

**KNOWLEDGE, ATTITUDE AND PRACTICE OF VOLUNTARY COUNSELING AND  
TESTING (VCT) FOR HIV/AIDS AMONGST THE HEALTH PROFESSIONALS IN  
UMPUMULO HOSPITAL, MAPUMULO, ILEMBE DISTRICT,  
KWAZULU-NATAL PROVINCE**

**BY**

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## DECLARATION

I, ANTHONY CHUDI OBIAJULU, hereby declare that the work on which this research is based is original (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being or is to be submitted for another degree at this or any other university.

.....

SIGNATURE

.....

DATE

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## **ABSTRACT**

### **BACKGROUND**

The impact of HIV/AIDS on the health sector and the health professionals that work in it is huge. This impact has contributed to the continuing attrition of health professionals in South Africa. Voluntary Counseling and Testing (VCT) has a central role to play in the response to these problems both at the level of the health sector in general and most especially at the level of the individual health professional. Thus, understanding factors that affect the practice of VCT amongst this group of professionals is crucial in South Africa's quest to reverse these negative trends.

### **AIM**

The aim of this study was to determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS amongst the health professionals in a rural district Hospital and to make recommendations in order that appropriate intervention strategies may be instituted.

### **METHODS**

A descriptive cross-sectional quantitative study design was used in which data was collected using a self-administered questionnaire. The study population included all the health professionals working in the hospital at the time of the study but excluded those who were on leave or absent from duty during the period of data collection. Informed consent was obtained from each participant. Data was captured and analyzed using the SPSS version 15.0 (SPSS Inc, Chicago, Illinois, USA).

## RESULTS

There was a very high level of knowledge, a moderately supportive attitude and a moderately high level of practice of VCT amongst the study participants.

Divorced/separated respondents to this study had more supportive attitude towards VCT than their single colleagues. Age was found to have a very weak but positive correlation to attitude score. There was no significant difference in knowledge and attitude scores between those who practiced VCT and those who did not.

## CONCLUSION

Health professionals understand the importance of VCT as an HIV preventive behavior but there remains some VCT knowledge, attitude and practice concerns together with other determinants of VCT behavior that needs to be addressed.

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## 2.0 INTRODUCTION

This chapter includes the background to the study, the study setting, the research problem and the purpose of the study.

## 2.1 BACKGROUND TO THE STUDY

Acquired Immunodeficiency Syndrome (AIDS) which is caused by the Human Immunodeficiency Virus (HIV) remains a real threat to the health and socioeconomic well being of so many nations of the world. The first recognized cases of this new disease occurred amongst young homosexual men in the USA and were reported on the 5<sup>th</sup> of June 1981 in the Morbidity and Mortality weekly report produced by the Centre for Disease Control (CDC) in Atlanta, USA (Whiteside, 2008). Soon after this report, a new disease that affects the immune system causing weight-loss and diarrhea was identified in Central Africa amongst heterosexual people (van Dyk, 2008). It was not until 1982 that Public Health Officials began to use the term “acquired immunodeficiency syndrome” or AIDS to describe the occurrence of opportunistic infections, Kaposi’s sarcoma and Pneumocystis carinii pneumonia in previously healthy people (CDC, 2007). According to this same report the HI virus, which is the cause of AIDS was subsequently identified in 1983. Presently, the spread of HIV has grown unabated and it has become a major global health problem of epidemic proportions.



Though the present worldwide HIV pandemic consists of many regional epidemics, globally, at the end of 2007, there were 2.7 million new HIV infections with a total of 33 million people living with HIV (UNAIDS, 2008). Sub-Saharan Africa remains the worst affected region by the pandemic being home to two-thirds (67%) of the global total of 33 million people living with HIV (UNAIDS, 2008). Even in Sub-Saharan Africa, HIV prevalence varies considerably ranging from below 2% in several countries of West and Central Africa to above 15% in 7 Southern African countries one of which is South Africa (UNAIDS, 2008). According to the 2008 UNAIDS report on the global AIDS epidemic, as at the end of 2007, South Africa had the largest HIV epidemic in the world with an estimated 5.7 million people living with HIV. It is also thought that AIDS, which was first recorded in South Africa in 1982, is the cause of almost half of all deaths in the country and 71% of deaths among those aged between 15 and 49 years (Dorrington, Johnson, Bradshaw & Daniel, 2006). The 2008 UNAIDS global AIDS report notes that HIV seroprevalence of those aged between 15 and 49 years, the most productive members of the South African workforce is 18.1%. It is not then a surprise that the HIV/AIDS epidemic has been estimated to cost South Africa 17% in GDP growth by 2010 (Stevens, Apostolellis, Napier, Scott & Gresak, 2006).

Majority of the health care workers (HCWs), a very scarce resource in most countries of the world including South Africa fall within the above age group and they are also affected negatively by the HIV/AIDS epidemic. Not least of the effects of this epidemic on the health workforce is the massive increase in

workload brought on by the pandemic with more than 50% of hospital beds occupied by patients suffering from AIDS-related illnesses (Uebel, Friedland, Pawinski & Holst, 2004). Also, patients suffering from AIDS-related illnesses stay longer in hospitals and require more care. Added to the above is the fact that 11.5% of professional HCWs in two Gauteng hospitals (Connelly, Veriava, Roberts, Tsotetsi, Jordan, DeSilva, Rosen & DeSilva, 2007) and 13.7% of them in four provinces (Shisana, Hall, Maluleke, Chavea & Schwabe, 2004) are HIV positive. All these are occurring in an environment where there are widespread shortages of medical staff, adding to health workers stress, burnout and attrition, all of which are a major challenge to healthcare delivery. It is thus important to sustain and continue to expand the fight against HIV/AIDS within the health workforce in particular and the public in general, a fight we cannot afford to lose. Indeed, it is only a healthy and motivated health care workforce that can sustain such a fight and one of the ways going forward is the provision of free comprehensive care to HIV-infected health workers and their families. This could be directly linked to plans to alleviate health workforce shortages and that of scaling up of provision of comprehensive HIV/AIDS care to the members of the general public.

The above plans can only be possible if the sero-status of health workers is known and this can be done via voluntary counseling and testing (VCT) for HIV. That is why one of the main goals of South Africa's new 5-year strategic HIV/AIDS plan is the offering of routine HIV testing within and without the health service –thereby promoting a culture of testing and counseling (Spencer D C,

2007). Within the health services the government has set up various programmes like the Employee Assistance Programmes (EAP) to help with among other activities with the offering of onsite VCT to employees. It is clear from the above that the government regards improving access to VCT for HIV for everybody in South Africa as a key component of its comprehensive HIV/AIDS care plans. This is commendable because it has been shown that testing for antibodies to the HIV is an important component of prevention and intervention programs designed to curb the spread of HIV infection (Boshamer & Bruce, 1999). Sadly, though there are many VCT sites scattered all over South Africa, only one in five people in South Africa who know about VCT have been tested for HIV (Kalichman & Simbayi, 2003). Among the reasons given for not seeking HIV testing are negative perceptions of testing services and AIDS-related stigma. This low uptake of VCT services has to be taken seriously if South Africa has to win this fight against HIV/AIDS. As a group, it is important that HCWs lead in this fight, thus, a vigorous VCT service targeted at HCWs is necessary to afford them the opportunity to learn their HIV status. This can only be successful if HCWs knowledge, attitude and practice of VCT is understood thus giving health planners an insight into factors that motivate or deter them from seeking HIV antibody testing. Therefore this research aims to determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS amongst the health professionals in Umpumulo Hospital.

## 1.2 STUDY SETTING

This research was carried out at Umpumulo Hospital, a rural district hospital in the local municipality of Maphumulo, within the ILembe district municipality of KwaZulu-Natal Province, this is also where the researcher works. Umpumulo hospital is a 180 bedded level 1 rural district facility that provides first level hospital care to the people of Maphumulo in conjunction with 6 stationary clinics and the mobile clinic units.

The local municipality of Maphumulo is one of the four local municipalities that make up ILembe district municipality. According to the Department of traditional and Local Government Affairs (DTLGA), Maphumulo local municipality has a population of 120,642 inhabitants made up mainly of Zulu speaking people (DTLGA, 2009). There is a high level of unemployment in Maphumulo with low literacy rate and poverty.

Umpumulo hospital patients who need specialist care are sometimes referred to the regional hospital at Stanger. The regional hospital which is 32km away from Umpumulo hospital boasts of specialist doctors in most clinical fields and also receives referred patients from 3 other district hospitals within the ILembe District Municipality. Umpumulo hospital like these other district hospitals in ILembe District Municipality offer first level care to patients and are staffed by generalist doctors, different categories of nurses and allied health workers.

### 1.3 THE RESEARCH PROBLEM

The researcher initially worked for two and half years as a medical officer in Jane Furse hospital in the Sekhukhune district of Limpopo province prior to taking up post at Umpumulo hospital and has been working there for more than three years. During this period the researcher observed, though sadly, how some of hospital staff members have lost the battle against AIDS. Surely, it is the people that have lost the battle that I know of but how about the people who do not even know that they are living with the virus and have unknowingly been exposing other people, most especially their partners. Though Umpumulo hospital offers comprehensive HIV/AIDS care including VCT to our HIV positive patients, it is not clear if our staff members avail themselves of these facilities or even go for VCT for HIV/AIDS. This has left me a worried man knowing fully well that the fact that we are health workers actually makes us an “at risk” group of people, thus knowledge of our sero-status at all times would surely be of immense benefit to us.

This led me to begin to ask myself so many questions as regards the health professional’s awareness and knowledge of VCT, his/her attitude and perceptions of VCT and their practice of VCT. Do we, as health workers really know our status? Are we going for HIV test ourselves or are we just telling our clients about HIV and not looking after ourselves? Seeking answers to the above questions was the motivation for this study: **The knowledge, attitude and practice of voluntary counseling and testing (VCT) for HIV/AIDS amongst**

**the health professionals in Umpumulo Hospital, Maphumulo, ILembe  
District, KwaZulu-Natal Province**

The results of this study will help answer some of the above questions and by so doing help the health facility managers in understanding the health care professionals' awareness and attitude towards VCT thereby helping them begin to look at strategies to reverse negative attitudes if they exist. It would also help health facility administrators in planning ways of improving or if not already in existence of setting up in-house HIV / AIDS interventions which could be linked to fixed targets towards caring for the carers and if possible incentivizing HIV testing for all levels of staff.

**1.4 THE PURPOSE OF THE STUDY**

The purpose of this study was to determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS amongst the health professionals in Umpumulo Hospital.

## CHAPTER 2

## LITERATURE REVIEW

### 2.0 INTRODUCTION

The previous chapter provided an introduction to the study which included the background to the study, the study setting, the research problem and the purpose of the study. This chapter covers the literature review related to this study and is centered on the following areas: Method of literature search; The present burden of HIV/AIDS; The impact of HIV/AIDS on the health sector and health care personnel; VCT as a strategy to curb the spread of HIV; VCT as an HIV preventive health behaviour: Theoretical Perspective; Practice and acceptability of VCT; Factors affecting the practice and acceptability of VCT; Conclusion.

### 2.1 METHOD OF LITERATURE SEARCH

Pubmed internet search was done with the following search terms ;( “AIDS Serodiagnosis” [Mesh] AND “Health Knowledge, Attitudes, Practice” [Mesh]. This yielded 87 research reports. A second search was done with these search terms ;( “AIDS Serodiagnosis/psychology” [Mesh] AND “Health Behavior” [Mesh]. This yielded 32 research reports. Both searches were limited to studies done on humans and in English Language. These reports as well as articles from Google scholar search, reference lists from relevant and retrieved articles were reviewed. The websites of the South African Department of Health, UNAIDS, CDC, WHO, FHI,CADRE and the AIDS Educational Global Information Systems were

extensively searched and retrieved articles, guideline documents and organizational research reports were reviewed.

The MEDUNSA Family Medicine Resource Centre also assisted with the literature search for this study. The key words for the search were: HIV, AIDS, Health Professionals, Knowledge, Attitude and Practice.

Extensive manual search of journals, books and articles relevant to this study was also done. All retrieved studies relevant to the topic were reviewed.

## 2.2 THE PRESENT BURDEN OF HIV/AIDS

In 2007, the global HIV/AIDS epidemic killed 2 million people bringing to 25 million the number of people that have died of HIV-related causes since it was recognized more than two decades ago. Though the present worldwide HIV pandemic consists of many regional epidemics, Sub-Saharan Africa remains the worst affected region accounting for 75% of AIDS deaths in 2007, 38% of which occurred in the Southern African Sub region. (UNAIDS, 2008). Such has been the growing burden and devastating impact on human lives and development of this disease in the world. The impact of this disease is made worse by the fact that the majority of those infected and dying of HIV/AIDS are adults in the most productive years of their lives. This impact goes beyond public health concerns for it negatively affects and undermines the social and economic achievements of developing countries.

In South Africa, at the end of 2006, adults aged between 20 and 64 years accounted for 90% of the 5.4 million people living with HIV/AIDS, a disease which



was the cause of 71% of death amongst those aged between 15 and 49 years (Dorrington et al, 2006). Placing this into perspective, Juan Somavia, Director General of the International Labour Organization (ILO) noted that “9 out of every 10 people with HIV will get up today and go to work” (ILO, 2006).

Surprisingly, on the macroeconomic level, Whiteside (2008) noted that presently, AIDS does not appear to have held back economic growth in South Africa as was speculated earlier by some economists; instead the country posted its 47<sup>th</sup> month of consecutive growth in March 2006, an estimated 4.4%. On the contrary, it is on the microeconomic level that the worst socio-economic sequel this far of the HIV/AIDS pandemic is felt. A study done in Kenya has shown that HIV infected workers are less productive when they are on duty, stayed more days off work and earned 16.0% to 17.7% less than their uninfected colleagues depending on the stage of their illness (Fox, Rosen, MacLeod, Wasunna, Bii, Foglia & Simon, 2004). All these, added to an obvious increase in medical expenses associated with HIV/AIDS terminal illness means a reduction in household income. In South Africa, a 23% decline in household expenditure was documented over a 3-year period in homes where an AIDS death had occurred (Spencer, 2007).

Thus, HIV/AIDS associated loss of trained workers, absenteeism, low morale, rising costs of providing health-care benefits and payment of death benefits is negatively affecting various development sectors. This HIV/AIDS associated increase in costs is also felt in the Health sector, the sector which is burdened with providing care for the people who are sick with the disease.

