

# **The effectiveness of a HIV/AIDS health promotion approach derived from the Health Belief Model**

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***Declaration***

I, the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature:

Date:

## Summary

The purpose of this study was to investigate the effectiveness of a HIV/AIDS health promotion approach derived from the Health Belief Model (Becker and Maiman, 1975). The Health Belief Model is one of the conceptual models used to explain health compliance behaviour. According to the model an individual's readiness to take action and engage in health - related behaviour (safe sex in the case of the present study) relative to a particular health condition (HIV/AIDS in the case of the present study) 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 their perception of the severity of the consequences of having the illness. The second factor is the perceived benefit of action in contrast to the barrier to acting. The third factor relates to access to cues for action, that is cues that trigger appropriate health behaviour.

The study was motivated by the observation that the incidence of HIV/AIDS in South Africa continues to rise despite heightened educational efforts undertaken in the workplace.

The research question was two-fold: Firstly, the study was to determine whether there would be significant differences in HIV/AIDS health beliefs and health behaviour between participants receiving a traditional HIV/AIDS workshop and those receiving a cognitive restructuring workshop based on the Health Belief Model. Secondly, the study was to determine whether there was a significant relationship between HIV/AIDS health beliefs and HIV/AIDS health behaviour

To test hypotheses relating to differences in health beliefs and health behaviour as well as the relationship between health beliefs and health behaviour, 78 employees in a government department were divided into two groups. One group, the control group, took part in a structured, lecture-type HIV/AIDS health promotion workshop. The other group, the experimental group, took part in an unstructured workshop designed to

examine commonly held beliefs about HIV/AIDS. Prior to participation in the workshops, both groups completed the researcher designed AIDS Health Beliefs Questionnaire and AIDS Health Behaviour Questionnaires. Both groups then completed the same questionnaires one month after participating in the workshops and their pre-workshop and post-workshop responses were compared using t-tests. The relationship between health beliefs and health behaviour was examined using the Pearson  $r$  –correlation test.

There were no significant differences in health beliefs and health behaviour between the two groups at pre- and post-workshop conditions. Only the control group females showed a significant difference in health beliefs at post-workshop assessment. There was an overall change in health beliefs at post-workshop assessment for the entire population. There were no significant differences in health beliefs and health behaviour between the control group and the experimental group. There was no significant relationship between health beliefs and health behaviour. Significant relationships were observed among the variables of the Health Belief Model. None of the health Belief Model variables predicted health behaviour.

It was concluded that beliefs restructuring workshops had no effect on AIDS health behaviour. This study failed to show that positive health beliefs result in positive health behaviour.

## **Opsomming**

Die doel van hierdie studie was 'n ondersoek na die doeltreffendheid van die Gesondheidsoortuigingsmodel (Becker & Meyer, 1975) as opvoedingsparadigma in 'n Suid-Afrikaanse konteks. 'n Eksperimentele- en kontrolegroep is gebruik om die model te toets. Geen beduidende verskille in gesondheidsoortuiging en gesondheidsoptrede is by die twee groepe gevind nie.

Die studie kom tot die gevolgtrekking dat werksinkels, wat poog om oortuigings te herstruktureer, geen beduidende invloed op MIV/ Vigs-gesondheidsoptrede het nie. Die studie dui daarop dat positiewe gesondheidsoortuigings nie tot positiewe gesondheidsoptrede lei nie. Moontlike redes vir hierdie gevolgtrekking word bespreek en voorstelle vir verdere studies word gemaak.

## 1. INTRODUCTION

South Africa is reported to have the highest number of people living with HIV/AIDS in the world. The prevalence rate is reported to be 4.2 million people (Quinn 2001; UNAIDS/WHO, 2000). In the developing world, of which South Africa is part, HIV/AIDS is reported to be most prevalent among the 15 - 49 years age groups who also happen to be the most productive in any society (Quinn 2001). Whiteside and Sunter (2000) noted that South Africa has the fastest growing HIV/AIDS epidemic in the world. At the end of 1999 it was estimated that 19.94% of the adult population (aged 15 to 49 years) in South Africa was infected with HIV/AIDS (UNAIDS/WHO, 2000).

Although HIV/AIDS health promotion has been stepped up in the South African workplace in response to the dangers posed by the epidemic, the infection rate continues to rise. It appears that the HIV/AIDS health promotion efforts are not having the effect they are supposed to have. There is a need to conduct empirical research to determine why there is an apparent poor correlation between HIV/AIDS education efforts and HIV-preventive behaviour among the South African work force as well as determine more effective HIV/AIDS health promotion models.

There is limited literature on HIV/AIDS in the world of work in South Africa. Most of the work published has focused on warning the work sector on the dangers and impact of HIV/AIDS (Whiteside and Sunter, 2000), prevention programmes (Smart, 2000), policy issues (Strode and Smart, 2000; Van Niftrik, 2000) and legal issues (AIDS Law Project and The AIDS Legal network, 2001). In their review of academic research in 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 report a poor correlation between knowledge about HIV/AIDS and preventive health behaviour. Other than these contributions there is little academic research that has been conducted. The few published research reports focused on perceptions of

HIV/AIDS among mineworkers (Macheke and Campbell, 1998); prevention in African contexts (Van Dyk, 2001); knowledge attitudes and behaviour in a rural population (Peltzer, 2003); prevention among teenagers (Visser, 1996; Visser, Schoeman and Perold, 2004); AIDS risk among street children and youth (Richter and Swart-Kruger, 1995); AIDS education for health professionals (Eagle and Brouard, 1995) and perceptions of rural women (Walker, 2002). These studies cover a very diverse expanse of topics and make it difficult to generalise. It is imperative that more research focusing on HIV/AIDS prevention and health promotion in the world of work be conducted.

Research conducted in America and Europe on health issues such as HIV/AIDS has used various conceptual models to try and understand how people comply or fail to comply with health recommendations and treatment regimens. One of these conceptual models is the Health Belief Model (Becker and Maiman, 1975; Becker, Haefner, Kasl, Kirscht, Maiman and Rosenstock, 1977). According to the proponents of this model (Becker and Maiman, 1975; Becker, Haefner, Kasl, Kirscht, Maiman and Rosenstock, 1977; Feuerstein, Labbe and Kuczmierczyk, 1987) an individual's readiness to take action and engage in health - related behaviour (safer sex in the case of this study) relative to a particular health condition (HIV/AIDS in the case of the this study) 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 (HIV/AIDS) as well as their perception of the severity of the consequences of having the illness (physical and psychological suffering accompanied by rejection). 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 (safe sex practices) both in terms of its gains or potential benefits in reducing possible susceptibility and severity of the illness (AIDS), as well as perceived barriers to action (for example, fear of suffering and instant sexual gratification) will determine whether a person will engage in health behaviour. The third factor relates to access to cues to action. Cues for action refers to cues that trigger appropriate health behaviour. These cues can be either internal (for example, a person's belief system in relation to sex) or

external, that is stimuli in the environment (for example, the media used in AIDS education).

