIV test. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
27. My friends think I should use a condom every time I have sex. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
28. My colleagues think it is a good idea that I should use a condom every time I have sex. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
29. My religious leader (e.g priest) thinks I should have only one sex partner. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
30. My extended family think I should have only one sex partner. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree

-
31. My partner would approve of me staying faithful to her/him. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
32. I am under pressure from my parents (mother and/or father) to stay faithful to my only partner. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
33. My colleagues would approve of me getting to know my HIV status. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
34. My extended family (cousins, uncles etc.) would be pleased if I knew my HIV status. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
35. My friends would be disappointed in me if I did not use condoms. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
36. My colleagues expect me to use a condom every time I have sex with a casual partner. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
-
37. My partner's approval of my faithfulness is important to me. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
38. Staying faithful to my only partner as parents expect me is important to me. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
39. When it comes to HIV testing, I want to do what my colleagues expect me to do. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
40. When it comes to HIV testing, I am most keen to do what my extended family expect. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
41. Pleasing my friends by always using a condom matters a lot to me. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
42. When it comes to using a condom with a casual partner, I do what my colleagues want me to do. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
-
43. I am confident that I can refuse sex without a condom if I want to. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
44. The decision to use a condom is beyond my control. Agree 1 : 2 : 3 : 4 : 5 : 6 : 7 Disagree

45. For me to stay faithful to my only partner would be easy. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
46. Being faithful to my only partner is entirely up to me. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
47. I have no doubt about my ability to go for HIV testing. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
48. It is completely up to me if I want to get tested for HIV. Disagree 1 : 2 : 3 : 4 : 5 : 6 : 7 Agree
-
49. Knowing my HIV status would make it possible for me to achieve a positive life style change. Unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Likely
50. The fear of being rejected by loved ones if I test positive for HIV will discourage me from getting myself tested. Likely 1 : 2 : 3 : 4 : 5 : 6 : 7 Unlikely
51. What I have heard about the risks of using condoms will make it difficult for me to use one. Likely 1 : 2 : 3 : 4 : 5 : 6 : 7 Unlikely
52. I can still maintain high levels of intimacy with my partner while using condoms. Unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Likely
53. Only I can decide to stay faithful to my only sex partner. Unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Likely
54. I am able to resist the temptation of getting involved with more than one sex partner. Unlikely 1 : 2 : 3 : 4 : 5 : 6 : 7 Likely
-
55. The likelihood of making a positive life style change makes it easy for me to go for HIV testing. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
56. It will still be easy for me to seek HIV testing despite the possibility of being rejected if I test positive. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
57. It will be difficult for me to try using a condom because of the risks associated with it. Very much 1 : 2 : 3 : 4 : 5 : 6 : 7 Not at all
58. It will be easy for me to mix condoms with pleasure. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much
59. It will be easy for me to stay faithful to my partner if I choose to. Not at all 1 : 2 : 3 : 4 : 5 : 6 : 7 Very much

60. Resisting the temptation of getting involved with more than one partner will be difficult for me to do. Very much 1 : 2 : 3 : 4 : 5 : 6 : 7 Not at all

.....

THANK YOU

APPENDIX G: SCORING KEY FOR THE TRA/TPB QUESTIONNAIRE

Construct measured	Question numbers	Scoring format	Items requiring reverse scoring	Items requiring multiplication
Intentions	1 to 6	1 to 7		
Attitude, direct measure	7 to 12	1 to 7		
Behavioural Beliefs	13 to 18	1 to 7	14; 18	13 x 19; 14 x 20; 15 x 21; 16 x 22; 17 x 23; 18 x 24
Outcome Beliefs	19 to 24	-3 to +3	24	
Subjective Norm, direct measure	25 to 30	1 to 7		
Normative Beliefs	31 to 36	1 to 7		31 x 37; 32 x 38; 33 x 39; 34 x 40; 35 x 41; 36 x 42
Motivation to Comply	37 to 42	-3 to +3		
Perceived Behavioural Control, direct measure	43 to 48	1 to 7	44	
Control Beliefs	49 to 54	1 to 7	50; 51	49 x 55; 50 x 56; 51 x 57; 52 x 58; 53 x 59; 54 x 60
Perceived Power	55 to 60	-3 to +3	57; 60	