## 2.3 THE IMPACT OF HIV/AIDS ON THE HEALTH CARE PERSONNEL AND HEALTH SECTOR

It is widely asserted that HIV/AIDS affects the performance of health systems by increasing the demand for services provided by the health sector and reducing the supply of these services by its impact on the numbers and performance of the health workforce (Connelly et al, 2007; Deghaye, Pawinski & Desmond, 2006; Dorrington et al, 2006; Ncayiyana, 2004; Shisana, Hall, Maluleke, Stoker, Schwabe, Colvin, Chauveau, Botha, Gumede, Fomundam, Shaikh, Rehle, Udjo & Gisselquist, 2003; Tawfik & Kinoti, 2003; Uebel et al, 2004;).

### 2.3.1 The Impact of HIV/AIDS on the Health Care Personnel

Though many countries are yet to fully understand the impact the ongoing epidemic has or would have on their health care personnel, studies done in South Africa and elsewhere have shown that the prevalence of HIV/AIDS among the health care personnel is serious enough to warrant immediate attention (Connelly et al, 2007; Ncayiyana, 2004; Shisana et al, 2003; Tawfik et al, 2003). Just like the general population, HCWs face the same risk of acquiring HIV via sexual contact but are also faced with an additional 0.3% occupational risk from penetrating needle stick injuries. The above stated occupational risk might be higher in South Africa due to a “lack of appropriate resources, knowledge and skills, coupled with the unavailability of the universal standard precautionary procedures and compliance thereof” (Zungu, Sengane & Setswe, 2008). This poor state of affair is not helped by the finding that more than half of the

occupational exposures to blood borne viruses (BBVs) in South Africa go unreported (De Villiers, Nel & Prinsloo, 2007; Zungu et al, 2008). Thus, it is sad to note that a study commissioned by the South African Department of Health, found that at the end of 2002, 15.7% of health care workers (HCWs) in four South African provinces were living with HIV (Shisana et al, 2003). This same study reported that between 1997 and 2001 an estimated 13% of health workers died of HIV/AIDS-related illnesses. In another study, Connelly et al (2007) reported that 11.5% of HCWs in two Gauteng hospitals were living with HIV and nearly half of these employees living with HIV had a CD4 cell count less than or equal to 350 cells per milliliter. The difference in prevalence figures between the two studies might be due to sampling, the first study was done on 595 health workers in four provinces, two of which have high HIV prevalence, while the second study was done on 1813 health workers in two Gauteng hospitals. Indeed, having in mind that HCWs are always at risk of AIDS-defining opportunistic infections like TB, HIV-positive HCWs with CD4 cell count between 200 and 350 cells per milliliter may in reality be eligible for antiretroviral drugs. This high prevalence of HIV among the HCWs is associated with high levels of absenteeism, reduced productivity and morale, making worse the severe shortage of trained health sector staff. Tawfik et al (2003) reports that though absenteeism begins before people develop full blown AIDS, the average person living with AIDS can be absent from work for up to 50% of their final year of life.

### 2.3.2 The Impact of HIV/AIDS on the Health Care Facilities

Most reviewed studies suggested a high HIV prevalence among patients using health facilities in South Africa (Buve, 1997; Deghaye et al, 2006; Dorrington et al, 2006; Ncayiyana, 2004; Parikh & Veenstra, 2008; Shisana et al, 2003; Uebel et al, 2004). Uebel et al (2004) reported that up to 50% of hospital beds are occupied by patients suffering from AIDS-related illnesses. This was consistent with the 46.9% to 54.5% inpatient sero-positive prevalence found by Parikh et al (2008) and the 46.2% sero-positive prevalence recorded by Shisana et al (2003). Interestingly, Shisana et al (2003) went further to show that between 1995 and 2000 there was no increase in the mean number of admissions in the medical wards of all patients (AIDS and non-AIDS) but noted that there was a very large increase in the mean number of HIV/AIDS-related admissions, suggesting a 'crowding out' of the health care system of non-AIDS clients by AIDS clients. This was also noticed in Kenya between 1988 and 1992 where the average number of people not infected with HIV admitted to a Nairobi hospital decreased by 18%, while the number of those who were HIV-positive more than doubled. Thus the severity of the illness suffered by HIV-negative clients rose and their mortality rate increased from 14% to 23%, while the mortality rate of hospitalized HIV-positive patients remained stable during the same period.(Tawfik et al; 2003). Two of the reviewed studies showed that AIDS patients stay in hospital longer than the non-AIDS patients and this is associated with higher costs to health services (Buve, 1997; Shisana et al; 2003). Even the outpatient care of clients with HIV-related illnesses was reported by Parikh et al (2008) as being nearly

always more expensive. This could be attributed to the fact that patients living with AIDS are more prone to opportunistic infections like TB which is often the sentinel illness of HIV infection and most times they present with multiple conditions.

## 2.4 VCT AS A STRATEGY TO CURB THE SPREAD OF HIV

Voluntary HIV counseling and testing (VCT) is the process by which an individual undergoes counseling which enables him or her to make an informed choice about testing for HIV (UNAIDS, 2000). The voluntary nature of VCT makes the decision to test or not to test entirely the choice of the individual who must be assured that the process will be confidential. The WHO defined HIV counseling as “a confidential dialogue between a person and a provider aimed at enabling the person to cope with stress and make personal decisions related to HIV/AIDS. The counseling process includes an evaluation of personal risk of HIV transmission and facilitation of prevention behaviour.” (UNAIDS, 2000). It can be seen from the above that VCT is much more than drawing of blood and testing but as a minimum must consist of a pre- and posttest counseling. Indeed, VCT according to Boshamer et al (1999) is “an important component of prevention and intervention programs designed to curb the spread of HIV infection”.

### 2.4.1 Evidence to Support Practice

Thus, as an important component of HIV prevention programs, one of the aims of VCT should be to prevent HIV transmission and acquisition either vertically from mother to child or horizontally from sero-positive to sero-negative individuals. The

importance of this cannot be overemphasized, for in the absence of a medical cure for HIV/AIDS, preventive strategies designed to decrease or eliminate HIV risk behaviour remains the most effective means of fighting this pandemic. Studies conducted in Africa and elsewhere have shown the efficacy of VCT in the reduction of high risk sexual behaviour and HIV transmission (The Project RESPECT Study Group, 1998; The Voluntary HIV-1 Counselling and Testing Study Group, 2000; Weinhardt, Carey, Johnson & Bickham, 1999). These studies which included a meta-analysis and two randomized trials in which one had controls have shown that VCT does significantly reduce high risk sexual behaviour. Though VCT was consistently shown across these reviewed studies to reduce unprotected intercourse in both HIV-1 infected and uninfected individuals, this reduction was more in the infected people. Couples who were counseled together during VCT had less unprotected intercourse than couples who were counseled separately. Also, couples in which one or both members were diagnosed with HIV-1 were more likely to reduce unprotected intercourse than couples in which both members were uninfected. Thus, it can be concluded from these studies that VCT is an effective preventive strategy for HIV/AIDS, though it is more effective as a means of secondary than primary prevention. Simply put, VCT induced reduction of high risk sexual behaviour occurs more in sero-positive than the sero-negative clients and when that client is one of an HIV sero-discordant couple who were counseled together, rather than individually. It should be noted that these studies might be confounded by the fact that one of the outcome measures used to monitor reduction in unprotected intercourse is

the use of condoms. Some of the participants who tested sero-negative may be testing as a requirement to get married as practiced by some religious groups or to start a monogamous relationship in which they plan to stop the use of condoms but rather use mutual faithfulness as a preventive measure.

#### 2.4.2 VCT as a Link to HIV/AIDS Care and Support

Though evidence as stated above has shown that VCT alone can lead to a reduction in HIV transmission by changing sexual behaviour, this reduction is even accentuated when VCT is linked to other strategies. In its 2008 report on the global AIDS epidemic, UNAIDS noted that “Prevention efforts are most effective when they involve strategic combinations of evidence-informed strategies that meet the specific needs of people at risk”. Little wonder why VCT for HIV is described as an essential link between HIV prevention and care and support services (Family Health Initiative, 2002). VCT links with treatment services like prevention and early management of opportunistic infections including TB and *Pneumocystis jirovecii* pneumonia, the eligibility and adherence if need be to ARVs, the PEP programme for rape victims and health workers after occupation exposures. It is also linked to the PMTCT programme, without which up to 40% of children born to HIV-infected women will be infected, instead transmission rate as low as 2% to 5% have been achieved (Wilson, Naidoo, Bekker, Cotton & Maartens, 2005) . VCT connects clients to coping services like support groups and helps clients with disclosure to significant others for psychosocial support purposes. It must be noted that disclosure rates, which according to UNAIDS (2001) range between 24-79% in developing countries,

increase over time as people adjust to their test results. One of the reasons given by the report for low disclosure rates are the negative life-events experienced by some sero-positive clients after sero-status disclosure. Thus helping clients to disclose sero-status should be done with this in mind and only after full assessment of each client's social situation should disclosure be advised.

## 2.5 VCT AS AN HIV PREVENTIVE HEALTH BEHAVIOUR: THEORETICAL PERSPECTIVE

According to Mhlongo (2006) "prevention is concerned with the removal or reduction of risks, early diagnosis, early treatment, the limitation of complications, including those of iatrogenic origin and maximum adaptation to disability". The Pubmed MeSH database (2008) defines Health Behaviour as any behaviors expressed by individuals to protect, maintain or promote their health status. These behaviors with respect to HIV/AIDS can be aimed at primary prevention in which case the individual is sero-negative, secondary prevention for asymptomatic but sero-positive clients or tertiary prevention for those already symptomatic with disease. It has been proven that VCT is involved in all levels of preventive activities aimed at curbing the spread of HIV and health promotion. The nagging question one might then ask is why do some people adopt healthy behaviors like VCT, while others don't and for those who don't, how do we help them change? Concepts from the behavioral science theories seek to answer some of these questions which will aid in the understanding of how health behaviors can be predicted, determined or changed if need be.



### 2.5.1. The Information-Motivation-Behavioral Skills (IMB) model

This is a well-established conceptualization designed specifically to address HIV prevention (Fisher, Fisher, Bryan & Misovich, 2002). According to the IMB model, HIV prevention information, motivation and behavioral Skills are the fundamental determinants of HIV preventive behavior. HIV prevention information refers to information on the means of HIV transmission and methods of preventing HIV infection. Motivation to change or decrease AIDS risk behavior includes favorable attitudes towards performance of HIV preventive acts and perceived social support for performance of these acts. Finally, the individual needs the behavioral skills and a sense of self-efficacy to perform the AIDS prevention behaviour. (Fisher et al, 2002). Thus the IMB model assumes that information and motivation activate behavioral skills that will result in risk reduction behavior.

### 2.5.2 The Health Belief Model (HBM)

This model which was developed in the 1950s by Hochbaum, Rosenstock and Kegels while working as social psychologists in the US public health services was inspired by a study on why people sought X-ray examinations for TB (Green, 2008). Lately, the HBM has been adapted to explore a variety of health behaviors including sexual risk behavior and HIV prevention (Boshamer et al, 1999). According to the HBM, a person's perceived vulnerability to a condition, their perceptions of the severity of the condition, their perceptions of the efficacy and benefits of any proposed action in the background of a trigger to act can explain a health behavior.

### 2.5.3 The Integrative Model (IM) of Behavior Prediction

The IM is derived from the reasoned action approach, which includes the theory of reasoned action (TRA) and the theory of planned behavior (TPB) (Fishbein, 2008). The IM proposes that there are seven “variables that need to be considered in order to predict, understand, change or reinforce a given behavior”. These include intention, attitude, perceived norms, self-efficacy or perceived behavioral control, behavioral beliefs or outcome expectancies, normative beliefs and control beliefs. (Fishbein, 2008). According to the reasoned action approach, the first step to predict, understand, change or reinforce a given behavior is to be absolutely specific about the behavior of interest. For example during VCT, talking about practicing safer sex in general will not help our clients but in cooperation with the client agreeing that ‘I must always use a condom’ will be of help. The second step is to determine if the individual has an intention to carry out the specific behavior. Intentions reflect all the motivational factors that influence specific behavior and are the single best predictor of behavior. (van Dyk, 2008). Intention can be conceptualized as a readiness to engage in a particular behavior (Fishbein, 2008). According to IM, primary determinants of intention are attitude toward performing the specific behavior, perceived norms or normative influences and self-efficacy or perceived behavioral control. In the IM, attitude toward performing the specific behavior results from a positive or negative evaluation of the outcome of the behavior; perceived norms or normative influences refer to influences from significant others in a person’s life and ones desire to please them; self-efficacy or perceived behavioral control is

the person's perceived ability to carry out specific behavior successfully. It is important to note that IM views these three primary determinants of intention as functions of underlying beliefs. These are beliefs about the outcomes of performing the specific behavior (behavioral beliefs), about specific referents (normative beliefs) and about specific barriers to behavioral performance (control beliefs).

#### 2.5.4 The Transtheoretical Model (TM)

The TM was developed by Prochaska and DiClemente and has shown that people go through a series of five stages in the process of health behavior change (Zimmerman, Olsen & Bosworth, 2000). These stages are the Pre-contemplation, Contemplation, Preparation, Action and Maintenance. According to TM, Pre-contemplation is the stage at which there is no apparent intention to change. Clients in the Contemplation stage are seriously thinking about change. Those in Preparation stage are ready to plan and implement change. Action is the stage at which the person has started changing the behavior and the person in the Maintenance stage has gotten used to the new behavior. These stages of change are not linear but rather cyclical and people can go up to maintenance stage, relapse and start the cycle again.

It can be seen from the above theories that Health care providers have to do much more than provide clients with health information if they want to predict, understand, change or reinforce VCT as an HIV preventive health behavior. They have to be absolutely specific to their clients about the need for them to adopt

VCT as an HIV preventive health behavior. In the bid to understand, change or reinforce their client's intention to go for VCT, providers must not forget the primary determinants of intention like attitude toward performing VCT, influences of significant others and their client's perceived ability to perform VCT. Providers have to check that their client's know where to go for VCT and be sure that the pros of VCT are more than the cons for that particular client. It is important that providers recognize that change is not an event but rather a process and that people may be at different stages at different times.

## 2.6 PRACTICE AND ACCEPTABILITY OF VCT

Since it became available in 1985, the principles underpinning the HIV test has remained that of the '3Cs', testing must be CONFIDENTIAL, accompanied by COUNSELING and only by informed CONSENT (UNAIDS, 2004). Presently, there are four types of HIV testing: client-initiated VCT; diagnostic HIV testing of those with symptoms and signs of HIV-related disease like TB; routine health care provider-initiated testing and mandatory screening of blood destined for transfusion or manufacture of blood products (Bekker & Wood, 2006). As at November 2006 there were more than four thousand VCT sites in South Africa (Pembrey, 2008). Though most are located within public health facilities, others are sites within the private health facilities, non-governmental organizations (NGO) and faith based organizations (FBO).

