

**HIV/AIDS: Knowledge, Attitudes and Occupational Risk Perceptions of
Physiotherapists in the Eastern Cape Province, South Africa**

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ABSTRACT

Human Immune-deficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) is a major public health problem. Globally, the number of new HIV infections is decreasing but the total number of people living with the disease is increasing. An estimated 5.7 million South Africans are currently living with the disease. The life expectancy of people living with HIV (PLHIV) in South Africa has slowly increased due to the availability of Anti-Retroviral Therapy (ART). The progressive “chronicity” of HIV may be associated with a variety of impairments and disabilities for people living with HIV. This emphasising the increasingly important role that physiotherapists play to minimize the disabling impact of the disease and improve quality of life for PLHIV.



The aim of study was to determine the HIV/AIDS knowledge, attitudes and the occupational risk perception of physiotherapists practicing in the Eastern Cape Province, South Africa. This study utilized a cross sectional descriptive quantitative survey to collect data. The data was collected via a structured self-administered postal questionnaire. The questionnaires were captured in Microsoft Excel and analysed statistically using CDC Epi-Info version 3.5.1. Data was analysed descriptively and the chi-square test, T-tests and ANOVA was used to identify any statistically significant relationship between variables. The results of the study identified that the physiotherapists in the study have “high” general HIV related knowledge, although major gaps regarding HIV prevention and transmission still exists. The physiotherapists expressed a positive attitude towards PLHIV, while they perceive themselves to be at low risk of HIV transmission risk when managing PLHIV.

The physiotherapists with more than 10 years' experience had significantly better HIV related knowledge compared to those with less than 10 years' experience while the attitudes of married physiotherapists towards PLHIV were significantly less favourable than those who were not married. There is a need for intervention strategies to address the HIV knowledge gaps of physiotherapists. Intervention strategies need to address physiotherapists HIV prevention and transmission knowledge.



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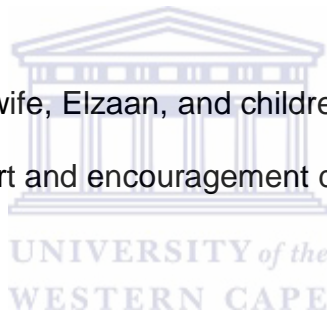
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DECLARATION

I declare that *HIV/AIDS: Knowledge, Attitudes and Occupational Risk Perceptions of Physiotherapists in the Eastern Cape Province, South Africa* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Name: Rudy Angus Cupido

Date: November 2011



Signed:

CONTENTS PAGE

TITLE PAGE	i
ABSTRACT	ii
KEYWORDS	iv
ACKNOWLEDGEMENTS	v
DECLARATION	vi
CONTENT PAGE	vii
CHAPTER 1: ORIENTATION OF THE STUDY	1
1.1 Introduction	1
1.2 Background	1
1.3 The Role of physiotherapists	3
1.4 HIV Knowledge and Attitudes	4
1.5 Problem Statement	5
1.6 Aim of the Study	8
1.7 Objectives of the Study	8
1.8 Summary of Chapter	9
CHAPTER 2: LITERATURE REVIEW	10
2.1 Introduction	10
2.2 Health Workers Knowledge	10
2.3 Physiotherapists Attitudes	15
2.4 Occupational Exposure Risk	17

CHAPTER 3: METHODOLOGY	20
3.1 Introduction	20
3.2 Study Setting	20
3.3 Research Design	21
3.4 The Population	21
3.5 Pilot Study	22
3.6 Data Collection Procedure	22
3.7 Measuring Instrument	23
3.8 Reliability and Validity	24
3.9 Data Analysis	25
3.10 Limitations	25
3.11 Ethical Considerations	26
CHAPTER 4: RESULTS	27
4.1 Introduction	27
4.2 Response Rate	27
4.3 Descriptive Statistics	28
4.3.1 Demographic Information	28
4.3.2 Descriptive Statistic for Scores	28
4.3.2.1 Knowledge	29
4.3.2.2 Attitudes	32
4.3.2.3 Occupational Risk	34
4.4 Comparative Statistics	35
4.4.1 The Relationship between Demographic Information and Scores	35
4.4.2 The Relationship between Area of Work and Scores	37
4.4.3 The Inter-relationship between Scores	38
4.4 Results Summary	38



CHAPTER 5: DISCUSSION	40
5.1 Introduction	40
5.2 Knowledge	40
5.3 Attitudes	43
5.4 Occupational Risk	45
CHAPTER6: CONCLUSION	47
6.1 Introduction	47
6.2 Summary	47
6.3 Conclusion	48
6.4 Recommendations	49
REFERENCES	51
ANNEXURE A: APPROVAL FROM HIGHER DEGREES COMMITTEE	xi
ANNEXURE B: INFORMATION SHEET	xii
ANNEXURE C: CONSENT FORM	xv
ANNEXURE D: QUESTIONNAIRE	xvi



CHAPTER 1

ORIENTATION OF THE STUDY

1.1 INTRODUCTION

This chapter provides the background of the study and offer a general overview of the impact of HIV in South Africa. The role of a physiotherapist in the management of people living with HIV and AIDS and the problem statement are discussed herein.

This chapter also includes the aim and objectives of the study and concludes with a brief overview of the remaining chapters of the study.

1.2 BACKGROUND

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) is a major public health problem globally. Although the global number of new HIV infections has decreased substantially, from 3.1 million in 2002 to 2.7 million in 2010, the total number of people living with the disease is increasing (WHO, 2011). The World Health Organization (2011) estimate that approximately 34 million people are currently living with HIV, of which 66% lives in Sub-Saharan Africa. An estimated 5.6 million South Africans are living with the disease; 3.3 million of these are women. This is the “world’s largest population of people living with... the disease” (Department of Health RSA, 2010:10). At present people living with HIV are expected to live longer lives, similar to people with other chronic diseases (Uphold & Mkanta, 2005; Gale, 2003). This is made possible due to the early detection of the disease and advances in HIV and AIDS treatment (All, Fried, Roberto & Shaw, 1997).

The life expectancy of people living with HIV (PLHIV) in South Africa has slowly increased due to the availability of Anti-Retroviral Therapy (ART) since the inception of the National Department of Health's anti-retroviral programme (Louwagie, Bachmann, Meyer, Booysen, Fairall & Heunis, 2007). Anti-retroviral drugs (ARV's) oppose the effects of HIV on the immune system of PLHIV (Broder, 2009); this results in higher CD4 counts and reduce opportunistic infections like tuberculosis (Badri, Wilson & Wood, 2002) which, in turn, results in the improved overall clinical well-being of PLHIV (Van As, Myezwa, Stewart, Maleka & Musenge, 2009). Thus, the disease pattern of HIV is slowly transforming HIV from an acute to a chronic disease (Potterton & van Aswegen, 2006). The progressive "chronicity" of HIV is associated with a variety of impairments and disabilities for people living with the disease (O'Brien & Brooks, 2006; Solomon & Jung, 2006). This, therefore, has led to a dramatic increase in the number of people living with HIV (PLHIV) who will require the support of health professional support at various stages of the HIV lifecycle, including that of a physiotherapist (Maharaj & Rangiah, 2010; Mukand, 1991; Useh, Akinpelu & Makinde, 2003).

Physiotherapists as major players of the rehabilitation team, play an important role in maintaining and restoring the body function of PLHIV and reducing the disabling impact of HIV on the lives of people living with the disease (O'Brien & Nixon, 2010; Anderson, 2006; Stanton, 1993; Useh, et al., 2003). O'Brien and Brooks (2006) identify that the rehabilitation needs of people living with HIV are increasing in complexity because of the episodic nature of the disease.

PLHIV may experience health related challenges, not solely attributed to the HIV infection but also as a consequence of the secondary effects of Anti-Retroviral Therapy (ARV's) (O'Brien & Brooks, 2006). Therefore, physiotherapy services should be "tailored" to address the unique challenges of individuals living with HIV and AIDS (Uphold & Mkanta, 2005) and facilitate an improved quality of live for people living with HIV (Anderson, 2006).

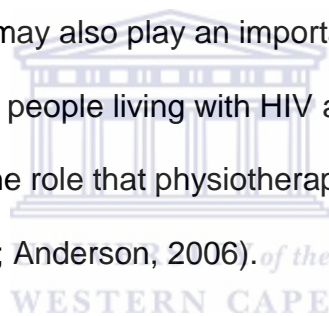
1.3 THE ROLE OF PHYSIOTHERAPISTS

Physiotherapy plays an important role as both a curative, preventative (Mukand, 1991; Frantz, 2005) and palliative discipline (Uwimana & Louw, 2007; Laakso, 2006). Therefore, the profession could be viewed as an integral part of a comprehensive model of care for PLHIV (Mukand, 1991; Franz, 2005). Although HIV/AIDS has been around for decades, people living with HIV/AIDS present a continuous challenge to physiotherapists.