A number of non-South African studies in the realm of HIV/AIDS have been conducted using the Health Belief Model (Allard, 1989; Clarke, Lovegrove, Williams and Machperson, 2000; Hayes, 1991; Manual and Lavelle, 1991; Mattson, 1999; Montgomery, Joseph, Becker, Ostrow, Kessler and Kirsch, 1989; Steers, Elliot, Nemiro, Ditman and Oskamp, 1996; Wilson, Manual and Lavelle, 1991; Wulfert, Wan and Backus, 1996). The findings of these studies have been contradictory.

No South African empirical studies on the Health Belief Model in the context of HIV/AIDS have been identified. This study is a known first attempt in using the Health Belief Model to explore ways of promoting HIV/AIDS-preventive health behaviour. A question will be asked whether the formulation of HIV/AIDS training workshops based on the five dimensions of the Health Belief Model and using the technique of cognitive restructuring does not achieve improved HIV/AIDS health behaviour.

## **2. RESEARCH OBJECTIVES**

The objective of this research is to determine whether there will be any health beliefs and health behaviour differences between two groups of participants as a function of the kind of AIDS health promotion they receive. One group (Control group) will receive traditional HIV/AIDS information lectures, while the other (Experimental group) will receive cognitive restructuring workshops based on the Health Belief Model. The research will also attempt to determine the relationship between health beliefs and health behaviour.



The research question is posed as follows:

- 1) *Are there significant differences in HIV/AIDS health beliefs and health behaviour between participants receiving traditional HIV/AIDS education and those receiving beliefs restructuring workshops based on the Health Belief Model?*
- 2) *Is there a significant relationship between HIV/AIDS health beliefs and HIV/AIDS health behaviour?*

### **3. LITERATURE STUDY**

#### **3.1 Theoretical model**

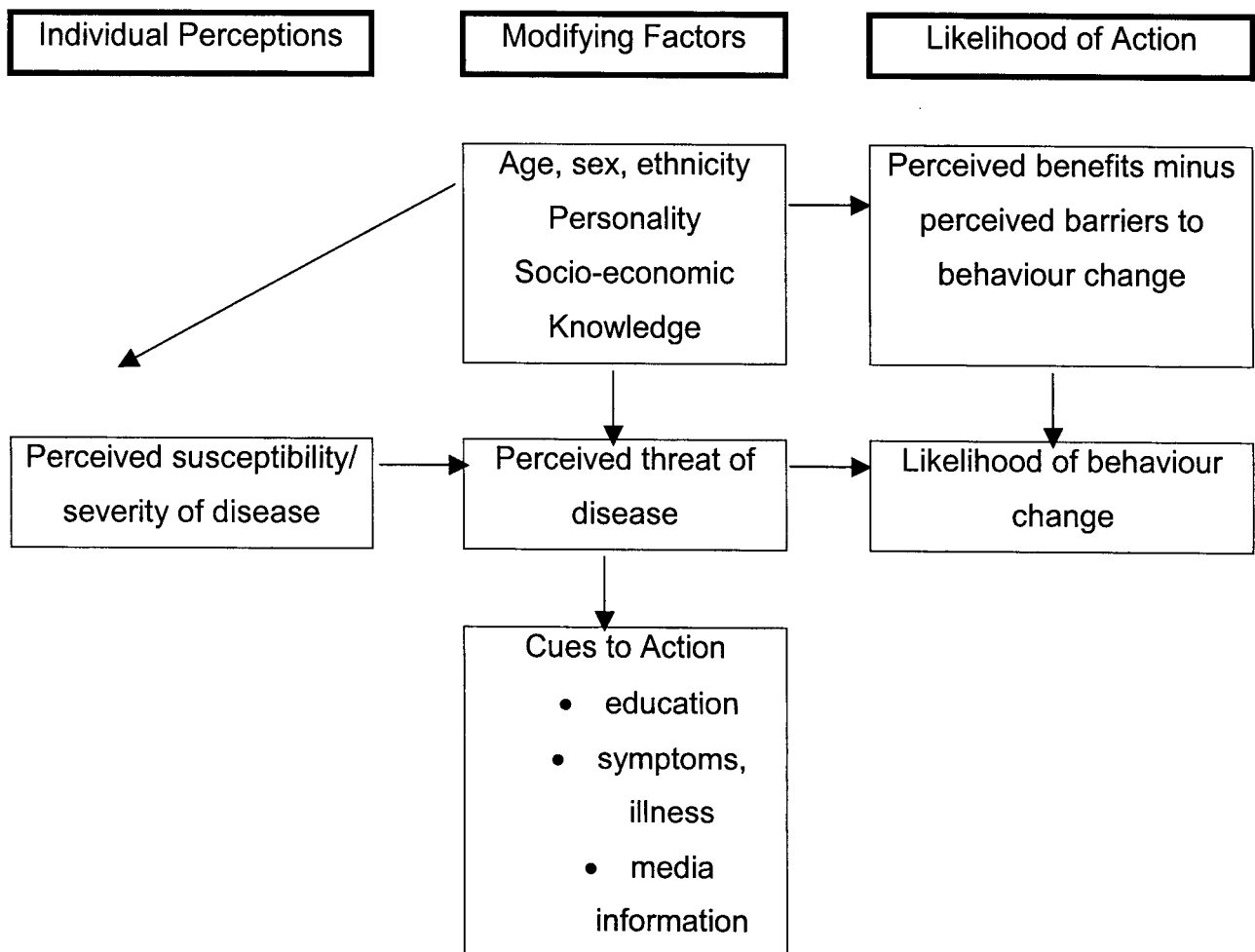
The Health Belief Model was first conceptualised in the 1950s by social psychologists in an effort to understand why people failed to participate in programmes to prevent or detect disease. Later it was extended to include people's response to symptoms, behaviour in response to diagnosis and to compliance with medical regimens (Janz, Champion and Strecher, 2002; Strecher, Champion and Rosentock, 1997). Becker *et. al* (1977) cite several studies spanning the 1960s and 1970s reflecting the use of the model to both discover and better understand the determinants of voluntary health-related actions.

The premise of the Health Belief Model is that people will take action to ward off, screen for or control health conditions:

- if they regard themselves as susceptible to the condition;
- if they believe it to have potentially serious consequences;
- if they believe that the course of action available to them would be beneficial in reducing either their vulnerability or the severity of the illness condition;

- and if they believe that the anticipated barriers (disadvantages) of engaging in the health protective behaviour are outweighed by the advantages of engaging in the behaviour.

In addition, there must be cues to action that will trigger the appropriate health behaviour (Becker and Maiman, 1975; Becker *et. al.*, 1977; Janz *et. al.*, 2002; Strecher *et. al.*, 1997). The components of the Health Belief Model are summarised in Figure 1.



**Figure 1: Summary of the key variables in the Health Belief Model (Strecher *et. al.* 1997)**

A brief commentary on all the components of the Health Belief Model (Strecher et. Al., 1997) follows:

*Perceived Susceptibility:* This refers to a person's subjective perception of the risk of contracting an illness. In the case of established illnesses it includes acceptance of diagnosis, personal estimates of resusceptibility and susceptibility to an illness in general.