### 2.6.1 Practice and Acceptability of VCT by HCWs

The Practice and Acceptability of VCT by HCWs can be viewed from two perspectives, firstly, from the perspective of how HCWs are themselves testing for HIV and secondly, from the perspective of how HCWs are offering VCT to their clients. So much has been explored on the Practice and Acceptability of VCT among different groups but there seems to be a lack of data on the same issue among HCWs. Two cross sectional studies were found that dealt with how HCWs are practicing VCT themselves, one was conducted among 69 new employees of the British National Health Scheme while the other was done among 242 HCWs in a tertiary hospital in Benin, Nigeria. The first study reported that 41% of the study participants had been tested for HIV in the past and 62% are willing to test in the future (Hamill, Copas & Murphy, 2006). It went further to note that 56% of the participants who had tested for HIV in the past are from areas of endemic HIV. The second study reported that 71.9% of the study participants had been screened for HIV (Okojie & Omuemu, 2004). It is important to note that the practice of VCT by HCWs from the perspective of how HCWs are offering VCT to their clients is dependent on the type of HIV testing in practice at the site where the HCW is working (cf section 2.6). In a prospective study conducted in a Durban hospital, researchers compared the “standard of care” practice of VCT versus the routine practice of VCT. It was shown that 2912 clients were offered VCT during the 12 week period of routine practice of VCT as compared to 435 clients that were offered VCT during the period of “standard of care” (Basset, Giddy, Nkera, Wang, Losina, Lu, Freedberg & Walensky, 2007).

This shows that the number of clients HCWs offer VCT is dependent on the type of HIV testing being practiced at the site in question at a given time and this would influence the uptake of VCT. One can thus understand the continuing call for a change in testing policy in South Africa to routine offer of HIV testing by health care providers as it is associated with higher VCT uptake (Bekker et al, 2006).

#### 2.6.2 Practice and Acceptability of VCT in the Antenatal setting

Studies done in South Africa show that the practice and acceptability of VCT among antenatal clinic attendees is high (Abdool Karim, Abdool Karim, Coovadia & Susser, 1998; Abdullah, Young, Bitalo, Coetzee & Myers, 2001; Urban & Chersich, 2004). Urban et al (2004) found that more than 90% of women who initiated antenatal in a Gauteng hospital accepted testing for HIV and received their results. This was not different from the study by Abdool Karim et al (1998) who also found that 90% of the new antenatal bookings in a tertiary hospital in Durban accepted testing for HIV. In a study done in two midwife obstetrics units in Khayelitsha, Cape Town, 70% of the new antenatal bookings accepted testing for HIV over the period of the intervention programme (Abdullah et al, 2001). It is clear from the above studies that the practice of VCT in the setting of antenatal care is good. This might not be unconnected with the linking of this programme with PMTCT which would serve as a motivation to mothers to prevent infecting their children with HIV. Future efforts must be geared towards encouraging these clients to maintain this preventive health behaviour.

### 2.6.3 Practice and Acceptability of VCT in the non-Antenatal setting

Reviewed studies done on VCT uptake in other non PMTCT situations were inconsistent, with great differences. This may be dependent on various contextual factors in the different communities and test sites. In a study done in a black township in Cape Town, 47% of the participants self-reported having had the HIV test (Kalichman et al, 2003). Another study done in Botswana reported a prevalence of self-reported HIV testing to be 48% (Weiser, Heisler, Leiter, Korte, Tlou, DeMonner, Phaladze, Bangsberg & Lacopino, 2006). The study done in rural Uganda showed that the overall VCT uptake among men was 23.3% (Bwambale, Ssali, Byaruhanga, Kalyango & Karamagi, 2008). A multi-center study done among university undergraduates in South Africa, India and USA reported that 20% of the South Africa and American and 10% of the Indian students admitted to having done an HIV test (Peltzer, Nzewi & Krishna, 2004). Thus reviewed studies were not consistent with respect to practice of VCT in the non PMTCT settings; but one can note a trend, that the uptake of VCT at these sites is not as high as in the PMTCT sites. VCT uptake at different sites was dependent on various personal and service factors some of which would be dealt with in the following sections.

## 2.7 FACTORS AFFECTING THE PRACTICE AND ACCEPTABILITY OF VCT

Factors affecting the practice and acceptability of VCT can be grouped into those related to the individuals undergoing VCT and those related to the services provided.

## 2.7.1 INDIVIDUAL RELATED FACTORS

### 2.7.1A Knowledge about VCT and HIV/AIDS

There is so far no single agreed definition of Knowledge, but the Oxford English dictionary (Wikipedia, 2008) relates knowledge to facts and information. As seen above, the IMB model (cf section 2.5.3) of understanding health behaviour tells us that information is needed to activate behavioral skills that will result in risk reduction behavior. Thus it is clear that knowledge about VCT and HIV/AIDS should affect the practice and acceptability of VCT. No studies were found on HCWs knowledge of VCT or their knowledge of HIV/AIDS as a relationship to their VCT uptake or intended VCT uptake. A study done in Kano, Northern Nigeria concluded that among the study population HIV/AIDS knowledge significantly predicted positive attitude toward VCT for HIV/AIDS (Iliyasu, Abubakar, Kabir & Aliyu, 2006). In their study done in a black township in Cape Town, Kalichman et al (2003) reported a generally high HIV/AIDS knowledge score across the participants in the study, with a mean of 83% but no significant difference between those who tested for HIV in the study and those who didn't. This might mean that in groups where knowledge about VCT and HIV/AIDS is high other factors like attitude towards VCT and HIV/AIDS might then have a greater effect on the practice and acceptability of VCT.

### 2.7.1B Attitude towards VCT and HIV/AIDS

So many studies have been done which were aimed at understanding the complex relationship between attitude and health behaviors like VCT. Some of



the behavioral theories (cf section 2.5) suggest that a change in attitude which is one of the primary determinants of intention can lead to a change in health behavior. Two of the reviewed studies used intention to test as a measure of positive attitude toward VCT and thus concluded that participants in their studies had favorable attitudes due to their high levels of intention to test for HIV (Ikechebelu, Udigwe, Joe-Ikechebelu & Imoh, 2006; Iliyasu et al, 2006). It must be noted that although attitude is one of the primary determinants of intention to perform a health behavior, intention to test is still not the same as doing the test. A person might have an intention to perform an act like test for HIV but fail to carry out that intention due to other conflicting interests and pressures. On the contrary, Kalichman et al (2003) found that participants who had not been tested held significantly more negative HIV testing attitude than participants who had been tested. This study used actual reported testing and a validated attitude measuring instrument. Their findings thus suggest a link between attitude and testing practices.

#### 2.7.1C Individual Perceptions about VCT and HIV/AIDS

According to the HBM (cf section 2.5.2), a person's perceived vulnerability to a condition is important in explaining a health behavior. This has been shown by many of the reviewed studies to be the reason for either doing or not doing the VCT. In the study by Jereni & Muula (2008) 15.5% of the study participants said they were seeking VCT due to a self-assessment of own behavior as risky. This risky behavior leaves them vulnerable to infection with HIV and according to them led to their decision to test for HIV. This self-assessment of own behavior as risky

may also have an opposite effect of inducing the fear of testing HIV positive in an individual which might deter him/her from VCT. In their study Peltzer et al (2004) noted that 25% of high-risk individuals in the US fail to be tested due to fear of learning they are HIV positive. Other studies noted that people who declined testing said they did so because they did not perceive themselves to be at risk for HIV (Ikechebelu et al 2006).

#### 2.7.1D Gender

Gender affects the practice and acceptability of VCT in two ways. First, studies done in South Africa have shown that the practice and acceptability of VCT among women attending antenatal clinic is high (Abdool Karim et al, 1998; Abdullah et al, 2001; Urban et al, 2004). This has been attributed to the mothers' interest in protecting their children from infection with the HIV through PMTCT strategies. This was also reported by Iliyasu et al (2006) as they noted that female gender significantly predicted positive attitude toward VCT for HIV/AIDS among their study population. Secondly, gender inequality and the lack of women empowerment makes it difficult sometimes for women to take decisions on whether or not to test. So many women who would have undergone VCT don't because they report a lack of permission from their spouse or partner (Weiser et al, 2006). These normative influences from significant others in a person's life and ones desire to please them is according to the Integrative Model (IM) of Behavior Prediction one of the seven "variables that need to be considered in order to predict, understand, change or reinforce a given behavior"(cf section 2.5.3). These concerns may not be totally unfounded as some women have

experienced adverse consequences post sero-status disclosure. In a study done in Cape Town, women were asked whether they had experienced serious problems post sero-status disclosure, 13% had experienced violence from a sex partner, 9% reported that their partner had left them and 3% said they've had to move from their home (Mathews, Kuhn, Fransman, Hussey & Dikweni, 1999).

#### 2.7.1E Discrimination and Stigma

AIDS-related stigma and discrimination remain the greatest obstacles to people living with HIV/AIDS (van Dyk, 2008). Many studies have identified stigma and discrimination as the main reasons why people do not utilize VCT services (Kalichman et al, 2003; Peltzer et al, 2004; Spencer, 2007). The problems of discrimination and stigma have left sero-negative people not to test to know their status and have led sero-positive people not to disclose their status leading to late disclosure of sero-status. Discrimination and Stigma has led to the physical assault and sometimes killing of HIV positive people. The story of Gugu Dlamini an AIDS activist who was beaten to death by her neighbors after declaring that she was HIV positive is still fresh on our memories (Pembrey, 2008). This problem is not limited to the members of the public for some health professionals discriminate against their HIV positive clients. A study done in Nigeria reported that up to 18% of the health professionals who participated in the study had refused care or hospital admission to a client because of their sero-status (Reis, Heisler, Amowitz, Moreland, Mafeni, Anyamele, & Lacopino, 2005). Thus it can be seen that discrimination is widespread and it can be both personal and service related.

## 2.7.2 SERVICE RELATED FACTORS

### 2.7.2A Accessibility of VCT site

Accessibility to any service most especially that to a VCT site would have an effect on whether that service would be utilized or not. Studies have shown that more accessible VCT sites are better utilized than less accessible ones. A cluster-Randomized trial of uptake of workplace HIV counseling and testing found that people who had on-site VCT services available to them took up the option of HIV testing than people who had off-site VCT services available to them. (Corbett, Dauya, Matambo, Cheung, Makamure, Bassett, Chandiwana, Munyati, mason, Butterwort, Godfrey-Faussett & Hayes, 2006). This shows that accessibility of VCT site has an effect on the practice and acceptability of VCT and efforts at scaling up VCT services must be encouraged.

### 2.7.2B Availability and Quality of Services offered

There are more than four thousand operational VCT sites in South Africa and these sites vary in their capacity to deliver VCT and the various services it is linked to. Studies have shown that VCT services which are linked to other services have better client uptake than unlinked VCT services. In a study done in Cape Town, it was shown that availability of ART is associated with increased uptake of HIV testing services (Mfundisi, Chiranjan, Rodrigues, Kirchner, Bock & Myer, 2005). Other studies have reported a high VCT uptake when it is part of the PMTCT strategy (Abdool Karim et al, 1998; Abdullah et al, 2001; Urban et al,

2004). These high levels of VCT uptake are made even higher when the result turn around time is shortened by the use of the rapid HIV testing. In a US study Rietmeijer (2006) reported that HIV rapid testing appears to increase testing uptake and may increase the number of newly diagnosed HIV infections in STI settings. This is due to the decrease in waiting time, thus reducing the problem of losing clients to follow up. It is important to note at this point that as stated above (cf section 2.6.1) the type of HIV testing practiced at a site appears to have an effect on the uptake of HIV counseling and testing

#### 2.7.2C Confidentiality and Attitude of Health Workers

Confidentiality is of immense concern to clients and they must be assured of this during the counseling sessions. This is more so for a disease like HIV/AIDS whose sufferers are much stigmatized and discriminated against. Studies have pointed to the fact that clients are concerned about the confidentiality of their test results (Boshamer et al, 1999; Peltzer et al 2004). The concern with the privacy of test results were noted in these studies as one of the main reasons given by participants for refusing VCT. Other studies point to the attitude of health workers as important determinants of VCT uptake (Reis et al, 2005). 59% of the health professionals who participated in this study said that people with HIV/AIDS should be in a separate ward and 40% believed a person's HIV status could be determined by his/her appearance. Some of the health professionals in this study

actually refuse to attend to HIV positive patients. All these lead to reduced VCT uptake.

## 2.8 CONCLUSION

This chapter has extensively reviewed relevant literature on the knowledge, attitude and practice of VCT for HIV/AIDS. Some of the reviewed studies have shown the seriousness of the HIV/AIDS pandemic most especially in South Africa in particular and Africa in general. Studies also drew attention to the continuing negative impact HIV/AIDS is having on the health system and its workforce. Evidence from three of the reviewed studies showed that VCT is an HIV preventive strategy which has proven to be efficacious in primary, secondary and tertiary prevention of HIV and in linking clients to other HIV care and support services. The behavioral theories gave some clarity on understanding and adopting of better health related behaviors if need be. The literature has suggested a very high level of practice and acceptability of VCT among pregnant women, a moderately high level of practice and acceptability among the HCWs and an inconsistent picture for other members of the public. Studies also noted that this apparent inconsistent picture is due to differences in resources and capacity at various communities and testing sites. Reviewed studies showed many factors that affect practice and acceptability of VCT; these were grouped into personal and service related factors. The personal factors included knowledge and attitude about VCT and HIV/AIDS, discrimination, stigma, gender and individual perceptions about VCT and HIV/AIDS. The service factors

included confidentiality, attitude of health workers, availability and quality of services offered.

**3.0 INTRODUCTION**

The previous chapter reviewed relevant studies related to the knowledge, attitude and practice of VCT for HIV/AIDS. This chapter presents the methodology of this study. It contains the following; aim of study, study objectives, implementation objectives, study design, study (target) population, measurement instrument, pilot study, method of data collection, data analysis, reliability, validity and objectivity, bias and limitations and ethical considerations.

**3.1 AIM OF STUDY**

- To determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS amongst the health professionals in Umpumulo Hospital.

**3.2 STUDY OBJECTIVES**

- To determine the level of knowledge that health professionals in Umpumulo Hospital have about VCT for HIV/AIDS.



- To Access and understand the attitudes of the health professionals in Umpumulo Hospital towards VCT for HIV/AIDS.
- To know what proportion of health professionals in Umpumulo Hospital actually practice VCT for HIV/AIDS.
- To know if the socio-demographic characteristics of health professionals in Umpumulo Hospital have any associations with their level of knowledge, attitudes and practices of VCT for HIV/AIDS.
- To determine if there are any associations between the level of knowledge, attitudes and practice of VCT for HIV/AIDS amongst the health professionals at Umpumulo Hospital.