Traditionally, physiotherapists would manage neurological conditions, respiratory diseases, muscular skeletal and pain syndromes in people living with HIV and AIDS (Amuson, Shabodien, Marais & Nicholas, 1997; McClure, 1993; Mukand, 1991; Coates, 1990). However, Anderson (2006) emphasizes that physiotherapists could potentially play an even more important part in the management of PLHIV, by maximizing the quality of life for PLHIV. Physiotherapists will, in future, be required to manage both the symptoms of opportunistic infections and the side effects of anti-retroviral therapy in PLHIV in order to minimize the disabling impact of the disease and improve their quality of life (Myezwa, Stewart, Mbambo & Nesara, 2007; Anderson, 2006; Stanton, 1993).

The prescription of exercise as a means to promote and maintain physiological and psychological function and improve quality of life has been well documented in the literature on this subject (O'Brien & Nixon, 2010; Dudgeon Phillips, Bopp & Hand, 2004). Dudgeon Phillips, Bopp and Hand (2004) reviewed several studies to identify the effects of exercise on PLHIV. The authors conclude that a controlled comprehensive aerobic and progressive resistance exercise programmes promotes muscle strength, endurance, body composition and the psychological well-being of PLHIV. Furthermore, exercise maintains general fitness and strength (Anderson, 2006), improves the CD4 cell count as well as the fatigue, body image and psychological well-being of PLHIV (Dudgeon, Phillips, Bopp & Hand, 2004). Additionally, physiotherapists may also play an important role in eliminating discriminatory views regarding people living with HIV and AIDS and educate other health care professionals on the role that physiotherapists play in managing HIV clients (O'Brien & Nixon, 2010; Anderson, 2006).



1.4 HIV ATTITUDES AND KNOWLEDGE

In view of the potentially important role that physiotherapists can play in the management of PLHIV, it is important that physiotherapists have sound HIV related knowledge and favourable attitude towards PLHIV (Coates, 1990). Connors and Hely (2007) indicate that attitudes towards people with a serious illness, like HIV and AIDS, may be strongly related to the perceived risk of contracting the disease.

Similarly, Sheen and Green (1997) indicate that the perceived risk of HIV transmission and HIV transmission knowledge of physiotherapists are strongly associated with the therapist's attitudes towards PLHIV.

Thus, a major factor that influences physiotherapist's attitudes towards PLHIV is their fear of contracting HIV during clinical practice. However, the HIV transmission risk for physiotherapists is relatively low, providing that standard precautions are correctly applied during clinical practice (Useh et al., 2003). All, Fried, Roberto and Shaw (1997) identify pre-existing stigma, prejudicial views and anxiety as additional factors that contribute to the physiotherapist's attitude towards PLHIV. HIV and AIDS education (Connors & Hely, 2007) together with clinical exposure to PLHIV (Kambole & Struthers, 2009) are major components in strategies designed to prevent negative attitudes towards PLHIV.

Therefore, it is important for physiotherapists to have a clear understanding of the HIV transmission modes; the aetiology of the disease and the standard precautions to be taken when managing PLHIV (Myezwa et al., 2007; Useh et al., 2003). Coates (1990) expressed the need for physiotherapists to gain greater awareness of their role in the management of PLHIV. Thus, physiotherapists need to equip themselves with knowledge on the subject of HIV so as to actively participate in reducing their chances of HIV transmission in the workplace, and to educate and counsel HIV clients whilst providing the appropriate treatment to PLHIV.

1.5 PROBLEM STATEMENT

In the Eastern Cape, PLHIV experience stigmatisation and discrimination. The former premier of the Eastern Cape, Dr Makhenkesi Stofile (2000:2) stated that, “as long as there is continued stigmatisation of people infected with HIV, it would be difficult to control the disease in this province.”

This is evident from the results of a study, conducted by Jackson (2009), which explored the experiences of people living with HIV/AIDS in relation to the comprehensive antiretroviral therapy management received from registered nurses at selected primary healthcare clinics in the Nelson Mandela Bay, Eastern Cape. The study identified that all of those PLHIV who participated in the study experienced some form of discrimination or stigmatization from registered nurses, at primary healthcare clinics, because of their HIV positive status.

In his working environment in the Eastern Cape, the researcher observed an apprehension among physiotherapists towards caring for patients with HIV and AIDS. Although it is a known fact that caring for people with HIV and AIDS entails some form of occupational risk (Davidson & Gillies, 1993). Mendelson and Meintjies (2009) warns that the number of HIV exposures that could potentially lead to HIV transmissions is increasing because of the high HIV prevalence in South-Africa. Similarly, Mosweu, Sebitloane and Moodley (2005) state that the risk of occupational exposure to HIV depends on the HIV prevalence amongst the population. The fear of contracting HIV may lead to a display of negative attitudes and unprofessional behaviour by physiotherapists towards clients with HIV and AIDS (Sim & Purtilo, 1991). These negative attitudes and unprofessional behaviours may impede on the quality of care that PLHIV receive from physiotherapists.

Furthermore, negative attitudes may be fuelled by insufficient knowledge of the modes of HIV transmission and standard precautions to be taken when managing clients with HIV and AIDS (Useh et al., 2003).

As recently as one year ago, authors were still emphasising the need for physiotherapists to understand the aetiology of HIV in order to effectively manage PLHIV (Oyeyemi, et al., 2010; Myezwa, et al., 2007). Several studies have been conducted to explore the HIV related knowledge and attitudes that physiotherapy students and community service physiotherapists hold towards PLHIV (Mangrey, Naidoo, Naidoo & Puckree, 2010; Puckree, Chetty, Govender & Ramparsad & Lin, 2004; Balogun, Kaplan & Miller, 1998; Amuson et al., 1997).

Puckree et al. (2004) carried out one such study to explore the HIV knowledge of South African physiotherapy students. The author found that those students presented with high levels of HIV related knowledge although HIV “knowledge gaps” still exists. No association between HIV related knowledge and the attitudes of students towards PLHIV were found. The HIV knowledge, attitudes and occupational risk perception of qualified physiotherapists in the South African context has not been fully explored. In view of the relatively high prevalence of PLHIV in South Africa and the increasingly important role that physiotherapists play in managing PLHIV, is it of paramount importance that Eastern Cape physiotherapists have gain sound knowledge of HIV and AIDS, a non-judgemental attitude and realistic occupational risk perceptions when managing HIV clients.

Thus it is evident that in the past decade several studies have reported on health professional's knowledge regarding HIV/AIDS and it would therefore be ideal to explore the physiotherapist's knowledge of HIV transmission and prevention, as well as their attitudes towards people infected with HIV and their perceptions of occupational risk in caring for PLHIV a decade later.

1.6 AIM OF THE STUDY

The aim of the study is to determine the HIV/AIDS knowledge, attitudes and the occupational risk perceptions of physiotherapists practicing within the Eastern Cape.

1.7 OBJECTIVES OF THE STUDY

The following were the objectives of the study:

- To determine the knowledge of physiotherapists in the Eastern Cape regarding HIV and AIDS transmission.
- To determine the attitudes of physiotherapists towards people with HIV/AIDS who requires physiotherapy intervention.
- To determine whether the physiotherapists perceive themselves to be at risk of HIV transmission while providing a physiotherapy service to HIV/AIDS clients.
- To determine whether the physiotherapist's knowledge of HIV transmission and prevention is associated with their attitudes towards patients with HIV/AIDS or their occupational risk perception.
- To determine whether there is a relationship between therapists' demographic information and their HIV/AIDS knowledge, attitudes and occupational risk perceptions.

- To compare the HIV/AIDS knowledge, attitudes and perceived occupational risk of therapists working in the public sector versus those working in private practice

1.8 SUMMARY OF CHAPTERS

In chapter two, the literature review highlights the important issues to be explored. This includes the physiotherapist's knowledge of HIV transmission and prevention. The attitudes of physiotherapists towards people with HIV/AIDS and the factors that influence physiotherapists' occupational risk, due to HIV, will be explored in this chapter.