*Perceived Severity:* This refers to feelings concerning the seriousness of contracting an illness or leaving it untreated. It includes evaluations of both medical and clinical consequences and possible social consequences.

The combination of perceived susceptibility and perceived severity constitutes *perceived threat*.

*Perceived Benefits:* This refers to a person's beliefs regarding the effectiveness the various actions intended to reduce the *perceived threat*. Thus, a person is likely to accept the recommended health action if she/he perceives that recommendation as efficacious.

*Perceived Barriers:* This refers to the negative aspects of the health action that may act as an impediment to undertaking the recommended health action. An unconscious cost-benefit analysis occurs, wherein the individual weighs the expected effectiveness of the health action against the costs or discomforts of engaging in the health action.

*Cues to Action:* These are events that trigger a person to engage in the self-protective health action. These cues may be internal (such as symptoms) or external (such as mass media communications, health education, interpersonal interaction).

*Other variables:* Diverse demographic, socio-psychological and structural variables may affect an individual's perceptions and thus indirectly influence health-related behaviour. Sociodemographic factors, particularly level of education, are thought to have indirect effect on behaviour by influencing the perception of susceptibility, severity, benefits and barriers.

*Self Efficacy:* Self efficacy was not part of the original Health Belief Model reported by Becker and Maiman (1975) and Becker *et. al.* (1977). Janz *et. al.* (2002) report that it was added in 1988 by Rosenstock, Strecher and Becker as a separate construct from the original Health Belief Model. Self efficacy refers to the conviction a person has that they can successfully execute the behaviour required to produce desired outcomes. Self efficacy was added to the Health Belief Model after realising that the original model focussed more on circumscribed preventive behaviour and not on lifestyle behaviours requiring long term change. The modification of lifelong habits is generally far more difficult to achieve than accepting once-off screening or immunization as suggested by the original Health Belief Model. Successful behaviour change is contingent upon a person's confidence that they can, in fact, alter their lifestyle completely. In addition to feeling threatened, people must feel themselves competent (self-efficacious) to overcome the perceived barriers to action.

## **3.2 Definition of concepts**

### *3.2.1 Health beliefs*

For the purpose of this study, health beliefs will be operationalised from the Health Belief Model as:

- 1) participants' perception of HIV/AIDS as a threat to themselves (that is, their perception of their vulnerability to HIV infection and their perception of severity of HIV infection);
- 2) participants' perceived advantage of engaging in safer health practices minus their perceived disadvantage of engaging in those practices ; and
- 3) participants' perceived self efficacy in engaging in safer sex practices (that is, their conviction that they can engage in self-protective sex behaviour.

### *3.2.2 Health Belief Model and HIV prevention*

The Health Belief Model has been widely used in research on HIV prevention. Steers, Elliot, Nemiro, Ditman and Oskamp (1996) examined how the different components of the Health Belief Model are predictive of HIV-preventive behaviour in students. Their hypothesis was that modifying participants' health beliefs might cause them to modify unsafe health behaviour. They found that the Health Belief Model predicted all HIV-preventive behaviour. Three of the Health Belief Model variables, specifically susceptibility, self - efficacy and social support, were most predictive of preventive sexual behaviour changes. Behaviour changes that could be attributable to HIV/AIDS awareness were predicted primarily by perceived susceptibility. Current behaviours were predicted by social support, which suggests that a supportive social environment may be important for encouraging safer sex behaviours. They also found some ethnic differences in their sample. Their explanation was that the Health Belief Model is a person-centered model based on individual beliefs and, therefore, was unsuited to cultures in which people do not distinguish themselves from people to whom they feel connected, such as Hispanics and African-Americans.

In a similar telephone survey to explore relations between AIDS knowledge, beliefs, and reported AIDS-preventive practices, Allard (1989) found a positive relationship between AIDS-preventive practices and one of the following health beliefs: perceived susceptibility, perceived severity, perceived benefits of prevention and having a strong

general health motivation. A similar finding was made in a similar study trying to determine predictors of HIV-preventive behaviour among Zimbabwean students (Wilson, Lavelle, Greenspan and Wilson, 1991). Perceived susceptibility, access to health care and belief in the efficacy of preventive measures predicted HIV-preventive behaviour. Multiple linear regression showed self-efficacy, belief in the efficacy of preventive steps, perceived barriers to action and belief in the effectiveness of preventive practices to predict behavioural risk reduction more among males than among females.

In another Zimbabwean study Wilson, Manual and Lavelle (1991) examined health beliefs in relation to condom use among students. The dimensions of the Health Belief Model they assessed were susceptibility, severity, solution (that is, self-efficacy), social support (that is, significant others' support for condom use), facilitating cues and barriers. They found that, among males, condom use was predicted by personal susceptibility, solution, social support and barriers. The study proposed that AIDS education needs to shift away from mass media approaches to approaches that alter people's beliefs.

Mattson (1999) was interested in determining how pre- and post-HIV test counselling could be used as a communication cue to action among college students. His findings were that perceptions of severity of HIV/AIDS are not associated with clients' decisions whether to comply or not comply with safe sex recommendations. However, Mattson found that perceptions of personal susceptibility to HIV/AIDS were moderately related to compliance with safe sex recommendations on post test counselling. Also, clients' perceptions of benefits and barriers to safer sex prior to HIV test counselling were not associated with safer sex recommendations. In a similar study Albarracin, McNatt, Klein, Mitchell, Ho and Kumkale (2003) examined whether persuasive communication resulted in cognitive and behavioural changes. They found that communication intended to increase condom use had psychological influences. However, they found that HIV-

preventive communication had no generalized impact on perceived susceptibility, severity, negotiation skills and condom use. Also, communication that increased self-efficacy increased the intention to engage in HIV-preventive behaviour.

Wulfert, Wan and Backus (1996) explored gay men's sexual risk behaviour from the perspective of three conceptual models of which the Health Belief Model formed a part. The findings showed no relationship between condom use and either perceived severity of or vulnerability to HIV infection. This finding seems to suggest that HIV prevention does not fit well within the conceptual framework of the Health Belief Model.

While most of the studies reviewed support the use of the Health Belief Model, one study questioned its usefulness. Montgomery, Joseph, Becker, Ostrow, Kessler and Kirscht (1989) assessed the utility of the Health Belief Model in understanding AIDS preventive behaviour in a cohort of homosexual men assessed over three visits to an AIDS clinic. They found susceptibility to be of little importance in determining preventive behaviour. Even less significant were perceptions of barriers to change and perceived benefits. Only measures of severity and socio-demographic variables had a consistent positive effect on behaviour change. They conclude that the Health Belief Model performed less adequately in predicting compliance behaviour than previously reported.