### **3.3 IMPLEMENTATION OBJECTIVES**

This study is of primary benefit to the health professionals and the rest of the workers in Umpumulo hospital and of secondary benefit to the hospital and the patients that are cared for in it, thus the implementation objectives is to use the outcome of this study to make the following recommendations to the hospital management;

- To station a senior doctor at the staff clinic which should be located in an ideal place within the hospital which should among other services offer confidential VCT for HIV/AIDS.

- To organize in an ongoing manner educational programmes for hospital workers to raise awareness of the existence of the staff clinic and the services it renders including VCT for HIV/AIDS and other VCT linked services.
- To use the medium of the above stated educational programmes to bridge the gaps identified by the research in a partnership with the health care workers.
- To make sure that all hospital workers are aware of and understand the contents of the health department's policy on HIV/AIDS in the work place.

### **3.4 STUDY DESIGN**

This is a descriptive cross-sectional quantitative survey.

### **3.5 STUDY (TARGET) POPULATION**

The population that was studied included all the health professionals working in Umpumulo hospital. For the purpose of this study, health professionals are defined as medical doctors, dentists, registered nurses, enrolled nurses, enrolled nurse assistants and allied health professionals (Physiotherapists, pharmacists, social workers, occupational therapists, radiographers, pharmacist assistants, laboratory scientists and other professionals at the same level)

Using the above definition, a total of 173 health professionals were identified to be working in Umpumulo hospital at the time of the study using the human resource records and they were all included in the study. Thus all the health professionals as defined above working in Umpumulo hospital at the time of the study were included in the study.

There was thus no need for sample selection because all the health professionals working in the hospital although stratified to different professional groups were included in the study. Health professionals who were on leave or absent from duty during the period of data collection were excluded from the study. Only those who gave their consent participated in the study.

### **3.6 MEASUREMENT INSTRUMENT**

The questionnaire used for this study was developed from related reviewed literature and existing questionnaires whose psychometric properties have been established.

Boshamer et al (1999) developed a scale to measure attitudes about HIV antibody testing and this has been used by Peltzer et al (2004) to measure attitudes towards HIV-Antibody testing among University students in India, South Africa and United States of America. The questionnaire developed by Pronyk et al (2000) of the Rural AIDS and Development Action Research (RADAR) program as part of the Sekhukhune land IMAGE study was also used in this study. All these were adapted for the purpose of this study and pilot tested.

### **3.7 PILOT STUDY**

A pilot study was carried out in May 2008 among 10 health professionals who were working in another district hospital (Ntunjambili hospital) which is situated 52 km away from the research setting. These 10 health professionals were made up of 8 nursing staff of different categories, 1 doctor and 1 allied health professional. This was arrived at from the proportion of different health professionals that made up the 173 in the study (target) population. This was done to know if any of the participants would have any difficulties understanding any of the items that would be measured. It was also important for logistical issues such as time taken to complete the questionnaire and the suitability of the different sections of the questionnaire. All the comments and feedback of the pilot study participants were recorded and acted on to help in fine tuning the final study questionnaire.

### **3.8 METHOD OF DATA COLLECTION**

Data for this study was collected in June 2008 via a self administered questionnaire that was pilot tested as stated above. During the week prior to the actual data collection week all the unit heads and health professionals working in these units were met in their different units and informed of the study, explaining to them the aims and objectives of the study there of and the fact that participation in the study was totally on a voluntary basis, thus a written consent would be obtained from all of the participants. These

meetings were held on the Wednesday and Thursday of the week prior to the actual data collection week and were also repeated at night so as to meet with the night shift staff. These days were chosen on purpose due to the fact that these are the duty change over days of nurses, who unlike other categories of health professionals in the hospital have working policy of one week on duty and one week off duty with Wednesday being the LAST day on duty of the group ON DUTY and Thursday being the FIRST day on duty of the group OFF DUTY for the week. Though the hospital management was aware of the study and had given its approval, they were still informed when the data collection was about to commence.

Actual data collection for this study was done over four days and four nights. It commenced on Tuesday morning and data collection only stopped early on Saturday morning. During the period of data collection, questionnaires (appendix 2) were shared in the different units of the hospital to all health professionals who volunteered to participate in the study and thus gave informed consent. Each unit was provided with drop boxes for the collection of the filled up questionnaires. This helped to preserve anonymity and confidentiality, for participants names were excluded from the questionnaires. This procedure was repeated throughout the days and nights of data collection. Filled up questionnaires were collected from the drop boxes on a daily basis.

### **3.9 DATA ANALYSIS**

Data analysis for this study was done using the SPSS version 15.0 (SPSS Inc, Chicago, Illinois, USA). Descriptive statistics including measures of central tendency (mean, median) and measures of dispersion (standard deviation) was used to provide statistical summaries of data. Frequency tables and graphical statistics were used for data presentation and visual appreciation of the shape and distribution of the data.

A knowledge score was generated for each of the participants by giving one point to all the correct responses to the 10 knowledge questions and summing them together. This was converted to knowledge percentage score by multiplying the raw scores by 10.

Attitude score was calculated by summing together all likert scale responses for the 22 attitude questions and dividing by 110 (i.e. 22x5) and multiplying by 100 to convert to a percentage. The negatively phrased questions were reversed, so that the higher the score the more positive the attitude for each question. Practices were dealt with as separate outcomes.

Median knowledge scores were compared between categorical demographic variables using Mann Whitney U tests and Kruskal- Wallis tests. Spearman's correlation analysis was used to assess the relationship between age and knowledge score. Non-parametric statistics were used to analyze the median knowledge scores due to the fact that the knowledge scores were skewed to the right.

Mean attitude scores were compared between categorical variables using independent samples t-test and ANOVA. Pearson's correlation analysis was used to assess the

relationship between age and attitude score. Parametric statistics were used to analyze the mean attitude scores due to the fact that the attitude scores were not skewed.

Pearson's chi square tests were used to assess the association between categorical demographic variables and VCT behaviour. Independent samples t-test was used to compare mean age between the VCT behaviour groups.

Knowledge and attitude scores were correlated using the spearman's correlation analysis. The Mann Whitney test was used to compare median knowledge scores between those who practice VCT and those who did not. An Independent samples t-test was used to compare mean attitude scores between those who practiced VCT and those who did not.

### **3.10 RELIABILITY, VALIDITY AND OBJECTIVITY**

Reliability refers to the degree of similarity of the information obtained when the measurement is repeated every time on the same subject or the same group (Katzenellenbogen, Joubert & Abdool Karim, 1997). Though the validity of a measuring instrument refers to the extent to which the instrument measures what it is intended to measure (Riegelman, 2005), test score's validity is dependent on the score's reliability since if the reliability is inadequate, the validity will also be poor (Strunig & Stead, 2001)

Some of the measures employed to ensure reliability, validity and objectivity included the use of a questionnaire developed as detailed above from existing questionnaires whose psychometric properties have been established. The questionnaire was pilot tested as stated above with health professionals in a nearby district hospital. The internal consistency of the measuring instrument which is a measure of the instruments reliability was calculated for the questions on knowledge and attitudes of VCT because these questions have similar scales. The Cronbach's alpha was used in this study as a measure of internal consistency. The Cronbach's alpha is a reliability coefficient based on the average correlation of items within a test if the items are standardized, but on the average covariance among the items if the items are not standardized (Coakes & Steed, 2003). The Cronbach's alpha can range from 0 to 1 with a value of 0.7 or higher being a very good value of reliability.

All phases of this study have been subject to scrutiny by my supervisor as an external auditor with the involvement of a biostatistician all through the study.

### **3.11 BIAS AND LIMITATIONS**

Most worrisome of the envisaged difficulties in this study was ensuring truthful responses from the participants. This was not helped by the personal nature of the questions asked of the participants. However, repeated meetings with the different unit heads and health professionals working in these units helped in ensuring that participants understood the aims and objectives of this study. Also, exclusion of



participant's details from the questionnaire helped to preserve anonymity and confidentiality which in turn was hoped to bring out truthful responses from participants.

Language bias was minimized by the use of simple unambiguous English language which any health professional working in Umpumulo hospital would be comfortable with. This also helped in minimizing recall bias.

Sampling bias would have been a concern if not for the fact that all the 173 health professionals working in Umpumulo hospital were included in the study. The inclusion of all the health professionals working in the hospital did not reduce the concern of a selection bias if those who actually participated in the study were different from those who did not participate. This was reduced by the fact that data collection was done over four days and nights, thus increasing the uptake of participants who were always reminded of the aim and objectives of the study and that the collected data was confidential.

### **3.12 ETHICAL CONSIDERATION**

Prior to embarking on this project, the researcher sort for and obtained approval for this study from the MEDUSA Research and Ethics Committee (MREC) the research project number is MREC/M/70/2008;PG (appendix 4). The study was conducted according to the approved protocol (appendix 1). The researcher also obtained permission from the Umpumulo Hospital Management (appendix 6) and the Provincial Health Research Committee of the Department of Health in KwaZulu Natal Province (appendix 5).

A written informed consent was obtained from all participants; the MREC informed consent form was adapted for the study (appendix 3). The aim and objectives of the study was explained to all the participants and they were assured of the confidentiality of all information obtained. No names were used on the questionnaires to maintain anonymity and confidentiality. Every participant was made to understand prior to participation, that participation in the study was totally on a voluntary basis and participants were free to withdraw at any time during the study if they changed their minds.

## **CHAPTER 4:**

## **RESULTS**

The previous chapter dealt with the study design and methodology. This chapter presents the results of the study starting with an introduction to the results within which the way the remainder of the chapter would be presented is laid out.

### **4.0**

### **INTRODUCTION**

Out of the 173 health professionals employed in Umpumulo hospital, 151 (87.3%) attended work on at least one day or night of the study period and were therefore eligible to participate in this survey. Of the eligible employees, 142 (94.0%) volunteered to participate in the study and thus gave informed consent and collected the questionnaires. Of those who volunteered to participate, 135 (89.4%) returned their questionnaires within the data collection period into the drop boxes provided for that purpose. 11 out of the returned questionnaires were not completely filled, remaining 124 ( 82.1%) fully completed questionnaires that formed the analytical group.

The results are presented below as follows; First, a brief description of the demographics of the studied group. Then the description of the level of knowledge that health professionals in Umpumulo hospital have about VCT for HIV/AIDS. This is

followed by the description of the respondents' attitude towards VCT and their reported practices of VCT.

This would be followed by the results of the inferential statistics to know if there is any relationship between the different socio demographic groups and their level of knowledge, attitude and reported practices of VCT. Next is the presentation of the results of the inferential statistic to know if there is any correlation between the level of knowledge and attitude towards VCT. Finally, the results of the comparisons of the level of knowledge and attitude towards VCT between those who reported practicing VCT and those who reported not practicing VCT would be presented.

#### **4.1            DEMOGRAPHICS**

Of the one hundred and twenty four participants, the majority were females (83.1%) as shown in table 1.

**Table 1: Gender Distribution of Participants (n=124)**

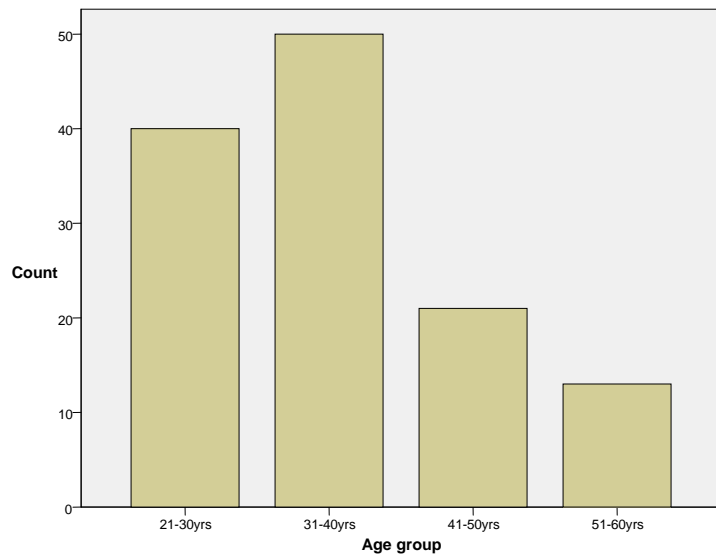
	Frequency	Percent	Valid Percent	Cumulative Percent
--	-----------	---------	---------------	--------------------

Valid	male	21	16.9	16.9	16.9
	female	103	83.1	83.1	100.0
	Total	124	100.0	100.0	

Table 2 shows that the mean age of the respondents was 36.2 years with a standard deviation of 9.1 years and a range from 24 to 59 years. The modal age group was from 31- 40 years followed by 21 – 30 years. This is shown in figure 1.

**Table 2: Summary statistics of participants' age.**

N	Valid	124
	Missing	0
Mean		36.2
Std. Deviation		9.1
Minimum		24
Maximum		59



**Figure1: Age Group of participants**

Over half of the participants were single (53.2%), while 34.7% were married. This is shown in Table 3.

**Table 3: Marital status of participants.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	66	53.2	53.2	53.2
	married	43	34.7	34.7	87.9
	Widowed	2	1.6	1.6	89.5
	living with someone	2	1.6	1.6	91.1
	divorced/separated	11	8.9	8.9	100.0
	Total	124	100.0	100.0	

Table 4 shows that the modal job category group was the nursing staff (81.5%) while 11.3% were allied staff and only 7.3% were medical doctors and dentists.

**Table 4: Occupational distribution of Sample (n=124)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	medical doctor and dentist	9	7.3	7.3	7.3
	nursing staff	101	81.5	81.5	88.7
	allied staff	14	11.3	11.3	100.0
	Total	124	100.0	100.0	

#### **4.2 KNOWLEDGE OF VCT FOR HIV/AIDS**

Table 5 shows the responses to the individual knowledge questions. The correct responses are highlighted in yellow. 99.2% of the respondents felt that there is pre and post-test counseling while undergoing VCT and 98.4% indicated that it is done in a private session where strict confidentiality is assured. A modal response of 87.1% of the participants responded that information about HIV prevention, infection and transmission are provided during VCT and 98.4% indicated 'yes' to the question that a 'positive' test result does not necessarily mean AIDS but means infection with the HIV.