Chapter three offers a discussion of the main methodology of the study; this includes the study setting, design, population, data collection procedure and data analysis. The ethical considerations and study limitations will also be discussed. In Chapter four the results of the study are presented with the main focus on addressing the objectives of the study. Descriptive statistics are presented with percentages and means, while the analysis of variance (ANOVA), t-tests and chi-square tests were used to identify associations. In chapter five, the study draws to a close with a conclusion, discussion of the results and further recommendations.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, relevant literature on physiotherapists' HIV knowledge and attitudes towards people with HIV and AIDS will be explored. Finally, the literature will identify factors that may impact on the occupational risk perception of physiotherapists due to HIV and AIDS

2.2 HEALTH WORKERS KNOWLEDGE

Although HIV/AIDS has been around for decades, it is becoming increasingly difficult to ignore the challenge that PLHIV present to physiotherapists and other health workers. Adequate HIV and AIDS knowledge, on the part of health care worker is an important means towards reducing reduce anxiety about the disease and could result in better health care for PLHIV (Ahmed, Hassali & Aziz 2009; Dijkstra, Kangawaza, Martens, Boer & Rasker, 2007; All & Fried 1996). Additionally, a comprehensive HIV/AIDS knowledge would allow physiotherapists and other health care workers to be a credible source of HIV/AIDS information and, thus, prevent the transmission of HIV during clinical practice (Sim & Putrilo, 1991; Coates, 1990). Thus, health care workers could also play an important role as agents for health promotion within health care facilities and the wider community (Pirie & Coetzee, 2006). Therefore, it is important that health workers, especially physiotherapists have a clear understanding of the modes of HIV transmission and the precautions to be taken during clinical practice (Useh et al., 2003). Myezwa et al (2007) emphasize the importance of the physiotherapist to understanding the aetiology of HIV in order to effectively manage people living with HIV/AIDS.

Additionally, physiotherapists need to fully understand their role in managing clients with HIV and AIDS and the associated opportunistic infections (Coates, 1990).

Dijkstra et al. (2007) investigated the HIV knowledge of medical staff in a South African state hospital. A stratified sample of 100 staff members were selected from 3008 employees according to different categories of staff employed at the facility. Participants included doctors, nurses and clinical support staff, including a physiotherapist. A self-administered questionnaire was used to gather information of the participant's actual and perceived knowledge of HIV/AIDS. The researchers found that more than 26% of the participants had incomplete basic HIV/AIDS knowledge. These participants were unable to correctly identify the routes of HIV infection and describe the meaning of the abbreviation "AIDS". This finding strongly correlates with similar studies done in other countries, and clearly illustrates that a lack of basic HIV knowledge among health workers is not only an issue in South Africa but also in countries, like Nigeria, England and China (Hesse, 2006; Juan, Siebers, Wu, Chang & Chao, 2004; Anderson, 2003; Davidson & Gillies, 1993)

The HIV related knowledge of physiotherapy students in broader Africa and South Africa has been fully explored. Puckree, et al. (2004) studied the knowledge and attitudes of 209 final year physiotherapy students, from eight different South African Universities, towards people with HIV/AIDS. The researchers explored the student's knowledge on the mode of HIV transmission and the precautions to be taken during clinical practice. Seventy-percent of the students could identify three of the five modes of transmission but only 45% of the students could identify the sharing hypodermic needles as a potential source of infection (Puckree, et al., 2004).

The authors conclude that the majority of the final year students had good HIV related knowledge but felt ill equipped to cope with HIV/AIDS patients.

The formal lectures the students received significantly affected their HIV related knowledge but had little to no effect on their attitudes towards PLHIVA. Previous studies that explored the HIV knowledge of physiotherapy students produced similar results indicating; these indicate that physiotherapy students have a fairly high HIV knowledge although knowledge gaps, such as the inability to identify the exact modes of HIV transmission or the immunopathology of HIV/AIDS, were found to exist (Johnson & Sim, 1998; Amuson, et al., 1997).

Oyeyemi et al (2010) recently studied the knowledge and affective traits of third and fourth year Nigerian physiotherapy students, to provide care for patients living with AIDS. Contrary to the South African students in the study conducted by Puckree, et al., (2004) the authors found that Nigerian students had “unsatisfactory” knowledge related to standard precautions and HIV and AIDS pathophysiology. Similarly to their South African counterparts in the study conducted by Puckree et al. (2004) the Nigerian students indicated that they were uncomfortable and ill prepared to manage patients with HIV and AIDS (Oyeyemi et al., 2010). One can conclude, from the literature, that although physiotherapy students have HIV and AIDS knowledge learning opportunities, students still present with HIV related knowledge gaps, which might influence their attitudes (Puckree, et al., 2004) and willingness (Oyeyemi et al., 2010) towards managing living with HIV and AIDS.

Useh et al. (2003) completed comparative survey of the HIV knowledge and role of physiotherapists in Zimbabwe and Nigeria. The researchers discovered the participant's general HIV/AIDS knowledge and knowledge on the modes of HIV transmission were relatively poor. The respondents from Zimbabwe presented with a higher average of 75% correct answers compared to the 57% for the participants from Nigeria.

Interestingly, the authors identified the lack of previous clinical exposure to HIV/AIDS patients and the fact that the majority of Nigerian physiotherapists worked in state or provincial hospitals while their Zimbabwean counterparts work, predominantly in private hospitals as factors that might have influenced the lower average scores of the Nigerian participants. The researchers suggest that the HIV clients in these countries might prefer being managed in private institutions because of the privacy, efficiency and availability of medication at these facilities. The South African situation is different because physiotherapists in the public sector manage more PLHIV than their private counterparts. The level of HIV/AIDS knowledge strongly correlates with the source of HIV information; formal lectures received and the previous management of HIV/AIDS patients (Deetlefs, Greef, & Koen, 2003).

A comprehensive knowledge of HIV/AIDS would allow physiotherapists and other health care workers to become a credible source of HIV/AIDS information; manage patients better and prevent the transmission of HIV during clinical practice (Coates, 1990; Sim & Putrilo, 1991). Thus, health care workers could play an important role as agents for health promotion within health care facilities and the wider community (Pirie & Coetzee, 2006).

Contrary to Amuson, et al. (1997); Johnson & Sim (1998) and Oyeyemi et al. (2010) indicate that the Nigerian physiotherapy students who participated in the study to assess HIV transmission, universal precautions and pathophysiology knowledge had unsatisfactory knowledge levels in all three categories. Interestingly, the authors identified the lack of previous clinical exposure to HIV/AIDS patients and the fact that the majority of the Nigerian physiotherapists worked in state or provincial hospitals as factors that influenced the lower average scores of the Nigerian participants. At present, no such comparison has been conducted within the South African context.

The level of HIV/AIDS knowledge strongly correlates with the source of HIV information; formal lectures received and the previous management of HIV/AIDS patients (Deetlefs, et al., 2003). The author concludes that the lack of HIV transmission knowledge could be costly to therapists because of the HIV transmission risk that these therapists face during clinical practise (Puckree, Kasiram, Moodley, Sing & Lin, 2002). It is evident, from the studies conducted more than 5 years ago, that there were still gaps identified in both the knowledge of physiotherapy students and qualified physiotherapists in Africa and South Africa.

From the literature one can conclude, that, after several decades of the existence of HIV and AIDS, physiotherapists have repeatedly reported knowledge deficits regarding HIV/AIDS transmission modes, the pathophysiology and the aetiology of the disease. Taking into account the dynamic nature of the disease and the important role that physiotherapists play in the management of PLHIVA it is important that physiotherapists to be knowledgeable about HIV/AIDS.

2.3 ATTITUDE OF PHYSIOTHERAPISTS

People with HIV/AIDS have reported experiencing a negative attitudes directed at them from both the public and private health professionals (Andrewin, 2008; Ndinda et al., 2007; Schuster, Collins, Cunningham, Morton, Zierler, Wong, Tu & Kanouse, 2005). Physiotherapists and other health care workers, as members of a community, may share some of these negative attitudes (Kambole & Struthers, 2009). Kambole & Struthers (2009) explored this subject and found that some physiotherapists still present with negative judgements towards PLHIV although clear ethical guidelines exist for physiotherapists. Over the past decade, various authors have highlighted that HIV/ AIDS knowledge influences the attitudes of health workers towards PLHIV (Kambole & Struthers, 2009; Deetlefs et al., 2003; Puckree et al., 2002).

The South African Society of Physiotherapy (SASP), in conjunction with the Health Professions Council of South Africa (HPCSA), has set out clear professional and ethical guidelines on the manner in which to care for HIV/AIDS patients.

SASP states that:

At all times a physiotherapist shall help all those who seek his/her professional service, without discrimination, fear or favour. Physiotherapist is morally obliged to help... regardless of age, gender, race, condition, creed, politics, financial or social status South African Society of Physiotherapy, 2008).

However, Sim and Purtilo (1991) argues that negative judgements may be due to the fact that the physiotherapist perceives of the patient's condition as incompatible with the therapists own interests or expertise or as the effects of a negative lifestyle.

The authors warn that HIV/AIDS patients may fit into all of the above mentioned groups and that the therapist may apply “covert refusal to treatment” which includes strategies such as avoidance, inferior treatment or premature discharge.

Physiotherapists have even expressed their willingness not to treat an HIV client if either they or the client or presents with open lesions (Puckree, et al., 2002).