An assessment of the literature indicates no conclusive evidence on the usefulness of the Health Belief Model in predicting proper HIV-preventive health behaviour. Moreover, all of the studies reviewed were conducted outside the Republic of South Africa. So far, studies conducted in South Africa on the use of the Health Belief Model have not been found. The only two studies that referred to beliefs about AIDS were one by Van Dyk (2001) and by Pelzer (2003). While not directly citing the Health Belief Model, Van Dyk (2001) reported on traditional African beliefs and how those beliefs determine perceptions of AIDS causality, sexuality and condom use. She advocates the integration of African health belief systems into AIDS education in Africa. Pelzer (2003) used focus

groups to assess participants' knowledge, opinions and attitudes about AIDS. He found a weak link between knowledge about HIV/AIDS and proper AIDS health behaviour among many of the rural participants. Also, knowledge was positively associated with consistent condom use and reduced stigma towards people living with HIV/AIDS. Knowledge was also inversely associated with HIV risk behaviours. A lot can be learned on health beliefs of traditional and/or rural Africans from Van Dyk and Pelzer's reports.

### 3.2.3 Health behaviour.

Feuerstein *et.al.* (1987) have defined health behaviour as: "any activity undertaken by a person believing himself or herself to be healthy for the purpose of preventing disease or detecting it in an asymptomatic stage". (p.240). Schlebusch (1990) takes this definition further with his concept of health protective behaviour (HPB), which he describes 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.* (1987) and Schlebusch (1990). Glanz, Rimer and Lewis (2002) 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" (p.11). For the purpose of this study health behaviour refers to actions participants take to protect themselves against HIV infection.

The other construct relevant to this study, namely health promotion, is explained below.

### 3.2.4 Health promotion

Health promotion or health education is not an easy concept to define as it is conceptualised differently by different theorists and researchers. Glanz, Rimer and Lewis (2002) give O'Donnell's definition which defines health promotion or education as



“the science and art of helping people change their lifestyle towards optimum health”. (p. 9). Glanz *et. al* go on to explain that lifestyle change can be attained by a combination of efforts to enhance awareness, change behaviour and create environments that support good health practices. Thus, any educational effort that aims to change people’s behaviour for the benefit of their health could be characterised as health promotion.

While some authors like Glanz *et. al.* (2002) and Kemm and Close (1995) do not make a distinction between health promotion and health education, other authors do. Chen (2001) sees health education as efforts to provide individuals with learning opportunities to voluntarily elevate 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. It supplements the shortcomings of health education, which is more individual focused.

The best conceptualisation of health promotion is given by McDonald and Bunton (2002). They see health promotion as a strategy for promoting the health of whole populations. Health promotion can be undertaken at an individual or a structural level. At an individual level it focuses on lifestyle change, that is the identification and reduction of behavioural risk factors associated with illness or premature death. This is also known as health education and uses educational methodologies to try and change lifestyle. At a structural level health promotion focuses on macro-social and political processes necessary for health improvement. The themes often center around fiscal and legislative measures aimed at building healthy public policies (for example, prohibition of public smoking in South Africa, immunization, accessibility to clean water and so on).

For the purpose of this study the individual approach to health promotion given by McDonald and Bunton (2002) will be the preferred definition. The health promotion

exercise used will be the HIV/AIDS education workshops that will be conducted with all participants.

#### **4. RESEARCH HYPOTHESES AND PROBLEMS**

The research was motivated by the anecdotal observation that the HIV infection rate in South Africa continues to rise in spite of efforts to educate people about HIV/AIDS. Review of available literature shows that knowledge about HIV/AIDS does not necessarily result in improved HIV-preventive behaviour (Macheke and Campbell, 1998). Most AIDS education in South Africa tends to subscribe to the Knowledge-Attitude-Behaviour (KAB) Model, which is based on the premise that increased knowledge would lead to change in attitudes to the behaviour which in turn will lead to behaviour change. Kemm and Close (1995) caution that the KAB Model is not adequate in predicting compliance behaviour. While reinforcing the importance of knowledge, they point out that beliefs are important in predicting and influencing health behaviour.

The current study used a health promotion approach based on the Health Belief Model in an attempt to achieve appropriate HIV/AIDS health behaviour. The following hypotheses were tested:

##### **Hypothesis 1**

Null hypothesis: There will be no differences in health beliefs between participants receiving a lecture format HIV/AIDS health promotion and those participating in a belief restructuring workshop at one month follow-up assessment.

## **Hypothesis 2**

Null hypothesis: There will be no differences in health behaviour between participants receiving a lecture format HIV/AIDS health promotion and those participating in a belief restructuring workshop at one month follow-up assessment.

## **Hypothesis 3**

Null hypothesis: There will be no differences in health beliefs between pre-workshop assessment and post-workshop assessment.

## **Hypothesis 4**

Null hypothesis: There will be no differences in health behaviour between pre-workshop assessment and post-workshop assessment.

## **Hypothesis 5**

Null hypothesis: There will be no relationship between health beliefs and health behaviour.

## **Hypothesis 6**

Null hypothesis: There will be no relationship between the Health Belief Model variables and health behaviour at post-workshop assessment.

## 5. RESEARCH METHODOLOGY

### *5.1 Research design*

The research design chosen for this study was what Christensen (2001) describes as the before-after research design. This is an experimental design in which the treatment effect is assessed by comparing the difference between the experimental and control groups' pre- and posttest scores. It used what Myers (1980) termed a two-group design. In this design one group, the control group, receives the "zero value" (that is no value at all) of the independent variable (the treatment condition). The other group, the experimental group, is exposed to a non-zero value of the independent variable. Both groups are then measured on the dependent variable and their behaviour compared.

According to Christensen (2001) in a before-after research design, subjects are randomly assigned to groups and pre-workshopped on the dependent variable (behaviour). The independent variable (the treatment condition) is then administered to the experimental group. The experimental and control groups are then post-workshopped on the dependent variable. The differences between pre- and posttest scores for the two groups are then tested statistically to determine if the independent variable had any effect.

### *5.2 Sample and procedure*

Seventy-eight (78) employees in a government department based in Pretoria and one other province were recruited to participate in the study. Thirty-two (32) participants were randomly selected at the head office in Pretoria and assigned to the experimental group. The 46 participants who constituted the control group were not randomly assigned. They were recruited as part of their participation in a HIV/AIDS road-show to their provincial office. The demographic characteristics of the sample at pre-workshop

assessment and post-workshop assessment are presented in Table 5.1 and Table 5.2.

Table 5.1: Demographic characteristics of the participants at pre-workshop.

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>PERCENTAGE</b>
Sex Male (mean age = 36.4)	34	43.5
Female (mean age =39.6)	44	56.4
Own HIV status known: Male	30	88.2
Female	32	72.7
Knowing a person living with HIV/AIDS:		
Male	24	70.6
Female	32	72.7

Table 5.2: Demographic characteristics of the participants at post-workshop.

<b>VARIABLE</b>	<b>FREQUENCY</b>	<b>PERCENTAGE</b>
Sex Male (mean age = 38.1)	22	40.7
Female (mean age = 36.4)	32	59.2
Own HIV status known: Male	19	86.3
Female	19	59.2

At the beginning there were 78 participants, with females outnumbering males. A substantial number of participants had dropped out at post test. The average age for males was higher at post-workshop, while opposite was the case for females. A larger percentage of both male and female participants knew their own HIV status at pre-workshop. The picture was similar at post-workshop, although it did not represent an improvement. The majority of participants at pre-workshop knew someone living with HIV/AIDS or someone who died of an AIDS-related medical condition.