However, the question that if you test 'negative' you are not encouraged to retest in 3 months time due to the 'window period' was the least correctly answered by only 75.8% of the respondents. All the participants (100%) correctly answered 'no' to the question, if you test 'negative' you can never be infected by the HIV in future. A majority (99.2%) indicated 'No' to the question that a client cannot refuse to go for the test after the counseling and 98.4% of the health professionals agreed that the HIV test is done on a sample of the client's blood. A modal response of 98.4% responded 'No' to the question that you are not told when and where to get your test results while 81.5% of the health professionals responded 'No' to the question that the result of the test can be discussed with you over the telephone.

**Table 5: Responses to individual knowledge questions**

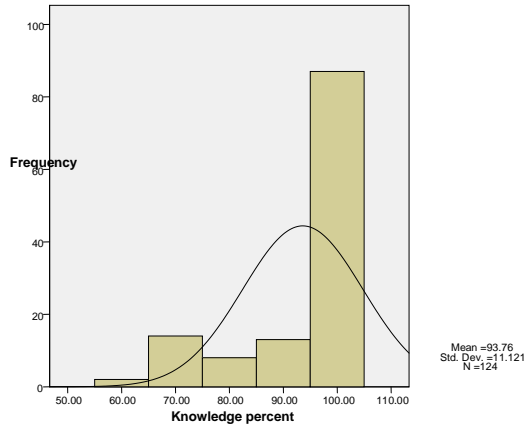
Knowledge question	no		Yes		Don't know	
	Count	Row %	Count	Row %	Count	Row %
No:						
K5.	0	.0%	123	99.2%	1	0.8%
	2	1.6%	122	98.4%	0	.0%

K6.						
K7.	1	.8%	108	87.1%	15	12.1%
K8.	2	1.6%	122	98.4%	0	.0%
K9.	94	75.8%	24	19.4%	6	4.8%
K10.	124	100.0%	0	.0%	0	.0%
K11.	123	99.2%	0	.0%	1	0.8%
K12.	2	1.6%	122	98.4%	0	.0%
K13.	122	98.4%	0	.0%	2	1.6%
K14.	101	81.5%	21	16.9%	2	1.6%

Table 6 shows that the mean knowledge score percent was 93.8% with a median score percent of 100%. The inter quartile range is from 90% to 100% thus only 25% of the sample scored less than 90% and the majority scored 100%. The histogram in figure 2 shows the knowledge scores to be skewed to the higher score; a skewness of the variable to the right, the mean knowledge score percent although 93.8% is artificially low and should not be used to summarize the data.

**Table 6: Summary statistics for knowledge score percent in participants as a whole**

N	Valid	124
	Missing	0
Mean		93.76
Median		100.00
Std. Deviation		11.12
Skewness		-1.61
Std. Error of Skewness		0.216
Minimum		60.00
Maximum		100.00
Percentiles	25	90.00
	50	100.00
	75	100.00



**Figure 2: Knowledge score percent of participants as a whole.**

The Cronbach’s Alpha reliability coefficient for the 10 knowledge questions was 0.749.

### **4.3 ATTITUDE TOWARDS VCT FOR HIV/AIDS**

Table 7 shows the responses to each of the attitude questions prior to reversing the scores of the negatively phrased questions. The negatively phrased items are highlighted in green. For these negatively phrased items, “strongly disagree” was the most positive response, while for the positively phrased items “strongly agree” was the most positive response.

**Table 7: Response to individual attitude questions.**

Attitude question No:	strongly disagree		disagree		Neutral		agree		strongly agree	
	Coun t	Row %	Coun t	Row %	Coun t	Row %	Coun t	Row %	Coun t	Row %
A15	45	35.7 %	48	38.1 %	17	13.5 %	13	11.9 %	1	.8%
A16	4	4.0%	16	13.5 %	24	19.0 %	56	44.4 %	24	19.0 %
A17	34	27.0 %	68	54.0 %	14	11.1 %	4	6.3%	2	1.6%
A18	54	42.9 %	53	42.1 %	11	8.7%	3	2.4%	3	4.0%
A19	18	14.3 %	50	39.7 %	33	26.2 %	15	12.7 %	8	7.1%
A20	62	49.2 %	44	34.9 %	11	8.7%	6	6.3%	1	.8%

A21	4	3.2%	13	10.3 %	12	9.5%	57	45.2 %	38	31.7 %
A22	49	38.9 %	54	42.9 %	14	11.1 %	5	4.8%	2	2.4%
A23	3	3.2%	26	21.4 %	30	23.8 %	41	32.5 %	24	19.0 %
A24	17	13.5 %	34	27.0 %	44	34.9 %	22	17.5 %	7	7.1%
A25	12	9.5%	55	43.7 %	20	15.9 %	33	27.0 %	4	4.0%
A26	68	54.0 %	51	40.5 %	2	2.4%	2	1.6%	1	1.6%
A27	4	4.0%	8	7.1%	20	15.9 %	67	53.2 %	25	19.8 %
A28	9	7.9%	11	9.5%	18	14.3 %	68	54.0 %	18	14.3 %
A29	8	6.3%	31	24.6 %	18	14.3 %	48	38.1 %	19	16.7 %
A30	17	13.5	52	41.3	27	21.4	23	19.0	5	4.8%

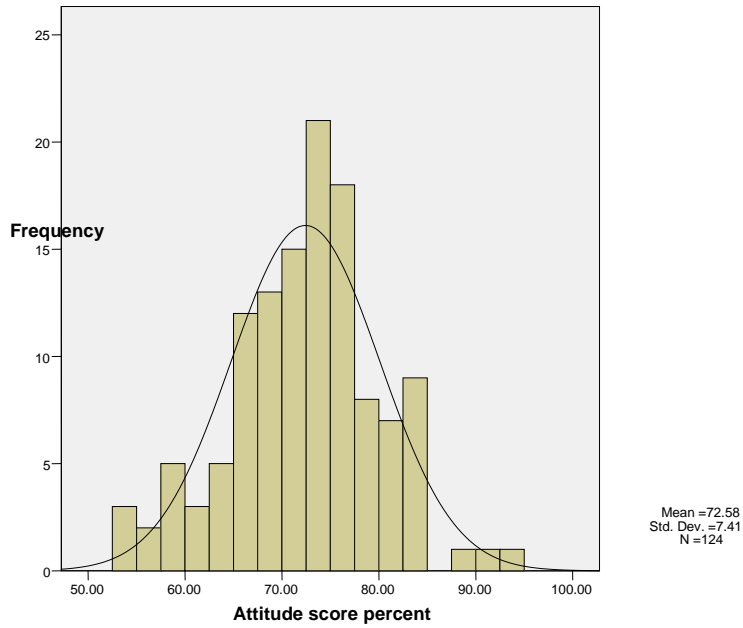
		%		%		%		%		
A31	25	19.8	65	51.6	6	4.8%	25	20.6	3	3.2%
		%		%				%		
A32	4	4.0%	11	9.5%	15	11.9	59	46.8	35	27.8
						%		%		%
A33	10	9.5%	20	15.9	25	19.8	43	34.1	26	20.6
				%		%		%		%
A34	29	23.0	54	42.9	12	9.5%	22	17.5	7	7.1%
		%		%				%		
A35	33	26.2	56	44.4	13	10.3	20	16.7	2	2.4%
		%		%		%		%		
A36	71	56.3	33	26.2	9	7.1%	8	7.1%	3	3.2%
		%		%						

Table 8 shows that the mean attitude score percent was 72.6% with a range from 53.6% to 93.6% out of overall possible range of 20% to 100%. The histogram in figure 3 shows that the attitude score percent is not skewed.

**Table 8: Summary statistics for attitude score percent in participants as a whole.**

N	Valid	124
	Missing	0
Mean		72.58
Median		73.64
Std. Deviation		7.41
Skewness		-0.257
Std. Error of Skewness		0.216
Minimum		53.64
Maximum		93.64
Percentiles	25	68.18
	50	73.63
	75	77.27





**Figure 3: Attitude score percent of participants as a whole**

The Cronbach's alpha reliability coefficient for the 22 attitude questions was 0.695.

#### **4.4 PRACTICE OF VOLUNTARY COUNSELLING AND TESTING**

63.7% of the participants reported practicing VCT. This is shown in Table 9

**Table 9: Responses to "Have you had an HIV Test?"**

		Frequen cy	Percent	Valid Percent	Cumulativ e Percent
Valid	yes	79	63.7	63.7	63.7
	no	45	36.3	36.3	100.0
	Total	124	100.0	100.0	

Table 10 shows the reasons for not having the HIV test in those who have not had the test (n=45). The most common reason given for not doing the HIV test was that they are too afraid to know their HIV results(n=11). Some say they don't think they are at risk, while some do not trust the confidentiality of the result.

**Table 10: Reasons for not doing the HIV test.**

		Frequen cy	Percent	Valid Percent	Cumulative Percent
Valid	never thought about it	8	6.5	7.1	7.1
	don't think i am at	10	8.1	8.9	16.0

	risk				
	fear of stigma/consequences of a positive result	7	5.6	6.3	22.3
	I am afraid to know	11	8.9	9.8	32.1
	do not trust results are confidential	9	7.3	8.0	40.1
	no response	67	54.0	59.8	100.0
	Total	112	90.3	100.0	
Missing	System	12	9.7		
	Total	124	100.0		

Of the 79 respondents who reported practicing the HIV test, Table 11 shows the reasons for doing the test. The majority was voluntary (46) while 12 were as part of antenatal care.

**Table 11: Responses to “if yes, was it voluntary or were you required to take the test”**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	voluntary counseling and testing	46	37.1	47.4	47.4
	tested because a doctor/nurse suggested it	4	3.2	4.1	51.5
	insurance related testing	7	5.6	7.2	58.7
	antenatal testing	12	9.7	12.4	71.1
	testing after needle stick injury	10	8.1	10.3	81.4

Missing	no response	18	14.5	18.6	100.0
	Total	97	73.4	100.0	
	System	27	26.6		
Total		124	100.0		

All the 79 respondents who had tested for HIV/AIDS found out the results of their test, but table 12 shows that only 19 of them tested within the past year with the majority having tested more than a year ago.

**Table 12: Responses to “when did you have your most recent test?”**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	within the past year	19	15.3	21.1	21.1
	between 1 and 2	36	29.0	40.0	61.1

	years				
	between 2 and 4 years	16	12.9	17.8	78.9
	more than 4 years	5	4.0	5.6	84.5
	don't know	3	2.4	3.3	87.8
	no response	11	8.9	12.2	100.0
	Total	90	72.6	100.0	
Missin g	System	34	27.4		
	Total	124	100.0		

Table 13 shows that it was most common for respondents to test in a private GP (32) although many also tested in this hospital (27).

**Table 13: Responses to “where did you go for the test”?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	the clinic that I use for minor health problems	7	5.6	8.0	8.0
	this hospital	27	21.8	30.7	38.7
	clinic or hospital in another region	10	8.1	11.4	50.1
	private GP	32	25.8	36.4	86.5
	at home with a home test kit	2	1.6	2.3	88.8
	other	1	.8	1.1	89.9
	no response	9	7.3	10.2	100.0
	Total	88	71.0	100.0	
Missing	System	36	29.0		
	Total	124	100.0		

**4.5 SOCIODEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH KNOWLEDGE, ATTITUDE AND PRACTICE OF VCT FOR HIV/AIDS.**

**4.5.1 SOCIODEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH KNOWLEDGE OF VCT FOR HIV/AIDS.**

Knowledge scores were not significantly associated with any demographic groups.

(Tables 14 and 15)

**Table 14: Knowledge Scores by demographics.**

		Knowledge score percent			p value
		Median	Percentile 25	Percentile 75	
gender	male	100	90	100	0.206
	female	100	100	100	



marital	single	100	90	100	0.732
	married	100	90	100	
	widowed	90	80	100	
	living with someone	100	100	100	
	divorced/separated	100	100	100	
job	medical doctor/dentist	100	90	100	0.485
	nursing staff	100	90	100	
	allied staff	100	80	100	

**Table 15: Knowledge score by age**

			Knowledge score percent
Spearman's rho	age	Correlation Coefficient	0.104
		Sig. (2-tailed)	0.244
		N	124

#### **4.5.2 SOCIODEMOGRAPHICS CHARACTERISTICS ASSOCIATED WITH ATTITUDE TOWARDS VCT FOR HIV/AIDS.**

Attitude score was significantly associated with marital status groups ( $p=0.012$ ).

Divorced/separated people had a significantly higher attitude score than single people ( $p=0.028$ ), the other categories were not significantly different (Table 16). There was a statistically significant correlation between age and attitude score but this was a very weak positive correlation (Table 17).

**Table 16: Attitude score by demographics**

		Attitude score percent		p value
		Mean	Standard Deviation	
gender	male	74.0	8.5	0.321
	female	72.3	7.2	
marital	single	70.6	6.8	0.012
	married	74.1	8.3	
	widowed	75.9	1.9	
	living with someone	74.5	0.0	
	divorced/separated	77.7	4.3	
job	medical doctor/dentist	76.9	6.7	0.116
	nursing staff	72.3	6.8	
	allied staff	71.5	10.8	

**Table 17: Attitude score by age**

		Attitude score percent
age	Pearson Correlation	0.262(**)
	Sig. (2-tailed)	0.003
	N	124

\*\* Correlation is significant at the 0.01 level (2-tailed).

#### **4.5.3. SOCIODEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH PRACTICE OF VCT FOR HIV/AIDS**

There were no associations between demographic groups and practice of VCT for HIV/AIDS (Tables 18 and 19).

**Table 18: Demographics by VCT practice**

		Have you had a HIV test?				p value
		yes		no		
		Count	Row N %	Count	Row N %	
gender	male	14	66.6%	7	33.3%	0.675
	female	65	63.1%	38	36.9%	
marital	single	43	65.2%	23	34.8%	0.662
	married	29	67.4%	14	32.6%	
	widowed	1	50.0%	1	50.0%	
	living with someone	1	50.0%	1	50.0%	
	divorced/separated	5	45.5%	6	54.5%	
job	medical doctor/dentist	5	55.5%	4	44.4%	0.420
	nursing staff	63	62.4%	38	37.6%	
	allied staff	11	78.6%	3	21.4%	

**Table 19: Age by VCT practice**

	Have you had a HIV test?	N	Mean	Std. Deviation	Std. Error Mean	p value
age	yes	79	35.86	8.579	.953	0.511
	no	45	36.98	9.919	1.479	

#### **4.6 ASSOCIATIONS BETWEEN THE LEVEL OF KNOWLEDGE, ATTITUDE AND PRACTICES OF VCT FOR HIV/AIDS**

There was a statistically significant although weak correlation between knowledge and attitude scores (Table 20). Thus as one score increased, so did the other to a small extent. While attitude scores ranged from low to high most knowledge scores were very high, thus giving rise to the weak correlation.