Similarly, a qualitative study conducted by Deetlefs et al. (2003) to explore the attitudes of South African nurses in the North West Province, towards HIV/AIDS patients, concluded that nurses had, for the most part, negative attitudes towards these patients. The authors indicate that these negative attitudes may be due to a lack of knowledge or the lack of internalisation of knowledge. These nurses developed coping mechanisms to deal with their discomfort, which hampered the development of a therapeutic relationship between HIV/AIDS patients and nurses. These findings correlate strongly with the views expressed by Sim and Putrilo (1991). In contrast to the attitudes of nurses, literature has indicated that physiotherapy students in South Africa have expressed largely positive attitudes towards people living with HIV/AIDS (Puckree, et al., 2004; Amosun, et al., 1997). A comparative study of HIV/AIDS knowledge and attitudes of physiotherapy and occupational therapy students at a University in the United Kingdom produced similar outcomes (Johnson & Sim, 1998). Interestingly, Puckree et al. (2004) found that formal lectures and previous clinical exposure to HIV/AIDS patients did not necessarily result in participants expressing positive attitudes. Eighty nine percent of the participants in this study indicated that improved knowledge and supervised clinical exposure would improve their attitudes towards HIV/AIDS patients.

This finding is similar to that of Johnson and Sim (1998) who suggest that a negative relationship between HIV knowledge and attitudes exists, thus as knowledge increases the attitudes become more positive. Additionally, Sheen and Green (1997) identified the therapist's age, gender and the HIV prevalence in the area of practise as factors that may impact on the attitude of physiotherapist's. Therefore, we can conclude that no straightforward relationship between the possession of information, attitude about an issue and behaviour exists (All, et al, 1997). However knowledge on HIV/AIDS may aid in cultivating a positive attitude towards people with HIV/AIDS (Amuson, et al., 1997; Dike, 1993).

2.4 OCCUPATIONAL EXPOSURE RISK

The negative attitudes and reluctance towards managing people with HIV may be strongly associated with a lack of HIV transmission knowledge and the perceived risk of HIV transmission due to occupational exposure (Aboulafia, 1998; All et al., 1997; Sheen & Green, 1997). Gerberding (2003) studied the occupational exposure to HIV in health care settings in the United States of America. The author states that although occupational transmission of HIV has been reported in most countries, no true global surveillance data is available to determine the true extent of this problem. The risk of occupational HIV transmission is no different from that of any other blood-borne diseases, such as Hepatitis B. HIV exposure in the workplace is caused by percutaneous transmission, which includes accidental needle stick injuries, accidental contact with sharp instruments contaminated with blood or body fluids and the exposure of broken skin or mucous membrane to contaminated blood or body fluids (Mondiwa & Huack, 2007).

It has been indicated that the HIV transmission risk for physiotherapists during clinical practice is very low, provided that the correct universal precautions are applied (Sim & Purtilo, 1991; Mercier & Haig, 1993).

Mercier & Haig (1993) states that:

Universal precautions are essential not only to protect health care workers from transmission...but it also preserves the confidentiality of HIV positive patients.

Dike (1993) specifically studied physiotherapists risk perception of HIV transmission in clinical practise at a large teaching hospital in the United Kingdom. The convenient sample of 30 physiotherapists answered seven questions relating to their perceived risk. Interestingly, the majority of the participants indicated that they felt confident treating HIV positive patients and perceived themselves to be at a low risk of contraction. Conversely, Sim & Putrilo (1991); Gerberding (2003) and Useh, et al. (2003) indicate that health care workers experience some form of risk perception while managing HIV positive patients. Mandiwa and Hauck (2007) also investigated the occupational risk for HIV infection among Malawian midwives. These participants indicated a high perceived occupational risk to HIV transmission and displayed a reluctance towards touch patients. Again, this high-risk perception impacted on the quality of care their patients received. Similarly, Jovic-Vrance, Janyovic, Vukovic, Vranes and Miljus (2006) explored the HIV risk perception of Serbian health care workers including physiotherapists. This cross-sectional survey of 1559 health care workers concluded that 89% of the participants believed that they have a high professional risk of acquiring HIV infection.

Generally, all health care workers are at risk of HIV infection when attending to people living with HIV/AIDS. The literature is clear that the HIV transmission risk should be very low for physiotherapists if the correct universal precautions are being applied. The lack of HIV related knowledge influences the physiotherapist's perception of occupational HIV transmission and attitudes towards PLHIV.



CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the method that was used to conduct the study. It provides a brief description of the study setting, followed by the aim and objectives of the study. The pilot study is described, followed by the study design, a description of the population and data collection procedure and analysis.

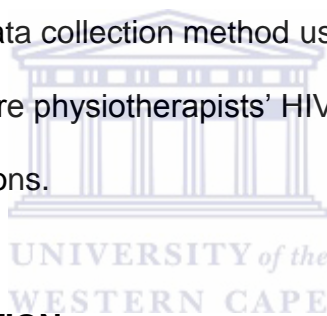
3.2 STUDY SETTING

The study was conducted in the Eastern Cape. The decision was to conduct the study in this region was based on convenience because the researcher resides in the province. The Eastern Cape is the second largest province in the country. It covers 170 000 km squared, which represents 14% of the countries land mass and has a population of 6.7 million (Nelson Mandela Bay Municipality Annual Report, 2008). The area is predominantly rural. HIV/AIDS was the number one cause of mortality for both adults and children during the period from 2000 to 2006 (Eastern Cape Department of Health, 2008). The HIV prevalence in the province is currently estimated at approximately 27.6%, with 1 out of every 5 adults living with the disease (Department of Health, 2010). In 2008, only 233 physiotherapists were registered with the HPCSA in the Eastern Cape, of which only 65 worked in the public sector, compared to the Gauteng Province which boasts 2011 physiotherapists, of which 179 practice predominantly in the public sector (Health Systems Trust, 2008). In 2008, the Eastern Cape had a ratio of one physiotherapist for every 100 000 people compared to the Northern Cape which had 5 physiotherapists for every 10 000 people.

The Eastern Cape with one physiotherapist for every 100 000 people is the highest, physiotherapist to patient, ratio in the country (Health Systems Trust, 2008). These therapists are based mainly in and around the two main urban municipalities, namely, Nelson Mandela Metropolitan Municipality and the Buffalo City Municipality, which includes cities like Port Elizabeth and East London respectively. Seventy per cent of the physiotherapists, registered with the HPCSA, have a postal code within the boundaries of these two municipalities.

3.3 RESEARCH DESIGN

This study utilized a descriptive quantitative design. A cross sectional descriptive survey was preferred as the data collection method used to investigate the independent variables which are physiotherapists' HIV related knowledge, attitudes and occupational risk perceptions.



3.4 THE STUDY POPULATION

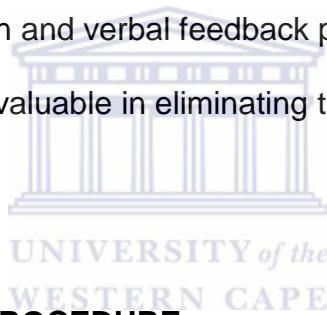
The population comprised all the physiotherapists, registered with the Health Professions Council of South Africa (HPCSA) for the 2009/2010 registration year (1st April 2009 and 31st March 2010), with a residential or postal address in the Eastern Cape. All 252 physiotherapists registered with the Health Professions Council of South Africa, with an address in the Eastern Cape were included. Physiotherapy assistants and community service physiotherapists were excluded from the study.

3.5 PILOT STUDY

A pilot study was conducted among 5 physiotherapists practicing in the Cape Winelands District Municipality in the Western Cape Province.

The aim of the pilot study was to identify any potential limitations of the questionnaire; it also tested the user friendliness and clarity of the questionnaire.

Secondly, the pilot study sought to improve the face validity of the questionnaire and determine the time required for it to be completed (De Vos, Strydom, Fouche & Delpont, 2002). The physiotherapists were instructed not merely to answer the question, but were asked to make notes and minor alterations where they deemed necessary. Minor grammar and spelling alteration were made to the questionnaire after the pilot study. The written and verbal feedback provided by the pilot study physiotherapists proved to be valuable in eliminating the ambiguity of some of the questions.



3.6 DATA COLLECTION PROCEDURE

The researcher obtained a list of all registered physiotherapists who had a postal or residential address in the Eastern Cape, from the HPCSA 2009/2010 register (HPCSA, 2009). A structured questionnaire (Appendix D) was posted to the physiotherapy participants. This questionnaire was accompanied by a participant information sheet (Appendix B) and a consent form (Appendix C) which assure participants of their anonymity and the confidentiality of the study. A stamped self-addressed envelope was included, for participants to return the completed or non-completed questionnaires to the researcher.

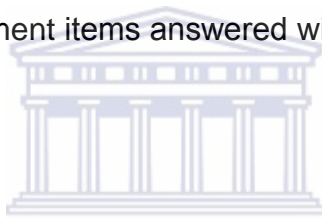
Questionnaires were coded for the purpose of following up with non-respondents, but the data was analysed by maintaining the participants anonymity. A follow up letter was posted one month after the initial questionnaire, as a reminder to return any outstanding questionnaires.