Both groups were given an experimenter-designed AIDS Beliefs Questionnaire (based on the Health Belief Model) to complete. They were also required to complete an experimenter-designed AIDS Health Behaviour questionnaire in which they reported the frequency of the various HIV/AIDS health behaviours in which they engaged during the past month.

The control group was put through a lecture format HIV/AIDS health promotion programme that gave facts and figures about HIV AIDS. A question and answer session followed the presentation. A person living with HIV/AIDS co-presented the workshop. Thus, the control group were exposed to external cues to action in the form of facts and figures on the dangers of HIV/AIDS, slides and pictures as well as a person living with HIV.

The experimental group was put through an HIV/AIDS beliefs restructuring health promotion workshop that identified various health beliefs that people in the South African society hold about HIV/AIDS and taught them to dispute the beliefs that are irrational while reinforcing positive beliefs. The workshop was based on the principles of cognitive restructuring as it focused on changing beliefs that drive behaviour. Cognitive restructuring techniques were developed by cognitive psychotherapists such as Ellis, Michenbaum and Beck (Corey, 1986; Hawton, Salkovskis, Kirk and Clark, 1990; Patterson, 1986). Corey (1986), Hawton *et.al.* (1990) and Patterson (1986) maintain

that these cognitive restructuring techniques are essential in changing the premises, beliefs, assumptions and attitudes underlying the cognitions or thoughts that drive maladaptive behaviour. Cognitive behavioural techniques have been used successfully in the treatment of patients presenting for Coronary Artery Surgery (Gerber, 1990) and dental surgery (Balkisson, 1990). The Health Belief Model is essentially a cognitive theory, therefore, cognitive restructuring was an appropriate technique to use in attempting to change AIDS-related health beliefs and health behaviour. The experimental group were exposed only to internal cues to action in the form of questioning the beliefs they had about HIV/AIDS, reinforcing the positive beliefs and disputing negative ones.

One month after exposure to the HIV/AIDS health promotion workshops, both groups completed the AIDS Beliefs Questionnaire as well as the HIV/AIDS Health Behaviour questionnaire. At post-workshop, the total number of participants who responded was 54 (Control group, n = 29; and experimental group, n = 25).

### *5.3 Measures*

#### *5.3.1 Sociodemographic measure*

The sociodemographic variables were limited to sex, age, knowledge of own HIV status and knowledge of a person living with HIV/AIDS or a person who died of an AIDS-related condition (Cover letter and demographic measure are shown as Annexure A).

#### *5.3.2 Health beliefs*

Health beliefs were measured using an experimenter designed AIDS Beliefs Questionnaire (Annexure B). This is a 23-item 5-point Likert scaled questionnaire based on the Health Belief Model. The items are selected in accordance with the five

components of the Health Belief Model. This resulted in five sub-scales. The subscales were perceived susceptibility (statements 1 – 4), perceived severity (statements 5 – 9), perceived benefits of compliance behaviour (statements 10 – 14), perceived barriers to compliance behaviour (statements 15 – 19) and self-efficacy (statements 20 – 23).

The scoring was done by allocating two points to every response that strongly agreed with a positive statement (or strongly disagreed with a negative statement) and one point for every statement that agreed with a positive statement (or disagreed with a negative statement). Uncertain responses were scored zero. Two points were lost for strongly disagreeing with a positive statement (or strongly agreeing with a negative statement). One point was lost for disagreeing with a positive statement (or agreeing with a negative statement). The total achievable frequency score for the entire AIDS Beliefs Questionnaire is 46.

### *5.3.3 Health behaviour.*

Health behaviour was measured by means of an experimenter designed AIDS Health Behaviour Questionnaire (Annexure C). This is a 15-item scale in which respondents have to indicate the health-protective behaviours in which they engaged during the past month. Its design was based on Feuerstein *et. al.*'s (1987) idea of a card sort in which respondents had to select the health behaviours they practised.

The scoring was done by allocating one point for each chosen statement. The final score was made up of a frequency score. A total score of 15 could be achieved.

### *5.4 Analysis of results*

In the first analysis the scores of each subject on both administrations of the AIDS Beliefs Questionnaire and the AIDS Health Behaviour Questionnaire were recorded and



captured into the Statistical Package for the Social Sciences (SPSS). Then the means (averages) for the two groups were computed. The means for the two groups were then subjected to the Student's t test to determine whether there were any significant differences between them in the pre-workshop and in the post-workshop conditions. Runyon and Haber (1980) suggest that the t-ratio be used to determine the differences between means (two sample case) or for testing the hypothesis that a given sample was drawn from a population with the mean specified under the null hypothesis (one sample case). It is used when the standard deviations are not known.

The null hypotheses were, firstly that there would be no differences in health beliefs and health behaviour between the two groups and, secondly, that there would be no differences in health beliefs and health behaviour between pre-test and post-test conditions.

The second analysis measured the relationship between AIDS beliefs (as measured by the AIDS Beliefs Questionnaire) and Health Behaviour (as measured by the AIDS Health Behaviour questionnaire). This was done by computing a correlation coefficient between the two measures to determine the extent to which health beliefs are related to health behaviour. According to Runyon and Haber (1980) and Myers (1980) correlation studies are relevant when we want to study the degree of relationship between two or more variables. Once the relationship is known, it can be used to make predictions.

The third analysis measured inter-correlations among the five sub-scales of the AIDS Beliefs Questionnaire. The correlations were then subjected to a simple regression analysis to determine the extent to which each variable of the Health Belief Model predicted health behaviour.

## 6. RESULTS

The raw data was analysed using the Statistical Package for the Social Sciences (SPSS 12.0). Statistics computed included frequencies, means and standard deviations, t-tests, Pearson correlations and regression analyses. Only the significant statistics are presented below.

### *6.1 Differences in health beliefs and health behaviour between the control group and the experimental group at pre-workshop and post-workshop*

No statistically significant differences in health beliefs between the control group and the experimental group were found at pre-workshop for both males ( $t = -1.042$ ;  $df = 32$  *ns.*) and females ( $t = -1.449$ ;  $df = 42$  *ns.*). Similarly, there were no significant differences in health behaviour at post-workshop for males ( $t = 0.006$ ;  $df = 32$  *ns.*) and for females ( $t = -1.360$ ;  $df = 42$  *ns.*).

As Table 6.1 illustrates, there were significant differences in health beliefs between pre-workshop and post-workshop conditions only for control group females ( $t = -2.432$ ;  $p < 0.05$ ;  $df = 34$ ). The mean at post-workshop was higher than at pre-workshop. No other significant differences were observed between the control group and the experimental group in both health beliefs and health behaviour.