**Table 20: Spearman's correlation between knowledge and attitude**

		Knowledge score percent
Attitude score percent	Correlation Coefficient	0.185(*)

	Sig. (2-tailed)	0.038
	N	124

\* Correlation is significant at the 0.05 level (2-tailed).

Table 21 shows that there was no significant difference in knowledge scores between those who had an HIV test and those who had not ( $p=0.250$ ).

**Table 21: Comparison of median knowledge scores and VCT behaviour**

	Have you had a HIV test?	N	Mean Rank	Sum of Ranks	p value
Knowledge score percent	yes	79	65.70	5321.50	0.250
	no	45	59.54	2679.50	
	Total	124			

Table 22 shows that there was no significant difference in attitude scores between those who had an HIV test and those who had not ( $p=0.054$ ).

**Table 22: Comparison of mean attitude scores and VCT behaviour**

	Have you had a HIV test?	N	Mean	Std. Deviation	Std. Error Mean	p value
Attitude score percent	yes	79	73.52	7.231	.803	0.054
	no	45	70.87	7.516	1.120	



## 5.0 INTRODUCTION

In the previous chapter, the results of the study were presented. This chapter discusses methodological issues and the research findings placing them in the literature so as to better understand the results.

## 5.1 DISCUSSION OF METHODOLOGICAL ISSUES

### 5.1.1 DESIGN

One of the characteristics of quantitative research is its ability to establish causal relationship between constructs (Strunig et al, 2001). However, Bowling (2002) notes that because the investigation of causality requires the use of an experimental research design, which is not always possible, the issue of causal hypothesis and explanations is problematic when one is investigating human behavior. This problem was thus encountered in this study for it aimed at investigating and understanding human behavior. In solving this type of problem, Bowling (2002) suggests that sociological observational research methods are appropriate where the phenomenon of interest can be observed directly, but this is also not always possible. She concludes that the alternative is to ask people to describe and reconstruct events by using survey methods. Descriptive surveys are carried out in order to describe populations, to study associations between variables and to establish trends (Bowling, 2002). These surveys can either be done at one point in time (cross-sectional) or at more than one point in time (longitudinal). Although, it is usually difficult to assess the temporal sequence of events using the cross-sectional approach, yet in trying to achieve the set aim and

objectives of this study it was not only appropriate but relatively cheap to use the descriptive cross-sectional quantitative survey approach.

### 5.1.2 RELIABILITY AND VALIDITY

These concepts which have been defined earlier (cf section 3.10) are connected to each other in the sense that test score's validity is dependent on the score's reliability since if the reliability is inadequate, the validity will also be poor. The Cronbach's alpha was used in this study to calculate internal consistency which is a measure of reliability. The Cronbach's alpha can range from 0 to 1 with a value of 0.7 or higher being a very good value of reliability. The Cronbach's Alpha reliability coefficient for the knowledge and attitude questions was 0.749 and 0.695 respectively. Though these values suggests that the measuring instruments used where of good internal consistency and thus reliable, its validity may still be in jeopardy. Face validity which refers to the extent to which the measure or questionnaire makes sense (Katzenellenbogen et al, 1997) was achieved by the fact that the questions asked in the questionnaire were relevant, unambiguous and clear. Other measures aimed at ensuring validity include the use of a questionnaire developed from existing questionnaires whose psychometric properties have been established and the pilot testing of the questionnaire prior to the main study. Part of the reason for the pilot study was to test the content of the questionnaire for content validity which refers to whether the items measure the subject matter they are intended to measure.

### 5.1.3. BIAS, LIMITATIONS AND GENERALIZABILITY OF FINDING

Though some of the concerns about the reliability and validity of the results of this study have been dealt with earlier (cf section 3.11), non-response bias was not. Non-response bias which is due to differences in the characteristics between the responders and non-responders to the study (Bowling, 2002) is likely to be of great concern when characteristics of the non-respondents are not known. Missing information is another source of concern because they could be hiding an underlying value that would have been meaningful for analysis. However, Bowling (2002) notes that research results on the characteristics of non-responders is inconsistent. Thus, this study did not analyze non-response and missing information as only the 124 (82.1%) fully completed questionnaires formed the analytical group. Acquiescence response set or 'yes saying' was also a concern and this refers to the fact that respondents will more frequently endorse a statement than disagree with its opposite (Bowling, 2002). This was discouraged as some of the statements in the questionnaire were immediately followed by opposing statements.

According to Strunig et al (2001), the quantitative researcher wishes to generalize results beyond the confines of the research sample. The present study did not need to draw a sample from the study population for all the possible members of the study population were included in the study. However, not all those included in the study formed the analytical group for various reasons that have already been outlined in section 4.0. Thus non-members of the analytical group might be different from the members of the analytical group and as such one might doubt the generalizability of the

study findings to all the health professionals in Umpumulo hospital or even to health professionals in other settings.

## 5.2 DISCUSSION OF THE STUDY FINDINGS

### 5.2.1 Knowledge of VCT for HIV/AIDS

Having in mind the fact that the participants in this study are health professionals, it was no surprise that they had a very high and good level of Knowledge of VCT for HIV/AIDS. Although no other studies were found on the Knowledge of VCT for HIV/AIDS among HCWs in South Africa or elsewhere thus making comparisons difficult, very high levels of knowledge of VCT for HIV/AIDS was reported by Bwambale et al (2008) among men in rural Western Uganda. Bwambale et al (2008) found that 80.1% of the respondents said they were aware of VCT, 78.6% knew that pretest counseling was involved in VCT, 92.6% knew it also involved taking of blood and 81.6% knew VCT involved counseling on the prevention and control of HIV/AIDS. They went ahead to conclude that most men in their study were familiar with the VCT programme and its procedure. Thus in this study, the high level of VCT knowledge among participants might be due to the fact that the participants were health professionals working in a country where more than half of the hospital patients are sero-positive. Another reason could be that most of the participants have undergone VCT training and can actually provide VCT services if need be, for in South Africa, HCWs other than trained VCT counselors are involved in the provision of VCT services. However, there were still some knowledge gaps as almost 25% of the study participants did not understand the concept of the 'HIV window period' and almost 1 in 5 of the health professionals thought that test results can be

discussed over the telephone. This highlights the need for more educational programmes so as to reduce these identified gaps.

### 5.2.2 Attitude towards VCT for HIV/AIDS

Study participants had a moderately supportive attitude towards VCT for HIV/AIDS with a mean attitude score percent of 72.6% and a range from 53.6% to 93.6% out of overall possible range of 20% to 100%. This might be due to the very high level of VCT knowledge shown by the respondents to this study. Similar findings were reported by Peltzer et al (2004) among American university students when they used a similar instrument to measure attitude towards VCT for HIV/AIDS. They found that American students had significantly more positive attitude toward HIV testing than South African and Indian students and related this finding to the strong presence in US universities of programs on education and prevention of HIV infection. Other studies, including the studies conducted among groups of HCWs in Benin, Nigeria and Yunnan Province of China used VCT acceptability as a measure of attitude towards VCT for HIV/AIDS ( Admassu & Fitaw, 2006; Hesketh, Duo, Li & Tomkins, 2005; Ikechebelu et al, 2006; Iliyasu et al, 2006; Okojie et al, 2004). Although all these studies found high levels of VCT acceptability among the various study participants, the value of acceptability of VCT as a measure of attitude towards VCT for HIV/AIDS remains questionable. In the present study, though participants showed a moderately supportive attitude towards VCT for HIV/AIDS there were still some important concerns. Almost 20% of the present study participants were afraid that the community would discriminate against them if they found out they tested sero-positive. This finding differed from those of Admassu et

al (2006) who reported that 33% of their respondents believed that if one decides to have VCT he/she would not have community support. This study, done among different professional and community groups in Gondar, Ethiopia went ahead to show that most of the respondents that reported a lack of community support were not willing to accept VCT. This was also observed by Iliyasu et al (2006) when they noted that 48% of their study participants who reported avoiding VCT did so because they were afraid the community would discriminate against them in case of a positive test result. In the present study more than half of the respondents were afraid that their partners would leave them if they are HIV positive and 1 in 3 thought their partner will think they're cheating if they decide to go for HIV test. This could be due to gender inequality and harmful gender norms as majority of this study's participants were females. This means that programmes aimed at 'significant others' in these respondents' lives might also be very important. It is important to note that this study found that as much as 2 out of 3 respondents were afraid that the person they know might test them for HIV and tell other people. All these show that even among this group with moderately supportive attitude, HIV associated stigma, discrimination and confidentiality breach are still a concern and should be considered in future HIV educational and training programmes.

### 5.2.3 Practice of VCT for HIV/AIDS

Results show that 63.7% of the study participants reported that they have had an HIV test in the past. This finding is higher than the 41% testing prevalence reported by Hamill et al (2006) among new employees of the British National Health Scheme but lower than the 71.9% reported by Okojie et al (2004) among HCWs in a tertiary hospital

in Benin, Nigeria. One of the reasons for these differences is the finding by Hamill et al (2006) of a testing prevalence of 56% among participants originally from areas of endemic HIV, a trend which shows that HCWs from these areas may have a tendency to test more for HIV due to a perceived vulnerability to HIV. Secondly, the study by Okojie et al (2004) just like the present study was done in Sub-Saharan Africa the region most affected and endemic of HIV. Consistent with the finding by Hamill et al (2006), voluntary counseling and testing was the commonest reason given in the current study to test for HIV. This was also the reason given for testing by almost half of the respondents in the study by Okojie et al. In the present study the second commonest reason for the participants to sort VCT is as part of antenatal care, while testing after needle stick injury is the third commonest reason given for going for VCT. The fear of knowing ones test result was the most frequent reason given for not testing for HIV. This was consistent with findings from other studies (Hamill et al, 2006; Iliyasu et al, 2006; Peltzer et al, 2004; Weiser et al, 2006). Other reasons given for not testing are perceived low risk of HIV, concern about confidentiality of result and fear of stigma. Some of these issues are similar to the concerns raised with regards to attitude toward VCT for HIV/AIDS and a qualitative study could add deeper understanding of these attitudes, fears and perceptions. All the study participants found out the results of their test and most tested more than a year ago with the majority preferring to test at a private GP. This might be due to their concern with confidentiality of the test result and being afraid that the person they know might test them making them to prefer testing at a private GP.

#### 5.2.4 Sociodemographic characteristics associated with Knowledge, Attitude and Practice of VCT for HIV/AIDS

This study found a significant association between marital status and attitude toward VCT for HIV/AIDS. Divorced/separated respondents had a significantly higher attitude score than single respondents. Although comparison might be difficult due to differences in population groups and measurement parameters, studies done in South Africa and elsewhere have shown contradictory findings in the relationship between marital statuses, VCT and HIV/AIDS (Shisana, Zungu-Dirwayi, Toefy, Simbayi, Zuma & Malik, 2004; Thior, Gabaitiri, Grimes, Shapiro, Lockman, Kim, Kebaabetswe, Garmey, Montano, Peter, Chang, Marlink, & Essex, 2007; Worku & Enguselassie, 2007). For example, while Thior et al (2007) found that unmarried women were more likely to accept VCT than married or cohabiting women, Worku et al (2007) found that the odds of VCT acceptance was higher among married women. These might suggest a more complicated relationship between marital status and VCT, possibly involving other factors. It must be remembered that the fact that one is single does not mean that one does not have a partner and people who are married might as well be in polygamous relationships. In their study in South Africa, Shisana et al (2004) concluded that the relationship between marital status and HIV is complex and went ahead to suggest that various other demographic factors and sex behavior could be having an influence on this relationship. Although in the present study single participants had lower mean attitude score than other marital status groups, other factors could as well be having an influence on this relationship between marital status and VCT in this group and thus



needs further exploration. There was a significant but very weak positive correlation between age and attitude score in this study. However, findings from studies done in Sub-Saharan Africa among other population groups that tried to explore the relationship between age and VCT for HIV/AIDS have also been inconsistent (Bwambale et al, 2008; Iliyasu et al, 2006; Muula & Misiri, 2004; Thior et al, 2007). There were no significant association between other demographic categories and attitude score. Knowledge of VCT for HIV/AIDS was not significantly associated with any demographic groups. This may be due to the fact that there was little variability in the knowledge score as most participants had very high knowledge scores. There was also no significant association between demographic groups and practice of VCT for HIV/AIDS.

#### 5.2.5 Association between the levels of knowledge, Attitude and Practice of VCT for HIV/AIDS

There was a significant but weak correlation between knowledge of and attitude towards VCT for HIV/AIDS. This was not unexpected having in mind the findings of this study of very high VCT knowledge scores and moderately high VCT attitude scores, which ranged from low to high. There was no significant difference in VCT knowledge scores between the two VCT practice groups and this might also be attributed to the whole groups' very high knowledge of VCT. There was no significant difference in attitude scores between those who had an HIV test and those who had not. Some of the reasons for this might be related to the finding that both VCT practice groups had mean

attitude scores that were not very different from the mean attitude score of all the study participants put together. Secondly, for the group that had practiced VCT, more or less supportive attitude towards VCT might have been formed after undergoing VCT. Thus some of those who have practiced VCT might as well be having less supportive attitude towards VCT for one is not sure of the temporal sequence of events, which is one of the limitations of the cross-sectional design. Thirdly, though the probability value was not statistically significant it was approaching it, thus suggesting a possible difference in the attitude scores between the two VCT practice groups. This difference might have been exposed if the number of participants in the present study was large enough. For example, Kalichman et al (2003) found that in a black township in Cape Town, participants who had not been tested for HIV held significantly more negative HIV testing attitude than participants who had been tested. This study was done on a larger sample consisting of 500 participant members of the public while the present study was done on 124 health professionals. Fourthly, factors other than knowledge and attitude towards VCT could also be affecting this groups' practice of VCT. One might then conclude that amongst this group of health professionals with very good knowledge of and moderately supportive attitude towards VCT, knowledge and attitude towards VCT might be important but not the only factors that determine their VCT behavior. These factors might include but are not limited to financial, informational, cultural, organizational and other social psychological factors. Thus efforts to improve the practice of VCT in this group must not stop at improving the already identified gaps in knowledge and attitude towards VCT. These efforts should include identifying and understanding all these other factors which could also be of equal importance.

**6.0 INTRODUCTION**

The previous chapter discussed the methodology and the results of the study. This chapter concludes the study making recommendations drawn from the main issues arising from the study.