3.7 MEASURING INSTRUMENT

The data was obtained via a self-administered, structured questionnaire with close-ended questions. The questionnaire was developed utilizing data available from previously published research questionnaires (Oyeyemi, Oyeyemi & Bello, 2006; Useh et al., 2003; Carey, Morrison – Beedy & Johnson, 1997; Sheen & Green, 1997; Dike, 1993). The questionnaire comprised of four categories, namely, demographic information, HIV/AIDS knowledge, attitudes towards HIV/AIDS people and occupational risk perceptions of the participants.

The demographic information included the participants age, sex, area of work, and years of experience. Two statements from the original 45 statements of the HIV knowledge questionnaire (HIV-KQ-45) have been removed because terms like “douching” caused confusion with the pilot population. The HIV-KQ-45 was originally developed to test the basic HIV related knowledge of the “less well-educated, economically disadvantaged” communities (Carey et al., 1997). The level of knowledge was classified according to good, adequate and poor knowledge. A score of ≥ 75 was classified as “Good”, from 50 to 75 classified as “Adequate”, and a score of < 50 was classified as “Poor”. The HIV attitude assessment includes fifty-four - items, which was rated on a 5-point Likert scale, ranging from “Strongly Agree” to “Strongly Disagree”.

The HIV attitude assessment includes fifty-four -items, which was rated on a 5-point Likert scale, ranging from “Strongly Agree” to “Strongly Disagree”. The questionnaire included both positive and negative statements. The statements were coded so that the most positive response scored 5. A Scores of 4 and 5 (Agree and Strongly agree) to positive questions were graded as a “Positive” response, while scores of 1 and 2 (Strongly disagree and Disagree) were graded as “negative” responses and a score of 3 were scored as “neutral”. Thus, the higher the overall response score, the more positive the “Attitudes” of the respondents. In some of the attitude statements, the researcher changed “united Kingdom” to “South Africa” to make the questionnaire applicable to the South African context. The risk perception assessment includes 11 statement items answered with a “Yes” or “No” or “Don’t know”.



3.8 RELIABILITY AND VALIDITY

The research questionnaire utilized in this study is a combination of previously published questionnaires which are well-documented for their validity and reliability. The knowledge section (B) has been adopted from Carey, et al. (1997), and was originally developed to test the basic HIV related knowledge of “less well-educated economically disadvantaged” communities in the United Kingdom. The attitude section (C) has been adopted from Sheen and Green (1997). Both questionnaires present with a high degree of internal consistency an alpha of 0.91 (Carey, et al., 1997) and 0.96 (Sheen & Green, 1997) respectively and have been validated by expert panels.

The questions used in the occupational risk perception section (D), have been taken from similar studies that have been previously conducted (Oyeyemi, Oyeyemi & Bello, 2006; Useh et al., 2003; Dike, 1993). No tests have been done to test the reliability of the questionnaire for section D.

3.9 DATA ANALYSIS

The questionnaires were captured in a Microsoft Excel spread sheet and analysed statistically using CDC Epi-Info version 3.5.1. The data was analysed descriptively by employing frequency distributions, central tendencies (means) and standard deviations. For ease of interpretation and comparison, the researcher standardized scores for each of the different sections to a score of 100. The chi-square tests, Pearson's Correlation, T-test and Analysis of Variance were used to identify any statistically significant relationship between variables. The statistically significant level for the rejection of the null hypothesis was set at 5% ($p < 0.05$) for this study (Beaglehole, Bonita & Kjellsrtom, 1993).

3.10 LIMITATIONS

The major limitation of this study was the low response rate (30%). The study excluded those physiotherapists working in the Eastern Cape, who do not have a postal or residential address with the HPCSA in the province. The study could have included all the physiotherapists currently practicing in the Eastern Cape irrespective of their HPCSA registration address; this could have contributed to a better response rate. A better response rate could have provided greater insight into the population and could thus have allowed for the broader generalization of the results of the study.

The lack of male participants in the study limited the statistical comparison between gender groups. A social desirability bias may influence the attitude section of this study. Katzenellenbogen, Joubert and Kariem (1997) describe desirability bias as the phenomenon whereby, “participants respond to particular questions with the answer that they consider most socially desirable, rather than answer with complete honesty”. The study utilized a questionnaire for the data gathering purposes, thus the information gathering process was limited to the scope of the questionnaire.

3.11 ETHICAL CONSIDERATIONS

Ethical issues were upheld during all aspects of this project. The Senate research committee of the University of the Western Cape approved the methodology of this study before the pilot study or research project commenced (Appendix A)

The participant information letter clearly indicates that participation in the study is voluntary, with no financial benefits to the participants. The participants had the right to withdraw at any stage during the study, without fear of victimization.

Each participant was asked to sign a letter of consent before completing the questionnaire. If they opt not to participate they are encouraged to return the questionnaire to the researcher. The survey was anonymous and participants were assured of the confidentiality of their responses and their anonymity. Participants were not asked to disclose their HIV status at any stage during the study.

Once the completed questionnaire and consent form was received, it was locked away in a filing cabinet that only the researcher had access to and processed data was stored in password protected computer files.

CHAPTER 4

RESULTS

4.1 INTRODUCTION

In this chapter the research findings of the data analysis will be presented with the main focus on addressing the objectives of the study. This chapter presents the findings in 3 major parts. Firstly, the descriptive data on the participant demographic characteristics and knowledge, attitudes and occupational risk scores will be presented. Secondly, the analytical statistical data for the relationship between the socio-demographic variables and the scores for knowledge attitudes and occupational risk will be presented. Finally, data on the inter-relationship between HIV knowledge, attitudes and perceived occupational risk scores will be presented.

4.2 RESPONSE RATE

A total of 251 postal questionnaires were distributed to physiotherapists registered with the HPCSA, with a postal or residential address in the Eastern Cape. Only 74 questionnaires were returned only 64 of these were usable. Thus, an overall response rate of 30% was achieved. Four of the participants excluded themselves from the study because they were older than 60 years, the last category of the “age” variable. All four maintained their HPCSA registration while, only two were still actively working as physiotherapists. The other five participant’s family members returned the questionnaires but indicated that the physiotherapists are working in a different country.

4.3 DESCRIPTIVE STATISTICS

4.3.1 Demographic Information

The demographic profile of the participants in the study is presented in Table 1.

Physiotherapy as a profession has to a large extent been female dominated profession, this reflected in the current study (91%). The majority of the participants (33%) were aged between twenty and thirty years, with a large proportion of the participants married (61%) and more than half of them having more than 10 years' experience (58%). There was an equal distribution of participants in the public and private sectors.

Table 1: Demographic Characteristics of the Participants (n = 64)

Variable		N	%
Gender	Male	6	9%
	Female	58	91%
Age	20-30	21	33%
	31-40	14	22%
	41-50	9	14%
	51-60	20	31%
	Total	64	100%
Marital Status	Single	21	33%
	Married	39	61%
	Divorced	3	5%
	Widowed	1	2%
Work Experience	<5	14	22%
	5-10	13	20%
	10+	37	58%
Area of Work	Public	32	50%
	Private	32	50%

4.3.2 Descriptive Statistics for HIV knowledge, Attitude and Occupational Risk scores

Table 2: Descriptive Statistics: Knowledge, Attitudes and Occupational Risk (n = 64)

	Mean	S.D.	Min	25th Centile	Median	75th Centile	Max
Knowledge	86.16	7.32	65.12	81.40	88.37	91.28	100.00
Attitudes	76.66	9.23	52.78	69.33	77.31	84.84	91.20
Occupational Risk	35.94	21.25	0.00	16.67	33.33	50.00	83.33

Table 2 provides an overview of the Knowledge Attitude and Occupational risk scores on a standardized scale of 0-100. The scores ranged from 65.1 to 100 for Knowledge; 52.8 to 91.2 for Attitudes and 0 to 83.3 for the Occupational risk scores.

4.3.2.1 Knowledge

The mean HIV knowledge score for the participants (n=64) in the study was classified as “Good” (M = 86.2; SD = 7.32). The knowledge scores ranged from 81.4 to 91.3 out of a possible score of 100. The descriptive statistics for knowledge are presented in Table 2, above. Of all the participants, 42% did not know that a person can get HIV from having oral sex with a woman or from a woman’s vaginal secretions (31%). Furthermore, some of the participants’ believe that a person can get HIV through contact with saliva, tears, sweat and urine (31%) and from deep kissing (putting your tongue in your partners mouth) a person living with HIV (25%).

30% of the physiotherapists believe that a person can get HIV from swimming in a swimming pool with a person who has HIV. Physiotherapists believe that HIV can be spread by coughing and sneezing (25%) and that mosquitoes can spread the disease (Table 3).