Table 6.1: Means, Standard Deviations and t values at pre-workshop and post-workshop (Females)

VARIABLES	CONTROL GROUP				t	EXPERIMENTAL GROUP				
	PRE-WORKSHOP n = 22		POST-WORKSHOP n = 14			PRE-WORKSHOP n = 22		POST-WORKSHOP n = 18		
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Health Beliefs	25.23	6.48	31.29	8.41	-2.432*	28.09	6.61	31.39	5.15	-1.727
Health Behaviour	3.95	2.49	3.93	3.29	-1.007	4.18	3.41	4.50	3.09	-0.306

\*. P < 0.05

VARIABLES	CONTROL GROUP				t	EXPERIMENTAL GROUP				
	PRE-WORKSHOP n = 22		POST-WORKSHOP n = 14			PRE-WORKSHOP n = 22		POST-WORKSHOP n = 18		t
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Health Beliefs	25.23	6.48	31.29	8.41	-2.432*	28.09	6.61	31.39	5.15	-1.727
Health Behaviour	3.95	2.49	3.93	3.29	-1.007	4.18	3.41	4.50	3.09	-0.306

\*. P < 0.05

The pre-workshop and post-workshop health beliefs and health behaviour scores for the whole population were compared as illustrated on Table 6.2. There were significant differences in health beliefs ( $t = -2.777$ ;  $p < 0.05$ ;  $df = 130$ ). The mean at post-workshop was significantly higher than at pre-workshop. There were no significant differences in health behaviour between pre-workshop and post-workshop.

Table 6.2: Means, Standard Deviations and t values on health beliefs and health behaviour at pre-workshop and post-workshop.

VARIABLES	PRE- WORKSHOP n = 78		POST- WORKSHOP n = 54		t
	Mean	S.D.	Mean	S.D.	
Health Beliefs	26.46	6.69	29.89	7.36	-2.777*
Health Behaviour	4.28	3.26	3.98	3.09	0.531

\*.  $p < 0.05$

### *6.2 Relationship between health beliefs and health behaviour*

The relationship between health beliefs and health behaviour for the entire population was subjected to a Pearson correlation. No significant relationship was found between these two variables ( $r = 0.112$ ).

The AIDS Beliefs Questionnaire was then broken down into five sub-scales as determined by the Health Belief Model variables, namely perceived susceptibility, perceived severity, perceived benefits, perceived barriers and self-efficacy. A score was allocated for each variable and these scores were correlated with the health behaviour scores. This test was only done at post-workshop. The results for the control group are shown on Table 6.3. As Table 6.3 illustrates, perceived susceptibility was positively related to perceived benefits ( $r = 0.608$ ;  $p < 0.01$ ), perceived barriers ( $r = 0.632$ ;  $p < 0.01$ ) and self-efficacy ( $r = 0.555$ ;  $p < 0.01$ ). Perceived benefits was positively related to perceived barriers ( $r = 0.627$ ;  $p < 0.01$ ) and self-efficacy ( $r = 0.623$ ;  $p < 0.01$ ). Perceived barriers was positively related to self-efficacy. None of the Health Belief Model variables was significantly related to health behaviour.

The correlations were subjected to a Regression analysis to determine which Health Belief Model variables predicted health behaviour. The Regression coefficient was not significant (R-Square = 0.290).

Table 6.3: Correlation matrix of the Health Belief Model variables and health behaviour at post-workshop (Control Group).

	1	2	3	4	5	6
1. Perceived Susceptibility	1.000					
2. Perceived Severity	.306	1.000				

3. Perceived Benefits	.608*	.324	1.000			
4. Perceived Barriers	.632*	.158	.627*	1.000		
5. Self-efficacy	.555*	.268	.623*	.691*	1.000	
6. Health Behaviour	.118	-.353	.259	.144	.064	1.000

---

n = 29

\*.  $p < 0.01$  (2-tailed)

The correlation matrix for the experimental group is shown on Table 6.4 There was an inverse relationship between perceived susceptibility and health behaviour ( $r = -0.397$ ;  $p < 0.005$ ). Perceived severity was positively related to perceived barriers ( $r = 0.546$ ;  $p < 0.01$ ) and self-efficacy ( $r = 0.503$ ;  $p < 0.05$ ). None of the Health Belief Model variables was significantly related to health behaviour.

The correlations were subjected to a Regression analysis to determine which Health Belief Model variables best predicted health behaviour. The Regression coefficient was not significant (R-Square = 0.205).

Table 6.4: Correlation matrix of the Health Belief Model variables and health behaviour at post-workshop (Experimental Group).

	1	2	3	4	5	6
1. Perceived Susceptibility	1.000					
2. Perceived Severity	.082	1.000				
3. Perceived Benefits	.306	-.163	1.000			
4. Perceived Barriers	.338	.546**	.301	1.000		
5. Self-efficacy	-.118	.503*	-.044	.276	1.000	
6. Health Behaviour	-.397*	-.053	-.165	-.093	.203	1.000

n = 25

\*. P < 0.05 (2-tailed)

\*\* . P < 0.01 (2-tailed)



Table 6.5 shows the correlation matrix for the control group and the experimental group at post-workshop. Perceived susceptibility was positively related to perceived benefits ( $r = 0.517$ ;  $p < 0.01$ ), perceived barriers ( $r = 0.530$ ;  $p < 0.01$ ) and self-efficacy ( $r = 0.339$ ;  $p < 0.05$ ). Perceived severity was positively related to self-efficacy ( $r = 0.351$ ;  $p < 0.01$ ). Perceived benefits was positively related to perceived barriers ( $r = 0.520$ ;  $p < 0.01$ ) and self-efficacy ( $r = 0.363$ ;  $p < 0.01$ ). Self-efficacy was positively related to all the Health Belief Model variables. None of the Health Belief Model variables was significantly related to health behaviour.

The correlations were subjected to a Regression analysis to determine which Health Belief Model variables best predicted health behaviour. The Regression coefficient was not significant (R-Square = 0.104).

Table 6.5: Correlation matrix of the Health Belief Model variables and health behaviour at post-workshop.

	1	2	3	4	5	6
1. Perceived Susceptibility	1.000					
2. Perceived Severity	.249	1.000				
3. Perceived Benefits	.517*	.166	1.000			

4. Perceived Barriers	.530*	.253	.520*	1.000		
5. Self-efficacy	.339**	.351*	.363*	.527*	1.000	
6. Health Behaviour	-.079	-.194	.047	-.019	.148	1.000

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n = 54      \*. p < 0.01 (2-tailed)      \*\*. p < 0.05

In conclusion, the results showed no significant differences in health beliefs and health behaviour between the control group and the experimental group. Significant differences in health beliefs were found between pre-workshop and post-workshop. There was an improvement in health beliefs at post-workshop for the entire sample. There were no significant differences in health behaviour. There was no significant relationship between health beliefs and health behaviour. Significant relationships were observed among the variables of the Health Belief Model. None of the health Belief Model variables predicted health behaviour.

## 7. DISCUSSION

The results obtained and presented in the previous section will be discussed in terms of the aim and hypotheses which motivated this study.

### *7.1 Differences in health beliefs and health behaviour*

The results indicated no significant differences in health beliefs between participants receiving a lecture format HIV/AIDS health promotion and those taking part in a belief

restructuring workshop. Null hypothesis 1 is accepted.