**6.1 CONCLUSIONS**

This study set out to determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS among its target population. Overall, the study observed a very high level of knowledge of VCT, though some unmet VCT knowledge needs were also identified. The study participants had a moderately supportive attitude towards VCT, though even in this group concerns about HIV associated stigma, discrimination, adverse effects of sero-status disclosure and confidentiality breach persists. A moderately high VCT practice was found which corroborates those of a previous study in a similar population group. The finding that divorced/separated respondents to this study had more supportive attitude towards VCT than their single colleagues could have been influenced by the complex relationship between marital status and VCT. Though findings from previous studies that explored the relationship between age and VCT have been inconsistent, age was found in this study to have a very weak but positive correlation to attitude score. Other findings in the current study revealed that there was no significant difference in knowledge and attitude scores between those who practiced VCT and those who did not. Added to knowledge

and attitude towards VCT, other factors could also be playing a role in determining VCT behavior and thus need further exploration.

## 6.2 RECOMMENDATIONS

The findings of this study are useful as it brought out a number of issues leading to the following recommendations;

1. The demonstration to the hospital management using the findings of this study of the need for more HIV-related educational programmes for hospital staff so as to help fill identified gaps.
2. Organizing in an ongoing manner educational programs to bridge these gaps.
3. A senior doctor and other health professionals should ideally be stationed at the staff clinic which should be well located within the hospital and should among other services offer confidential VCT.
4. The training of these staff clinic members on counseling techniques and the comprehensive management and care of sero-positive clients in the work place.

5. The team at the staff clinic should network with other health care agencies in the community most especially the private GPs as it has been shown that they play an important role in the care of the hospital staff members.

6. Finally, future studies that would be aimed at identifying and understanding other factors other than knowledge and attitude that could also be important in determining VCT behavior in this group should be encouraged and facilitated.

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## APPENDIX 1

APPROVED RESEARCH PROTOCOL

**STUDENT: *DR A. C. OBIAJULU***

**TITLE: The Knowledge, Attitude and Practice of  
Voluntary, Counseling and Testing (VCT) for HIV  
/AIDS amongst the health professionals in  
Umpumulo Hospital, Maphumulo, ILembe District,  
Kwa Zulu Natal Province**

**SUPERVISOR: *DR. C. C. CLARK***

**DEPARTMENT: FAMILY MEDICINE AND PRIMARY  
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## **INTRODUCTION**

The announcement made by the south African government on the 8th of August 2003, two (2) days after the much advertised national AIDS conference in Durban (3 – 6 August 2003) that it had finally endorsed the need for a rollout of antiretroviral (ARV) drugs for the majority of people living with HIV / AIDS who are attending and using the public health facilities spread all over the country was greeted by all, both inside and outside South Africa as a movement in the right direction. Subsequently, all the nine (9) provincial governments followed the national government and rolled out ARV drugs in their various provincial public health facilities and ever since then there has been a rapid scaling up of public HIV treatment services with more and more clients accessing ARV drugs.

In South Africa today, voluntary counseling and testing (VCT) for HIV / AIDS is the gateway for accessing ARV drugs for those who need them. Thus as the government has led by rolling out ARV drugs, setting up VCT centers with so many trained counselors and scaling up public HIV treatment services it is left for us the citizens to follow by availing our selves of these services. This we can do by first getting tested for HIV and it is our test result that would show us the route we have to follow in this battle against the scourge of HIV/AIDS.

## **THE STUDY PROBLEM**

The researcher presently works in Umpumulo hospital in the Ilembe district of Kwazulu Natal province, after spending more than three (3) years in Jane Furse hospital in the Sekhukhune district of Limpopo province and had observed, though sadly, how some of our staff members had lost the battle against AIDS. Surely, it is the people that have lost the battle that I know of but how about the people who do not even know that they are living with the virus and have unknowingly been exposing other people most especially their partners. This has led me to begin to ask my self so many questions as regards the health professional's awareness of VCT, the health professional's attitude and perceptions of VCT and their practice of VCT. Do we, as health workers really know our status? Are we testing for HIV or are we just telling our clients about HIV and not looking after our selves?

Sadly not much has been reported about the different expressions of this pandemic amongst this particular group of people and thus the results of this study will help answer some of the above questions and by so doing help the health facility managers in understanding the health professionals awareness and attitude towards VCT and by so doing begin to look at strategies to reverse negative attitudes if they exist.

It would also help health facility administrators in planning ways of improving or if not in existence already of setting up in house HIV / AIDS interventions which could be linked to fixed targets towards caring for the carers and if possible incentivising HIV testing for all levels of staff.

## **LITERATURE REVIEW**

One of the ironies of the HIV/AIDS epidemic most especially as it affects South Africa is the bewildering array of figures and statistics pouring out from different sources. This has more or less created some confusion as to what the real situation is, but in summary what every report is pointing to is that the HIV/AIDS epidemic in South Africa is huge and it is affecting everybody in the country.

According to the recently published global report on HIV/AIDS 2006, South Africa has an estimated 5.5 million people living with HIV and has the highest prevalence of HIV/AIDS than any other country in the world<sup>(1)</sup>. This report does not differ to a large extent with the findings of a recent survey done by the Human Sciences Research Council in conjunction with the Nelson Mandela foundation which showed that HIV prevalence in the general population was 11.4% (12.8% in females and 9.5% in males) with blacks having the highest HIV prevalence (21.6%).<sup>(2)</sup> In another study done on the burden of disease estimates for South Africa it was found that HIV/AIDS was the number one cause of loss of years of life accounting for 38% of the total years of life loss (YLLs).<sup>(3)</sup> This is not surprising due to the fact that HIV/AIDS contribute heavily to infant deaths and deaths at the young productive adult ages. In a study done in Mosvold Hospital in Northern Kwazulu Natal it was found that HIV/AIDS was by far the most common individual cause of death in both males and females responsible for 44% of all deaths in the hospital with the peak age between the 30 – 34 year age group.<sup>(4)</sup> Nationally, Statistics South Africa has estimated using the metropolitan – Doyle model that the annual number of AIDS deaths will increase from 120,000 to between 545,000 and 635,000 between 2000 and 2010,

infact, it is also estimated that the HIV/AIDS epidemic will cost South Africa 17% in GDP growth in 2010. <sup>(5)</sup>

South Africa is there fore experiencing an HIV/AIDS epidemic of enormous proportions, and some of the above studies have shown that the pandemic is worse amongst those in the most productive years of life between 20 – 40 years of age. In a study done to determine the prevalence of HIV in workforces in Southern Africa it was found that on the average 17% of workers across all countries, sectors, job levels and age groups was HIV positive at the time of the survey. <sup>(6)</sup> The health workers, including the health professionals have also been affected in a delirious way by this raging epidemic.

This is not only because of the fact that the epidemic has presented the health work force with a remarkably increased workload with estimates of 50% of hospital beds being occupied by AIDS patient <sup>(7)</sup> but also because of the fact that 11.5% of the health workers in two of Gauteng provinces public hospitals <sup>(8)</sup> and 15.7% of the health workers in four provinces of the country are themselves HIV positive. <sup>(9)</sup>

This has an enormous implication due to the fact that HIV/AIDS in the health care work force challenges the success of both general and AIDS related health care investments by reducing the average level of work experience and driving up costs for public sector health budgets. <sup>(8)</sup>

Thus, the importance of sustaining and expanding the fight against HIV/AIDS within the whole population in general and the health work force in particular cannot be over – emphasized.

In view of the above facts, the focus has turned to identification of infected individuals via Voluntary Counseling and Testing (VCT) as a link to treatment and control of the spread of HIV

epidemic. VCT for HIV/AIDS is a concept developed in this direction and a multi centre randomized clinical trial done in the United States (project RESPECT) has shown that VCT can reduce high risk sexual practices and can decrease rates of sexually transmitted infections including HIV/AIDS. <sup>(10)</sup> The VCT is a process where by individuals willingly under go counseling to help them make an informed choice about being tested for HIV. It emphasizes that this decision must be entirely the choice of the individual and there must be assurance of the process being confidential. <sup>(11)</sup> Thus, a vigorous VCT service targeted at health workers is necessary to afford them the opportunity to learn their HIV status. This can only be successful if the knowledge, attitude and practice of VCT amongst the health workers themselves is understood, thus giving health planners an insight into factors that motivate or deter individuals from seeking HIV antibody testing. This is due to the fact that an individual's health related behavior or practice has been shown to be influenced by their knowledge of the disease and necessary health promoting actions to prevent or ameliorate the condition as well as their attitudes and beliefs which can either be positive or negative feelings and opinions towards the disease or health promoting actions. <sup>(12)</sup> Several social psychological theories have been used to help explain how behavior is determined by attitudes and beliefs; these include the information – motivation – behavioral skills model, the theory of reasoned action, the attribution theory, the Bandura's social learning theory and the most prominent of these is the Health Belief Model. <sup>(12,13)</sup> The Health Belief Model postulates that the most important health beliefs that influence actions are thought to be the person's perceived vulnerability to a particular condition or illness, the person's perceptions of the severity or effects of the condition or illness and their perception of the efficacy, costs and benefits of any proposed actions. <sup>(12)</sup>

Some of the reasons that have been given for HIV antibody testing refusal across the reviewed studies are concerns about privacy which range from fears about breaches of confidentiality and the issue of who has access to information about one's HIV status to embarrassment about requesting the HIV antibody test. <sup>(13, 14)</sup> AIDS related stigmas are another factor that probably influences seeking VCT in South Africa. Stigmatizing beliefs about AIDS and associated fears of discrimination can influence decisions to seek HIV testing and HIV treatment services. <sup>(14, 15)</sup>

In a study conducted in the United States, it was reported that two out of three men who have sex with men who were unaware of their HIV status indicated that AIDS related stigmas were an important factor in their testing decisions. <sup>(15)</sup> Other reasons given for failing to be tested include fear of learning they are HIV – positive, belief that they are unlikely to have been exposed to HIV and concerns about partner notification following positive test results. <sup>(13, 14)</sup>

Thus, it can be seen from the studies above that HIV/AIDS is a big problem with high prevalence rate within the work forces in general and the health professionals in particular. Studies have been done to determine the knowledge, attitude and practice of VCT for HIV/AIDS among different subsets of the population but none has been done amongst the health workers including the health professionals and this study would want to determine these psychological and personal variables in this very important set of people.

## **RESEARCH QUESTION**

What is the knowledge, attitude and practice of voluntary counseling and testing (VCT) for HIV/AIDS amongst the health professionals in Umpumulo Hospital, Mapumulo, Ilembe District, KZN Province

## **RESEARCH SETTING**

This research will be carried out in Umpumulo Hospital, a district Hospital located in the Ilembe district of Kwazulu Natal province

## **AIM OF THE STUDY**

To determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS amongst the health professionals in Umpumulo Hospital.

## **OBJECTIVES**

- To determine the level of knowledge that health professionals in Umpumulo Hospital have about VCT for HIV/AIDS.
- To access and understand the attitudes of the health professionals in Umpumulo Hospital towards VCT for HIV/AIDS.
- To know what proportion of health professionals in Umpumulo hospital actually practice VCT for HIV/AIDS.
- To know if the sociodemographic characteristics of health professionals in Umpumulo hospital has any association with their level of knowledge, attitude and practice of VCT for HIV/AIDS.
- To determine if there are any associations between the level of knowledge, attitude and practice of VCT for HIV/AIDS amongst the health professionals at Umpumulo hospital.

## **IMPLEMENTATION OBJECTIVES**

This study would be of primary benefit to the health professionals and the rest of the hospital workers and of secondary benefit to the hospital and the patient that are cared for in the



hospital, thus the implementation objectives is to use the research results to make the following recommendations to the hospital management:

- To second a senior doctor to set up a staff clinic in an ideal location within the hospital which would, among other services, offer confidential VCT for HIV/AIDS.
- To organize in an ongoing manner educational programmes for hospital workers to raise awareness of the existence of the staff clinic and the services it renders including VCT for HIV/AIDS.
- To use the medium of the above stated educational programme to bridge the gaps identified by the research in a partnership with the health care workers.
- To make sure that all hospital workers are aware of and understand the content of the health departments policy on HIV/AIDS in the work place.

## **STUDY DESIGN**

This would be a descriptive cross – sectional quantitative survey. These types of surveys are called descriptive surveys because the information is collected from a sample of the population of interest and descriptive measures are calculated. <sup>(16)</sup>

They are also known as cross – sectional because the data are collected from the population of interest at one point in time and these surveys can be designed to measure certain phenomena e.g. events, behavior, attitudes etc in the population of interest. <sup>(16)</sup>

## **STUDY (TARGET) POPULATION**

The study population would include all the health professionals working in Umpumulo Hospital. For the purposes of this study, health professionals are defined as medical doctors, dentists, registered nurses, enrolled nurses, enrolled nurse assistants and allied health professionals (pharmacists, social workers, occupational therapists, physiotherapists, radiographers, pharmacist assistants, laboratory scientist and other professionals at the same level).

Using the above definition, a total of 173 health professionals were identified to be working in Umpumulo hospital and they would all be included in the study. All the health professionals, as defined above, working at Umpumulo hospital at the time of the study would be included in the study.

Thus there would not be any need for sample selection because all the health professionals working in the hospital, though attached to different professions would be included in the study. Health professionals who are on leave or who are absent from duty during the period of data collection, would be excluded from the study .Only those who have given their consent would participate in this study.

## **DEVELOPMENT OF THE QUESTIONNAIRE**

The questionnaire was designed based on the publications already cited and existing questionnaires whose psychometric properties have been established. Bruce K E et al developed a scale to measure attitudes about HIV – Antibody testing <sup>(13)</sup> and this has been used by Peltzer K et al to measure attitudes towards HIV – Antibody testing among University students in India, South Africa and United States of America <sup>(14)</sup> The questionnaire developed by Pronyk P et al of the Rural AIDS and Development Action Research (RADAR) program as part of the Sekhukhuneland image study was also used in this study. All these have to be adapted for the purposes of this study and pilot tested using 10 health professionals who are working in another district hospital 50 km away from the research setting. This would be done to know if any of the subjects would have any difficulties understanding any of the items that would be measured. It would also be important for logistical issues such as time taken to complete the questionnaire and the suitability of the different sections of the questionnaire. All the comments and feedback of the pilot study participant would be recorded and acted on to help in fine-tuning the final study questionnaire.

## **METHOD OF DATA COLLECTION**

Data for this study would be collected via a self-administered questionnaire that has been pilot tested as stated above. These questionnaires would be distributed to each of the unit heads according to the number of health professionals in each unit. The researcher would have met with the unit heads earlier to inform them of the research and solicit their assistance with

the research, most especially with the distribution of the questionnaires to all the health professionals in their respective units. Only health professionals who consent to participate in the study are expected to fill out the questionnaires. Each unit would have a drop box where the health professionals who fill out the questionnaires can drop the questionnaires after filling them out.

The distribution of the questionnaires would also be repeated at night so that night shift staff can participate in the study. Drop boxes would also be distributed for collection of questionnaires.