Table 3: Proportion of correct and incorrect Transmission Knowledge scores

(n = 64)

	Correct		Incorrect	
B03 - A person can get AIDS from a toilet seat	64	100%	0	0%
B07 - A person gets HIV by sharing a glass of water with someone who has HIV	64	100%	0	0%
B43 - Athletes who share needles when using steroids can get HIV from needles	63	98%	1	2%
B10 - A pregnant woman with HIV can give the virus to her unborn baby	61	95%	3	5%
B23 - A person can get HIV even if she or he has sex with another person only one time	61	95%	3	5%
B12 - A woman can get HIV if she has vaginal sex with a man who has HIV	60	94%	4	6%
B11 - Pulling out the penis before a man climaxes keeps the woman from getting HIV during sex	57	89%	7	11%
B15 - All pregnant woman infected with HIV will have babies born with AIDS	56	88%	8	12%
B33 - Having sex with more than one partner can increase a person's chances of being infected with HIV	55	86%	9	14%
B22 - A person can get HIV by having oral sex, mouth to penis, with a man who has HIV	54	84%	10	16%
B27 - A person can get HIV by giving blood	53	83%	11	17%
B05 - HIV can be spread by mosquitoes	52	81%	12	19%
B38 - A person can get HIV if having oral sex, mouth on vagina, with a woman	51	80%	13	20%
B04 - Coughing and sneezing do not spread HIV/AIDS	48	75%	16	25%
B09 - It is possible to get HIV when a person gets a tattoo	48	75%	16	25%
B26 - People are likely to get HIV by deep kissing, putting their tongue in their partners mouth, if their partner has HIV	48	75%	16	25%
B28 - A woman can get HIV if she has sex during her period	46	72%	18	28%
B35 - A person can get HIV by sitting in a tub or a swimming pool with a person who has HIV	45	70%	19	30%
B36 - A person can get HIV through contact with saliva, tears, sweat, or urine	44	69%	20	31%
B37 - A person can get HIV from a woman's vaginal secretions	37	58%	27	42%

Table 4: Proportion of correct and incorrect Prevention and General HIV

Knowledge scores (n = 64)

	Correct		Incorrect	
B13 - Showering or washing ones genitals after sex keeps the person from getting HIV	64	100%	0	0%
B16 - Using a latex condom correctly can lower a person's chance of getting HIV	64	100%	0	0%
B17 - A person with HIV can look and feel healthy	64	100%	0	0%
B31 - A natural skin condom works better against HIV than a latex condom	64	100%	0	0%
B41 - Washing drug-use equipment with cold water kills HIV	63	98%	1	2%
B02 - There is a cure for AIDS	62	97%	2	3%
B14 - Eating healthy food can keep a person from getting HIV	62	97%	2	3%
B32 - A person will not get HIV if she or he is taking antibiotics	62	97%	2	3%
B40 - Using Vaseline or baby oil with condoms lowers the chances of getting HIV	62	97%	2	3%
B18 - People who have been infected with HIV quickly show serious signs of being infected	61	95%	3	5%
B34 - Taking a test for HIV 1 week after having sex will indicate to a persons if he or she has HIV	61	95%	3	5%
B29 - You can usually tell if someone has HIV by looking at them	60	94%	5	6%
B39 - If a person tests positive for HIV, then the test site will have to tell his or her partner	59	92%	6	8%
B01 - HIV and AIDS are the same thing	58	91%	6	9%
B06 - AIDS is caused by HIV	58	91%	6	9%
B19 - There is a vaccine that can stop adults from getting HIV	58	91%	6	9%
B20 - Some drugs have been made for the treatment of AIDS	58	91%	6	9%
B25 - A negative HIV test does not mean that the individual is free from HIV infection	56	88%	8	12%
B30 - There is a female condom that can help decrease a woman's chances of getting HIV	51	80%	13	20%
B21 - Women are always tested during their pap smear	46	72%	18	28%
B24 - Using lambskin or rubber condoms are the best protection against HIV	40	63%	24	37%
B08 - HIV is killed by bleach	10	16%	54	84%

The majority (84%) of the participants did not know that HIV can be destroyed by bleach. In addition, 20% of the participants did not know that female condoms are available for women. 9% of the participants believe that there is a vaccine that can stop adults from getting AIDS, while some did not know that some drugs are available to treat HIV and AIDS (Table 4).

4.3.2.2 Attitudes

The participants in the study express an overall "positive" attitude towards people living with the disease with an overall mean score of 4.07 (SD=0.86). The participants expressed 79% positive scores, 10% neutral scores and 11% negative scores. Only six items (n=54) presented with a mean score of less than 3, indicating of a negative response.

Table 4: Proportion of Negative, Neutral and Positive Attitudes Scores

(n = 64)

Question	Mean	SD	Negative		Neutral		Positive	
C33	4.7	0.58	1	2%	1	2%	62	97%
C05	4.69	0.64	1	2%	0	0%	63	98%
C16	4.69	0.5	0	0%	1	2%	63	98%
C04	4.67	0.78	2	3%	0	0%	62	97%
C47	4.66	0.57	1	2%	0	0%	63	99%
C10	4.59	0.73	2	4%	0	0%	62	97%
C13	4.59	0.68	1	2%	1	2%	62	97%
C24	4.59	0.66	2	3%	0	0%	62	97%
C12	4.59	0.66	1	2%	0	0%	63	98%
C25	4.55	0.83	3	5%	2	3%	59	92%
C19	4.52	0.67	1	2%	3	5%	60	93%
C53	4.52	0.67	1	2%	0	0%	63	98%
C08	4.5	0.87	2	3%	4	6%	58	91%
C02	4.5	0.85	2	3%	3	5%	59	92%
C39	4.5	0.69	1	2%	1	2%	62	97%
C28	4.47	0.69	1	2%	1	2%	62	97%
C06	4.47	0.56	0	0%	2	3%	62	97%
C23	4.45	0.82	2	3%	7	11%	55	86%
C17	4.45	0.82	3	5%	1	2%	60	94%
C52	4.45	0.83	2	3%	2	3%	60	94%

Question	Mean	SD	Negative		Neutral		Positive	
C50	4.45	0.64	1	2%	2	3%	61	96%
C35	4.42	0.71	0	0%	8	13%	56	88%
C51	4.39	0.77	3	5%	2	3%	59	93%
C29	4.36	0.8	3	5%	4	6%	57	90%
C11	4.36	0.74	1	2%	7	11%	56	88%
C07	4.36	0.7	1	2%	5	8%	58	91%
C36	4.36	0.68	1	2%	4	6%	59	92%
C20	4.34	0.84	2	4%	6	9%	56	88%
C31	4.31	0.81	2	4%	5	8%	57	89%
C44	4.28	0.77	2	3%	6	9%	56	88%
C14	4.23	0.81	1	2%	9	14%	54	84%
C46	4.22	0.65	2	3%	2	3%	60	94%
C37	4.2	0.74	1	2%	9	14%	54	85%
C48	4.19	0.92	5	8%	7	11%	52	81%
C15	4.16	1.07	7	11%	2	3%	55	86%
C32	4.16	0.98	5	8%	5	8%	54	84%
C42	4.06	1.05	5	8%	12	19%	47	74%
C09	4.03	1.23	9	14%	5	8%	50	78%
C34	4.03	1.11	9	14%	5	8%	50	78%
C22	4.03	0.93	5	8%	8	13%	51	80%
C41	3.89	1.01	6	9%	12	19%	46	72%
C49	3.89	0.98	6	9%	10	16%	48	75%
C26	3.89	0.86	3	5%	15	23%	46	71%
C45	3.88	1.23	13	21%	4	6%	47	73%
C38	3.84	1.03	8	12%	9	14%	47	74%
C27	3.63	1.25	17	26%	9	14%	38	60%
C30	3.25	1.22	18	28%	17	27%	29	45%
C40	3.23	1.12	20	32%	20	31%	24	38%
C54	2.73	1.32	35	55%	9	14%	20	31%
C43	2.69	1.08	26	40%	23	36%	15	23%
C21	2.58	0.97	28	44%	26	41%	10	16%
C01	2.27	1.25	40	63%	12	19%	12	19%
C03	2.23	1.11	37	57%	18	28%	9	15%
C18	1.48	0.96	58	90%	3	5%	3	5%
AVERAGE	4.07	0.86	8	11%	6	10%	50	79%

Ninety percent of the participants agree or strongly agree that people who knowingly give HIV to others should face criminal charges and should be held legally responsible for the medical expenses (44%) that the other person may incur by the other person. Of the participants, 63% agreed or strongly agreed that limiting the spread of HIV is more important than protecting the rights of people living with HIV/AIDS. The participants in the study agree or strongly agree that they would not consider dating (44%) or marrying (57%) a person with HIV/AIDS.