There were no significant differences in health behaviour for the control group and the experimental group at one month follow-up assessment. This shows that although a health promotion exercise may improve positive health promoting beliefs in people, behaviour may remain the same. Health beliefs do not necessarily translate to behaviour. This is consistent with the finding by Montgomery *et. al* (1989) that the Health Belief Model is not successful in predicting the initiation or maintenance of behavioural risk reduction for AIDS. They, however, note that the Health Belief Model is more adequate in predicting other health threats. They suggest that AIDS would require the development of more adequate theoretical frameworks than the Health Belief Model. Allard (1989) also observed that neither knowledge nor beliefs necessarily precede the behaviour with which they are associated. Knowledge and beliefs may help bring behaviour about, or result from it, probably through people selectively acquiring knowledge and beliefs consistent with behaviour already determined by quite different influences. Null hypothesis 2 is accepted.

It was only the control group females who demonstrated a change in health beliefs between pre-workshop and post-workshop. The control group females reported much healthier beliefs about HIV/AIDS one month after participating in a health promotion workshop. This implies the female control participants acquired positive health promoting beliefs. This is consistent with Allard's (1989) finding that women tend to have higher general health motivation than men. The finding further suggests that lecture format health promotion exercises can have a positive effect on people's beliefs about health conditions (HIV/AIDS in the case of this study). Although the result for control males was not significant, the mean for males was slightly higher at post-workshop. This improvement in health beliefs for the control group could be an indication of the importance of cues for action in HIV/AIDS health promotion. The control group were exposed to external cues to action by means of posters and a

person living with HIV. For the entire sample there was a significant improvement in health beliefs at one month follow-up. The implication of this finding is that both HIV/AIDS health promotion interventions reinforced people's beliefs about the dangers of HIV/AIDS. Null hypothesis 3 is rejected.

There were no differences in health behaviour between pre-workshop and post-workshop assessments. This result could imply one of two things: either the two health promotion approaches failed in influencing people to change their health behaviour or the health behaviour of the sample was already mature at the beginning of the study. With the exception of control group females at post-workshop, there was a slight improvement in the mean for health behaviour. This implies that although there was no statistical significance, the frequency of reported health behaviour did show an improvement. Null hypothesis 4 is accepted.

### *7.2 Relationship between health beliefs and health behaviour.*

There was no statistically significant relationship between health beliefs and health behaviour at post-workshop ( $r = 0.112$ ). The implication of this finding is that when people have positive health beliefs - that is, beliefs conducive to good health – they do not necessarily demonstrate positive health protective behaviour and vice-versa. This finding further strengthens the conclusion of other researchers that HIV/AIDS does not fit well within the framework of the Health Belief Model (Montgomery *et.al.*, 1989; and Wulfert *et.al.*, 1996). Null hypothesis 5 is accepted.

#### *7.2.1 Inter-correlations for the control group post-workshop.*

When the AIDS Beliefs Questionnaire post-workshop scores for both groups were subdivided into sub-scales according to the five variables of the Health Belief Model and each sub-scale correlated with the health behaviour score, several significant

relationships were observed.

For the control group perceived susceptibility was positively related to both perceived benefits and perceived barriers. The only rational explanation for this relationship is that once people have identified HIV/AIDS as a threat to themselves, they do a cost-benefit analysis between the effectiveness of the recommended health behaviour and the impediments to that recommended health behaviour. This correlation should not be interpreted as two conflicting behaviours. Rather, it should be interpreted as two poles of a continuum along which people respond to the threat of HIV/AIDS. This interpretation is further clarified by the positive relationship observed between perceived barriers and perceived benefits. This shows that benefits and barriers are not mutually exclusive. They coexist and people have to create balance between them as suggested by Strecher *et.al.*(1997).

Perceived susceptibility was positively correlated with self-efficacy. This means participants acknowledged their vulnerability to HIV/AIDS and were confident about their ability to take the necessary action to prevent infection and to protect themselves.

Self-efficacy was also positively related to both perceived barriers and perceived benefits. The explanation for this relationship is that participants knew what to do to protect themselves against HIV/AIDS. In their self-protective behaviour they acknowledged both the costs and benefits of health behaviour and tried to create a balance between them.

None of the Health Belief Model variables significantly correlated with health behaviour. This is interpreted to mean that, as Montgomery *et. al.* (1989) suggested, the Health Belief Model is not useful in understanding HIV/AIDS. When the correlations were entered into a Regression model, none of them was a predictor of health behaviour.

### *7.2.2 Inter-correlations for the experimental group post-workshop*

For the experimental group perceived severity was positively related to both perceived barriers and perceived benefits. This implies that the evaluation of the seriousness of HIV/AIDS was accompanied by a belief in the benefits of the recommended health behaviour. These benefits were then balanced with the barriers to compliance before the appropriate behaviour is chosen. If the perceived benefits outweigh the perceived barriers, compliance behaviour can be expected. If barriers outweigh the perceived benefits there is likely to be high levels of noncompliance with recommended health behaviour. This could explain the negative correlation observed between perceived susceptibility and health behaviour. It could be that the experimental group participants perceived more barriers than benefits. This is not a desirable relationship as it suggests perception of one's own vulnerability was not likely to influence participants to engage in HIV protective behaviour.

The experimental group also showed a positive relationship between perceived severity and self-efficacy. The interpretation of this relationship is that participants had the confidence to engage in self-protective behaviour against the condition whose consequences they perceived as serious.

None of the Health Belief Model variables was positively related to health behaviour. The implication is that, for the experimental group, beliefs about HIV/AIDS did not influence people to engage in positive health behaviour. The positive health behaviour reported was probably related to factors other than the Health Belief Model variables.

When the correlations were entered into a Regression model, none of the variables predicted health behaviour.

### 7.2.3 Inter-correlations for the entire sample post-workshop

The inter-correlation for the Health Belief Model variables and health behaviour for the entire sample yielded some statistically significant relationships.

Self-efficacy was positively related to perceived susceptibility, perceived severity and perceived barriers. These interrelationships show that one month after participating in the health promotion workshops the participants perceived HIV/AIDS as a threat (perceived susceptibility combined with perceived severity). In response to this threat they were confident in their ability to alter their behaviour (self-efficacy) and believed that their behaviour change would be beneficial (perceived benefits). They acknowledged the costs (perceived barriers) of compliance behaviour and believed that they could overcome those perceived barriers.

There was also a positive relationship between perceived benefits and perceived barriers. The interpretation of this relationship is that benefits and barriers are opposite poles on a continuum. People have to weigh the benefits against the costs and come to a compromise that suits them. Strecher *et. al.* (1997) referred to the cost-benefit analysis that people engage in when they have to choose an appropriate course of action in response to a perceived health threat. Hence, it is not unusual for perceived benefits to be positively related to perceived barriers.