## DATA ANALYSIS

SPSS version 13(SPSS Inc., Chicago, Illinois, USA) will be used for data analysis. Descriptive statistics will be mainly used to assess the study objectives. These include frequency tables in the case of categorical variables, with supporting bar charts, and summary statistics such as mean and standard deviation, or median and interquartile range in the case of quantitative or ordinal variables.

A Knowledge score will be generated by summing together all the correct responses to the knowledge questions for each participant and expressing this score as a percentage of the total number of questions. This will also be done with the attitude questions, except that there are no correct answers for these questions. Instead positive attitudes will be allocated higher scores

than negative attitudes, thus the higher the attitude score, the more positive the attitude.

Practices cannot be scored, and they will be dealt with as separate outcomes.

In order to determine if the demographic variables affected knowledge and attitudes, the scores will be compared between the demographic groups using ANOVA or Kruskal-Wallis tests (depending on the distribution of the dependant variables) in the case of >2 groups being compared and using t-tests or Mann-Whitney tests in the case of 2 independent groups being compared. Key practice responses will be compared between demographic groups using cross tabulations and Pearson's chi square tests.

Relationships between knowledge and attitudes will be assessed using Spearman's correlation analysis. Relationships between knowledge or attitudes and practices will be assessed using ANOVA (or Kruskal-Wallis) or t-tests (or Mann-Whitney tests) as appropriate.

All statistical tests will be conducted at the 2-sided 0.05 level of significance.

## **RELIABILITY, VALIDITY AND OBJECTIVITY**

The following measures will be employed to ensure reliability, validity and objectivity:

- The use of adapted form of existing questionnaires whose psychometric properties have been established
- The pilot testing of this questionnaire with health professionals working in a nearby district hospital.
- A detailed description of the research process will be done.
- All phases of the study will be subject to scrutiny by my supervisor as an external auditor.
- The involvement of a biostatistician all through the study.

## **PILOT STUDY**

The study would be pilot tested using ten health professionals working in Ntunjambili hospital, which is about 50 km away from the study setting. The ten health professionals would be made up of eight nursing staff of different categories, one doctor and one allied health professional.

This was arrived at from the proportion of different health professionals that make up the 173 in the study (target) population .Questionnaires would be administered and information obtained would be analyzed, this would be used to strengthen the validity of the study, problems encountered in this would be corrected in the main study.

## **BIAS AND LIMITATIONS**

Sampling bias would not be an issue due to the fact that all the 173 health professionals working in Umpumulo hospital would be included in the study.

Though all the 173 health professionals working in Umpumulo hospital would be included in the study, selection bias might still be a problem if some health professionals refuse to take part and if these people are different to the ones who do choose to take part, that is, maybe they are the ones who do not know much about VCT and thus they may not want to show it. This would be minimized by making the questionnaire confidential.

Language bias shall be minimized by the use of simple, unambiguous English language, which any health professional working in Umpumulo hospital would be comfortable with.

## **ETHICAL CONSIDERATION**

Participation in the study will be voluntary. The research objectives will be explained to the participants verbally and in writing. A written informed consent will be obtained from the participants. Individuals are free to withdraw from the study at any stage without penalty.

An approval for the study will be obtained from the medical manager of Umpumulo hospital, The Kwa Zulu Natal Department of health and the Medical Research Ethics Committee (MCREC) of the MEDUNSA Campus of the University of Limpopo.

## **BUDGET**

Stationeries	R 1 000.00
Transportation	R 300.00
Biostatistician	R 1 500.00
Miscellaneous	R 700.00
Total	R 3 500.00



The researcher would fund this.

### **TIME FRAME**

Feb	2008	Approval of Protocol
May	2008	Pilot study
Jun	2008	Data Collection
Jun - July	2008	Data Analysis and write Up

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## **APPENDICES**

- Appendix I: Questionnaire
- Appendix 2: CONSENT FORM: The consent form format to be used for this study is from the MREC MEDUNSA Campus of the University of Limpopo.

## APPENDIX 2

### QUESTIONNAIRE

To determine the level of knowledge, to access and understand the attitude and practice of VCT for HIV/AIDS amongst the health worker in Umpumulo Hospital.

**Study ID:**

#### **Introduction:**

Demographic Information: First, I would like to ask you some questions about you,

1. What is your gender?

Male/Female

2. How old were you at your last birthday?

.....years

3. What is your current marital status?

Single

1

Married

2

Widowed

3

Living with someone

4

Divorced/Separated

5

4. What is your job category?

1. Medical Doctor

and Dentist.

2. Nursing Staff.

**Knowledge of VCT for HIV/AIDS**

Now, I would like to know your knowledge about Voluntary Counseling and Testing (VCT) for HIV/AIDS.

Please, tick 'NO' if you disagree with the statement, 'YES' if you agree with the statement, and 'DK' if you don't know the answer to the statement.

If you are undergoing Voluntary Counseling and Testing (VCT) for HIV/AIDS

5. There is pre and post-test counseling.....NO.....YES.....DK

6. It is done in a private session where strict confidentiality is assured.....NO.....YES.....DK

7. Information about HIV Prevention, Infection and transmission are provided to you.....NO.....YES.....DK

8. A 'positive' test result does not necessarily mean AIDS but means infection with the HIV.....NO.....YES.....DK

9. If you test 'negative' you are not encouraged to retest in 3 months time due to the 'window period'.....NO.....YES.....DK

10. If you test 'negative' you can never be infected by the HIV in .....DK

future.....NO.....YES.....

11. A client cannot refuse to go for the test after the counseling.....NO.....YES.....DK

12. The HIV test is done on a sample of the client's blood.....NO.....YES.....DK

13. You are not told when and where to get your test results.....NO.....YES.....DK

14. The result of the test can be discussed with you over the  
telephone.....NO.....YES.....DK

### **Attitudes towards counseling and testing for HIV/AIDS.**

I will now ask you some questions, where you should give your opinion.

On a scale of 1 to 5 please tick whether you:

1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agreed, 5. Strongly Agreed.

15. My friends would treat me badly if I were tested for HIV.....1 2 3 4 5

16. My friends would not treat me any different if I were to be tested for HIV.....1 2 3 4 5

17. I would not get tested for HIV because I would be asked questions

- that are too personal.....1 2 3 4 5
18. I would be embarrassed if my friends found out I had decided to have  
an HIV test.....1 2 3 4 5
19. I am afraid that if I go for test the community will discriminate against  
me if they found out that I am HIV positive.....1 2 3 4 5
20. I do not have time to get an HIV test.....1 2 3 4 5
21. Many people do not want to know their HIV status because if they  
do they will always think about it and it will depress then.....1 2 3 4 5
22. There is no use to go for a test because if you test positive there is no  
cure.....1 2 3 4 5
23. I could easily discuss HIV antibody testing with my family.....1 2 3 4 5
24. I am afraid that if my partner finds out that I am HIV positive he/she will leave  
me.....1 2 3 4 5
25. My partner will think I am cheating if I decide to go for an HIV test.....1 2 3 4 5
26. It is not necessary to go for an HIV test if you know that you are being  
faithful to your partner.....1 2 3 4 5

27. My family would support me if I decided to be tested for HIV.....1 2 3 4 5
28. It would not bother me if someone I know sees me going to get an HIV  
test.....1 2 3 4 5
29. I am afraid that the person I know might test me for HIV and that person may tell  
others.....1 2 3 4 5
30. People would assume I have HIV if I decide to get tested.....1 2 3 4 5
31. I am afraid someone would find out I was tested for HIV.....1 2 3 4 5
32. HIV antibody testing information is kept very confidential by the medical staff who do the  
testing.....1 2 3 4 5
33. I trust the HIV counselors and nurses to keep my information confidential.....1 2 3 4 5
34. HIV antibody testing is not really confidential.....1 2 3 4 5
35. I am concerned that the doctors might say I am positive whereas I'm HIV  
negative.....1 2 3 4 5
36. If I knew that I am HIV positive I will kill myself.....1 2 3 4 5



PRACTICE OF VOLUNTARY COUNSELLING AND TESTING

Qu No.		Codes
37	I don't want to know the result, but have you had an HIV test?	1=Yes 2= No
38	<b>IF NO,</b>  Why not?	1=Never thought about it 2=Don't think I am at risk 3=Fear of stigma/consequences of a positive 4=Don't know where to get it 5=I don't think there is any advantage to getting 6=I am afraid to know 7=Do not like needles 8=Do not trust results are confidential 9=Other
39	<b>IF YES,</b>  Did you voluntarily undergo the HIV test, or  Were you required to have the test?	1=Voluntary counseling and testing 2=Tested because a doctor/nurse suggested 3=Insurance related testing 4=Employer related testing 5=Antenatal testing 6=Testing after needle stick injury 7=Other
40	<b>IF YES,</b>  Please do not tell me the result, but did you find out the results of your test?	1=Yes 2= No
41	<b>IF YES,</b>  When did you have your most recent HIV test?	1=Within the Past Year 2=Between 1 & 2 Years 3= Between 2 & 4 Years

		<p>4=More than Years</p> <p>5=Don't know</p>
42	<p><b>IF YES,</b></p> <p>Where did you go for HIV test?</p>	<p>1=The Clinic that I usually use for minor health</p> <p>2=Clinic in another community in this region</p> <p>3= This hospital</p> <p>4= Clinic or hospital in another region</p> <p>5=Private GP</p> <p>6=Ante Natal Clinic</p> <p>7=At home with a home test kit</p> <p>8=Other</p>

## APPENDIX 3

<b>UNIVERSITY OF LIMPOPO (MEDUNSA Campus) CONSENT FORM</b>
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### **Statement concerning participation in a Research Project.**

Name of Project.

### **THE KNOWLEDGE, ATTITUDE AND PRACTICE OF VOLUNTARY COUNSELLING AND TESTING (VCT) FOR HIV/AIDS AMONGST THE HEALTH PROFESSIONALS IN UMPUMULO HOSPITAL, MAPUMULO, ILEMBE DISTRICT, KWAZULU NATAL PROVINCE.**

I have heard the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I understand that participation in this Project is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I receive from my regular doctor.

I know that this Project has been approved by the Medunsa Research and Ethics (MREC), University of Limpopo (Medusa Campus) / Dr George Mukhari Hospital. I am fully aware that the results of this result of this Project will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Project.

.....

.....

Name of volunteer

Signature of volunteer

.....

.....

.....

Place.

Date

Witness

---

**Statement by the Researcher**

I provided verbal information regarding this Project

I agree to answer any future questions concerning the Project as best as I am able.

I will adhere to the approved protocol.

.....

.....

.....

Name of Researcher

Signature

Date

Place

# UNIVERSITY OF LIMPOPO

Medunsa Campus



## MEDUNSA RESEARCH & ETHICS COMMITTEE

### CLEARANCE CERTIFICATE

P O Medunsa  
Medunsa  
0204  
SOUTH AFRICA

**MEETING:** 04/2008

**PROJECT NUMBER:** MREC/M/70/2008: PG

Tel: 012 - 521 4000  
Fax: 012 - 560 0086

#### PROJECT :

**Title:** The knowledge, attitude and practice of voluntary counseling and testing (VCT) for HIV/AIDS amongst the health professionals in Umpumulo Hospital, Mapumulo, Lembe district, Kwa-Zulu Natal Province

**Researcher:** Dr A.C. Obiajulu  
**Supervisor:** Dr C.C. Clark  
**Hospital Superintendent:** Dr M. Parastsak (Umpumulo Hospital)  
**Department:** Family Medicine & Primary Health Care  
**School:** Medicine  
**Degree:** M Med (Family Medicine)

#### DECISION OF THE COMMITTEE:

MREC approved the project.

**DATE:** May 07, 2008

  
PROF GA OGUNBANJO  
CHAIRPERSON MREC

#### **Note:**

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol. PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.



**HEALTH**  
KwaZulu-Natal

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**Research & Knowledge Management sub-component**

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**Reference : HRKM102/07**

**Enquiries : Mrs G Khumalo**

**Telephone : 033 – 395 3189**

02 June 2008

Dear Dr Obiajulu

**Subject: Approval of a Research Proposal**

1. The research proposal titled **'The Knowledge, Attitude and Practice of Voluntary, Counselling and Testing (VCT) for HIV/AIDS\* amongst the Health Professionals in uMphumulo Hospital, Maphumulo, iLembe District, KwaZulu-Natal'** was reviewed by the KwaZulu-Natal Department of Health. The proposal is hereby **approved** for research to be undertaken at uMphumulo Hospital.
2. You are requested to undertake the following:
  - a. Make the necessary arrangement with identified facilities before commencing with your research project.
  - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to [gugu.khumalo@kznhealth.gov.za](mailto:gugu.khumalo@kznhealth.gov.za)

For any additional information please contact Mrs G Khumalo on 033-3953189.

Yours Sincerely

Dr. S.S.S. Buthelezi

Chairperson: Provincial Health Research Committee

KwaZulu-Natal Department of Health



**HEALTH**

KwaZulu-Natal

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Practice Number: 560 4052

Date: 27/JULY/2007

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TO DR A. C. OBIAJULU  
PRINCIPAL MEDICAL OFFICER  
UMPHUMULO HOSPITAL

DEAR DR OBIAJULU

RE: APPLICATION TO CARRY OUT A RESEARCH STUDY AT UMPHUMULO HOSPITAL

YOUR LETTER DATED 27/JULY/2007 REFERS.

I WENT THROUGH YOUR RESEARCH PROPOSAL WITH THE TITLE: 'THE KNOWLEDGE, ATTITUDE AND PRACTICE OF VOLUNTARY, COUNSELING AND TESTING (VCT) FOR HIV AND AIDS AMONGST THE HEALTH PROFESSIONALS IN UMPHUMULO HOSPITAL'.

I AM MORE THAN HAPPY TO APPROVE AND SUPPORT YOUR APPLICATION TO CARRY OUT THIS RESEARCH STUDY AT UMPHUMULO HOSPITAL, TO COMPLETE YOUR MASTERSHIP IN FAMILY MEDICINE.

IF YOU NEED ANY ASSISTANCE PLEASE DON'T HESITATE TO CONTACT ME.

IT WILL BE APPRECIATED IF YOU USE THE FINDINGS OF YOUR RESEARCH TO MAKE A POSITIVE IMPACT ON QUALITY SERVICE DELIVERY AT OUR INSTITUTION.

YOURS SINCERELY

DR M PARASZTSAK  
MEDICAL MANAGER  
UMPHUMULO HOSPITAL

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uMnyango Wezempilo . Departement van Gesondheid

*Fighting Disease, Fighting Poverty, Giving Hope*