4.3.2.3 Occupational Risk

The questions related to Occupational risk perceptions due to HIV transmission items required a “Yes”, “No” or “Don’t Know” response. The “Yes” responses were scored 1 and the “No” and “Don’t Know” responses were scored 2, thus the lower the participants scores, the lower their occupational risk perception. The occupational risk scores ranged from 0 to 88.33. The participants had a mean score of 35.94 (SD=21.25), which indicates an overall low perceived occupational risk due to HIV. See Table 2, above.

The majority of the participants (94%) indicated that they previously cared for people living with HIV or AIDS of which seven (11%) previously experienced a needle-stick injury at work. The participants who indicated that they never previously managed people living with HIV or AIDS (6%) all worked primarily in the private sector ($r=0.26$; $p=0.039$). The majority of the participants (59%) indicated that HIV and AIDS makes physiotherapy a high-risk occupation but the same number (59%) of participants indicated that they do not perceive themselves to be at risk while managing HIV and AIDS patients.

Only a small group (14%) of the participants felt uncomfortable while managing HIV and AIDS patients. All of the participants (n=64) expressed that they had never previously refused to provide their physiotherapy services to people living HIV and AIDS but 7(11%) indicated that, if they had a choice, they would prefer not to work with clients living with HIV and AIDS. In terms of prevention and precaution, the majority of the participants (61%) did not know that the precautionary measures for the prevention of HIV and Hepatitis B were similar and that the chance of contracting HIV from a needle-stick injury is less than 1% (30%).

4.4 COMPARATIVE STATISTICS

4.4.1 The relationship between demographic information and HIV knowledge, attitudes and occupational risk.

In this section the relationship between the demographic information and the summated scores for HIV knowledge, attitudes and occupational risk is presented. The demographic variables include, age, marital status and years' of experience. Analysis of Variance (ANOVA) was used to compare the means between groups. The statistical significance was set at p-value of 0.05. The ANOVA statistics are presented in Table 6 below.

Table 6: ANOVA Results – Demographic Variables and Summated Scores

Variable	D.F.	Knowledge		Attitude		Occupational Risk	
		F-Value	P-Value	F-Value	P-Value	F-Value	P-Value
Age	1; 60	3.79	.056	1.39	.243	0.12	.731
Marital Status	1; 60	0.15	.699	5.79	.019	0.24	.629
Years Exp.	1; 60	4.30	.042	1.70	.198	0.26	.609

The results of the ANOVA indicate a statistically significant association between the participants Knowledge scores and Years' Experience: $F(1,60) = 4.30$, $p=0.042$ and Attitude, and Marital Status: $F(1,60) = 5.79$, $p=0.019$. This indicates that the participants "Years of Experience" influenced their knowledge scores and their "Marital Status" influenced their attitudes towards PLHIV. No significant association was found between the Occupational Risk score and any of the demographic variables, Age $F(1,60) = 0.12$, $p=0.731$; Marital Status $F(1,60) = 0.24$, $p=0.629$ or Years' Experience $F(1,60) = 0.26$, $p=0.609$.

A Post-hoc test was performed to localize the mean difference within the categorical variables. "Years' Experience" was dichotomized into 0-10 years and > 10 years, while "Marital status" was dichotomized into "Married" and "Not Married" (the single, divorced and widowed). The "Age" variable was grouped into a 20-40 year and a 40-60 year group. The Post-hoc analysis indicated a medium (Cohen's $d = 0.61$) significant difference in the mean attitude scores of the single, widow and divorce group ($M = 79.6$, $SD = 9.16$) and the married group ($M = 73.95$, $SD = 9.49$).

Thus, the single, widowed and divorced group collectively expressed a significantly more positive attitude towards HIV/AIDS and PLHIV than the married group.

Similarly, the Post-hoc analysis indicates a medium (Cohen's $d = 0.59$) significant difference between the higher HIV knowledge mean scores for participants with more than 10 years ($M = 88.17$, $SD = 8.35$) and those with 10 years or less experience ($M = 83.08$, $SD = 8.94$).

4.4.2 The relationship between area of work and HIV knowledge, attitudes and occupational risk.

In this section the relationship between the demographic variable, area of work, and the summated scores for HIV knowledge, attitudes and occupational risk scores is presented. The two groups, working in the public and private sectors respectively, are not statistically significantly different in terms of their mean scores on HIV Knowledge; ($t=1.40$; $df= 2.54$; $p=0.17$); Attitudes ($t=-0.86$; $df=2.00$; $p=0.39$) or Occupational risk ($t=-0.59$; $df=-3.13$; $p=0.56$). See Table 8, below.

Table 8: Public VS Private: Summated Scores

Area Of Work		Knowledge		Attitudes		Occupational Risk	
		Mean	S.D	Mean	S.D	Mean	S.D
	Public (n = 32)	84.88	7.38	77.66	10.23	34.38	20.71
	Private (n = 62)	87.43	7.16	75.67	8.13	37.50	22.00
	Difference	-2.54		2.00		-3.13	
	t-Test	1.40		-0.86		0.59	
	p (d.f, = 62)	.167		.391		.561	

4.4.3 The inter-relationship between HIV knowledge, attitudes and perceived occupational risk scores

Table 9: Pearson’s Correlation – Knowledge, Attitude and Perceived Occupational Risk

B Score vs C Score	.333	Knowledge & Attitude
B Score vs D Score	-.018	Knowledge & Perceived Risk
C Score vs D Score	-.169	Attitude & Perceived Risk
Statistically significant for $n = 64$ and $\alpha = .05$ if $ r > .246$		
Practically significant if $ r > .30$		

In order to establish whether any significant relationship exists between the HIV knowledge, Attitude and perceived occupational risk scores, the Pearson product movement correlation was computed in Table 9, above. A positive statistically significant correlation was observed between the Knowledge and attitude scores ($r = 0.33$, $p < 0.007$). No correlation was observed between the participants occupational risk perception and their knowledge ($r = -0.2$, $p = 0.89$). Similarly, no correlation was observed between the participants occupational risk perception score and their attitudes ($r = -0.17$, $p = 0.18$).

4.5 RESULTS SUMMARY

The results confirm that the participants in the study have a high overall HIV related knowledge and expressed a positive attitude towards people living with HIV and AIDS. At the same time, while they perceive themselves to be at a low risk of HIV transmission when managing PLHIV. Their knowledge was statistically associated with their years of clinical experience.

The participants with more than 10 years' experience had significantly better HIV related knowledge than their counterparts who had less than 10 years' experience. In addition, the attitudes of married participants towards PLHIV were significantly less favourable than those who were not married.



CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

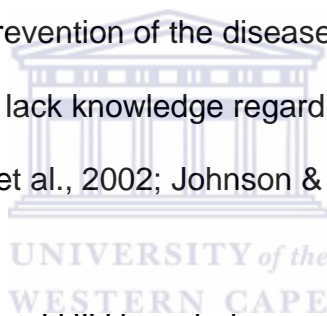
This chapter will highlight the importance of the results. The chapter will discuss the outcomes of the study in terms of addressing the objectives of the study. The chapter ends with a conclusion and recommendations.

5.2 HIV KNOWLEDGE

The results of the study indicate that the physiotherapists have a mean HIV knowledge score of 86, which was classified as “Good”. Although the overall score seems fairly high, major gaps in the basic HIV related knowledge of physiotherapists are still present. The physiotherapists who participated in this study believe that one can contract HIV through contact with sweat, saliva and urine (31%), while the majority of the physiotherapists (42%) participating in this study did not know that HIV could be transmitted via “contact with a woman’s vaginal secretions”. Thus, the findings of this study indicate that physiotherapists lack knowledge regarding the basic modes of HIV transmission specifically, the body fluids responsible for HIV transmission.

These findings are consistent with those of studies conducted over the past decade which indicated that physiotherapists lack knowledge regarding the modes of HIV transmission (Concha, Hansson & Svantesson, 2010; Oyeyemi et al., 2008; Amosun et al., 1997). Furthermore, these findings are in agreement with Concha et al (2010) who found that 77% of both physiotherapists and occupational therapists in Limpopo Province were unable to identify all the viral transmission modes.

Contrary to the findings of the current study, Puckree et al. (2002) found that 78% of the physiotherapists in Durban, South Africa, could identify all the modes of transmission. Similarly, Oyeyemi et al. (2011) found that more than 90% of the physiotherapists in the Nigerian study had a satisfactory HIV transmission knowledge, although the same group had unsatisfactory knowledge regarding HIV pathophysiology and the application of universal precautions in the workplace (Useh et al., 2003; Puckree et al., 2004; Dijkstra et al., 2007). The HIV knowledge of physiotherapists in the current study were no different, considering that they did not know that there is a female condom that could help protect woman from HIV (20%) and some believed that there is an HIV vaccine available for adults (9%). Thus, they lack basic knowledge on the prevention of the disease. Several other studies have identified that physiotherapists lack knowledge regarding HIV (Oyeyemi et al., 2008; Puckree et al., 2004; Puckree et al., 2002; Johnson & Sim, 1998).