None of the Health Belief Model variables was positively related to AIDS health behaviour nor predicted health behaviour. This finding corroborates what Montgomery *et. al.* (1989) found in their study. They found that, with the exception of perceived severity, none of the Health Belief Model variables predicted high-risk behaviour prevention in their sample of gay men. This finding, however, contradicts the finding made by Wilson, Manual and Lavelle (1991) in their study among Zimbabwean students. They found that susceptibility, severity, solution (that is, self-efficacy), barriers

and social support (that is, peers' support for condom use) predicted condom use in males.

Null hypothesis 6 is accepted.

## **8. CONCLUSION**

The aim of this study was to determine, firstly whether there would be any differences in health beliefs and health behaviour between two groups of participants as a function of the kind of HIV/AIDS health promotion exercise they participated in. One group participated in a lecture type of health promotion workshop, while the other participated in an informal discussion aimed at restructuring beliefs about HIV/AIDS. Both groups were assessed on health beliefs and health behaviour prior to the workshops and one month after participating in the workshops. Secondly, the study sought to determine whether there would be a relationship between health beliefs and health behaviour.

The results did not show statistically significant differences in health beliefs and health behaviour between the two groups of participants at the two periods of assessment. There was an improvement in health beliefs that was noted one month after participation in the workshops. There was no change in health behaviour one month after participating in the health promotion workshops.

The results did not show a statistically significant relationship between health beliefs and health behaviour. Significant relationships were observed among the five variables that constitute the Health Belief Model. However, none of the Health Belief Model variables predicted, nor correlated with, health behaviour.

It is concluded that the independent variable (beliefs restructuring workshops) had no effect on AIDS health behaviour. Instead, a lecture type workshop had a positive effect



on health beliefs a month later although it had no effect on health behaviour. It appears that information giving workshops with relevant external cues to action are the appropriate method of doing HIV/AIDS education in South Africa. This study has failed to show that positive health beliefs result in positive health behaviour.

## **9. RECOMMENDATIONS FOR FURTHER RESEARCH**

9.1 This study is a known first attempt to research the utility of the Health Belief Model in workplace HIV/AIDS health promotion in South Africa. Further studies need to be conducted using different research designs and different populations, particularly prepubescent children who have not yet acquired fixed sexual behaviour patterns.

9.2 Other health behaviour theories that exist in the health psychology literature (Glanz *et. al.*, 2002; Strecher *et. al.*, 1989) need to be subjected to research to test their utility in the fight against HIV/AIDS. Two theories that could be relevant to HIV/AIDS are the Theory of Reasoned Action and the Theory of Planned Behaviour.

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## **ANNEXURE A – COVER LETTER AND BIOGRAPHICAL QUESTIONNAIRE**

Dear colleague

Thank you for agreeing to participate in this HIV/AIDS health promotion workshop. Before the workshop starts I request you to complete the AIDS Beliefs Questionnaire (2 pages) and the AIDS Health Behaviour Questionnaire (1 page). The aim is to see how you think about HIV/AIDS and what you do to protect yourself. You will be requested to complete the two questionnaires again after one month to see how you think about AIDS then.

Your participation is anonymous and your responses will be treated in the strictest confidence. The information gathered will be used to write a research report in fulfilment of the requirements for a Master of Philosophy degree. You will be given feedback.

Thank you.

Emmanuel Tlou



## BIOGRAPHICAL DETAILS

*Please provide the following information about yourself:*

1. Sex: Male [  ] Female [  ]

2. Age: .....

3. Highest level of education:.....

3. Do you know your HIV status? Yes [  ] No [  ]

4. Do you know someone living with HIV/AIDS  
or who died of an AIDS-related condition? Yes [  ] No [  ]

**ANNEXURE B: AIDS BELIEFS QUESTIONNAIRE**

**AIDS BELIEFS QUESTIONNAIRE**

The following statements represent some of the opinions that people have about HIV/AIDS. Using the 5-point scale illustrated below, please indicate the extent to which you agree or disagree with each statement. The options are:

1	2	3	4	5
Strongly agree	Agree	Uncertain	Disagree	Strongly disagree

*Indicate your response by writing, in the brackets [ ] next to each statement, the number that corresponds to the option you choose on the 5-point scale. For example, if you agree with a statement you will write the number 2 in the brackets [ ] next to the statement. If you strongly disagree you will write the number 5 in the brackets [ ] next to the statement and so on.*

The statements are as follows:

1. AIDS is real and can affect anybody, including me. [ ]
2. It is possible for me to contract the HI virus. [ ]
3. I am personally at risk of HIV infection. [ ]
4. AIDS not only infects people who are reckless in their sexual behaviour, I can also get infected. [ ]
5. Because condoms can protect me from getting infected with

- HIV, AIDS is not as dangerous as we are made to believe. [ ]
6. A positive HIV diagnosis cannot be such a bad experience, after all, cancer is far worse. [ ]
7. A cure will eventually be found, so I need not worry about getting infected. [ ]
8. AIDS causes a lot of physical and emotional suffering. [ ]
9. Being rejected by other people because you have AIDS is a sad thing to happen and should be avoided. [ ]
10. It is important to know one's own HIV status. [ ]
11. Abstaining from sexually risky behaviour reduces the chances of infection. [ ]
12. There is evidence that eating a good diet while infected with the HI virus can prolong life. [ ]
13. Having to take AIDS medication everyday is a hassle to be avoided [ ]
14. There is evidence that condoms can prevent HIV infection. [ ]
15. Condoms reduce sexual pleasure. [ ]
16. Casual sex is fun. It is unreasonable to expect people to abstain. [ ]
17. It is embarrassing to discuss condom use with one's sexual partner, so why use them. [ ]

18. Use of condoms violates biblical principles. [ ]
19. It is embarrassing to be seen buying condoms. [ ]
20. If I want to practice safer sex, I know what to do. [ ]
21. I am confident that I would decline sex with a person whose sexual history I do not know. [ ]
22. I know I can reduce my risk of getting infected with AIDS if I adhere to a more cautious lifestyle. [ ]
23. I know I can contribute in the fight against AIDS. [ ]

**ANNEXURE C: AIDS HEALTH BEHAVIOUR QUESTIONNAIRE**

**AIDS HEALTH BEHAVIOUR QUESTIONNAIRE**

*The statements below represent some of the actions people take to protect themselves against HIV/AIDS infection. Put a cross in the box next to statements that describe the behaviour that you engaged in during the past month.*

1. Carried a condom at all times.
2. Searched for literature on HIV/AIDS.
3. Sought advice from a professional working in the HIV/AIDS field.
4. Paid attention to media commercials on HIV/AIDS.
5. Voluntarily sought counselling from an AIDS counsellor.
6. Went for an HIV test.
7. Carried latex gloves when travelling by motor vehicle.
8. Avoided situations that could encourage casual sex.
9. Turned down an offer for casual sex.
10. Avoided going to high risk areas.
11. Avoided socialising with friends who engage in high risk sexual behaviour.

12. Used a condom during sexual intercourse.

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13. Spoke to my sexual partner about the importance of faithfulness.

14. Ended a relationship with an additional sexual partner.

15. Phoned the AIDS help line to obtain information.