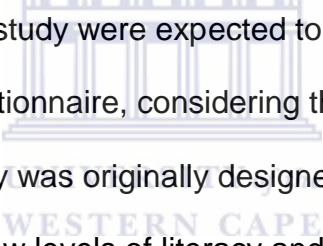


Interestingly, the physiotherapists' HIV knowledge was statistically related to their years of experience, the physiotherapists with more than 10 years' experience were more knowledgeable regarding HIV compared to their counterparts who had less than 10 years' experience. These findings correlate with the findings of Oyeyemi et al. (2008) who found that Nigerian physiotherapist's with a higher rank and presumably more years of clinical experience had better HIV knowledge than their counterparts of a lower rank.

Similarly, Useh et al. (2003) suggest previous HIV clinical exposure and a high HIV prevalence in Zimbabwe as possible reasons for the better HIV knowledge outcomes of Zimbabwean physiotherapists in comparison to their Nigerian counterparts.

Physiotherapists' previous clinical experience in the management of PLHIV has been positively linked to their attitudes towards PLHIV (Sheen & Green, 1997) and a willingness to manage PLHIV (Oyeyemi et al., 2011).

The current study highlights the importance of clinical exposure to PLHIV as a means to facilitate the consolidation of learned HIV knowledge. The findings of the current study are consistent with suggestions made by community physiotherapists in the Mangrey et al. (2010) study which suggests that "actual" clinical exposure to HIV/AIDS patients will lead to the improved ability of physiotherapists to manage patients with HIV/AIDS.



The participants in the current study were expected to perform better in the knowledge section of this questionnaire, considering that the knowledge questionnaire used in this study was originally designed to measure the general knowledge of lay people with low levels of literacy and no medical background. The low level of transmission and prevention HIV knowledge were unexpected and suggest that a major HIV knowledge gap exists among the physiotherapy population in the Eastern Cape. These findings were rather disappointing considering the impact these results might have on the clinical management of PLHIV in the Province. However, further research is needed to explore the relationship between physiotherapists HIV knowledge and the quality of care that PLHIV receive from physiotherapists.

5.3 ATTITUDES

The physiotherapists in the study expressed an overall positive attitude toward PLHIV (mean = 4.07; SD=0.86). These findings correlated strongly with the views expressed by Sheen & Green (1997); Johnson and Sim (1998) and Kambole & Struthers (2009) who found that physiotherapists expressed a largely positive attitude towards PLHIV. Kambole & Struthers's (2009) qualitative study identified several factors that influence a positive attitude amongst physiotherapists. These factors include: increased experiences of working with PLHIV; improved knowledge of HIV/AIDS; a sense of self-fulfilment and a duty to treat all patients or clients.

Similarly, this study identified a significantly positive correlation between the physiotherapists HIV Knowledge and their Attitudes ($r = 0.33$, $p = 0.007$) towards PLHIV. Thus, those with better general HIV knowledge expressed more positive attitudes toward PLHIV. Johnson & Sim (1998) observed similar results in their study of HIV knowledge and attitudes of physiotherapy students in the United Kingdom. Similarly, Oyeyemi et al., (2008) identified a modest significant correlation between the knowledge and attitudes of the Nigerian physiotherapists who participated in the study. However, the current study identified a statistically significant association between the marital status of physiotherapists and their attitudes towards PLHIV. The single, divorced and widowed participants expressed a significantly more positive attitude towards PLHIV than their married counterparts. However, this result has not previously been described in any study investigating the attitudes of physiotherapists.

The fact that the overall majority of the participants in the study clearly indicated that they would not consider, “Dating” (44%) or “Marrying” (57%) a person with HIV/AIDS should be taken into consideration. Lohrmann, Välimäki, Suominen, Muinonen, Dassan & Peate (2000), who studied the HIV/AIDS knowledge and Attitudes of German nursing student discovered that single students, had higher HIV knowledge levels than married students. The author put forward the emphasis of the German government, in targeting people when building awareness of the dangers of HIV/AIDS as a possible reason for this outcome.

A possible explanation for this result might be that married participants in the current study perceive themselves as immune or safe from possible social HIV transmission because of their (presumably) “monogamous” sexual relationship with their marriage partners. This could be why married physiotherapists are judgemental towards PLHIV. Thus, the findings of the current study give us some insight into the important role that social-cultural factors might play in influencing physiotherapists’ attitudes towards PLHIV. This is in keeping with Okoli & King (2003) who warned that HIV education alone would not be sufficient to eliminate prejudice against PLHIV. Further studies exploring the social-cultural influences on the attitudes of physiotherapists towards PLHIV is therefore suggested.

5.4 OCCUPATIONAL RISK

In terms of occupational risk, due to HIV transmission, 59% of the physiotherapists indicated that HIV makes the physiotherapy profession a high risk profession.

These findings contradict the findings of Dike (1993) who concluded that the physiotherapists in the United Kingdom viewed physiotherapy as a low risk profession in comparison to other medical professions, such as nursing and medicine. The fact that 61% of the physiotherapists in the current study did not know that the precautionary measures for Hepatitis B and HIV are similar, while 11% previously experienced a needle-stick injury could be viewed as a possible reason for this high risk perception of the profession. The fact that physiotherapists express the belief that HIV makes physiotherapy a high risk profession should be viewed in the South African context. The results of the current study correlate strongly with the views expressed by Mendelson and Meintjies (2009) who claims that the high HIV prevalence rate among the South African communities, which are served by South African health institutions, increases the number of injuries that have the potential for transmitting HIV. The poor application of universal precautions (Mosweu et al., 2005) and the non-adherence to standard infection control procedures in South African Health institutions, which includes the misuse and poor disposal of blood-taking equipment (Mendelson & Meintjies, 2009), could have stimulated the high risk perception of the profession. Therefore, a physiotherapist might not be concerned about possible HIV transmission while managing PLHIV, but might be concerned about other possible means of HIV exposure in the workplace.

One of the major occupational health issues identified in this study is the fact that 84% of the participants did not know that HIV is being destroyed by ordinary household bleach (sodium hypochlorite). A sodium hypochlorite solution (1:100) is routinely used to clean and disinfect surfaces exposed to HIV in hospitals and other health facilities (Gerberding, 2003). Physiotherapists, in this study, were not aware of the simple and inexpensive means of inactivation and disinfection of HIV in the clinical setting. This finding is not surprising considering the low level of HIV transmission and prevention expressed by the physiotherapists in this study.

Regardless of their HIV knowledge levels, the physiotherapists (59%) in the current study did not perceive themselves to be at risk of HIV transmission while managing HIV/AIDS clients. This finding is in agreement with Mangrey et al. (2010), Johnson and Sim (1998), Sheen & Green (1997) and Dike (1993) but differs from Concha et al. (2010) findings which reveal that 49% of physiotherapists and occupational therapists in Limpopo province perceived themselves to be at risk of HIV transmission while managing PLHIV, although they possessed high levels of HIV transmission knowledge. No significant association could be found between the physiotherapists occupational risk perception and any of the variables assessed during this study. Thus, possible reasons for the low risk perception in the current study could be the fact that most of these physiotherapists have more than 10 years clinical experience which includes the management of PLHIV. Furthermore, they expressed a largely positive attitude towards PLHIV. It is possible therefore, that a combination of these factors might have facilitated a more realistic HIV occupational risk perception among the participants in this study.

CHAPTER 6

CONCLUSION

6.1 INTRODUCTION

A summary of the study is provided in the chapter. Conclusions are drawn from the discussion and recommendations, based on the results of the study, are proposed.

6.2 SUMMARY

This study explored the HIV knowledge, attitudes and occupational risk perception of physiotherapists in the Eastern Cape, particularly to identify any difference in HIV knowledge, attitudes and occupational risk perception between physiotherapists working in the public sector and those working in the private sector.

The results of the study indicate that physiotherapists lack basic HIV knowledge regarding HIV transmission and prevention aspects of HIV and AIDS.

Physiotherapists, as part of a multi-disciplinary team, with an important role to play in the on-going management of PLHIV should be knowledgeable about HIV transmission and prevention, firstly, to be a reliable source of information to their patients and secondly, to protect themselves from HIV transmission inside and outside of the workplace. It is apparent that physiotherapist lack basic HIV knowledge e.g. some physiotherapists still believe that mosquitoes can transmit HIV.

Surprisingly, physiotherapists with more than 10 years' experience had a better HIV knowledge than those with less than 10 years' experience. This is especially shocking considering that the most South African Universities included HIV education as part of their curriculum over the last 5 years.

One could speculate that continuous clinical exposure and self initiated continuous professional development could be the reason for this finding. The results of the present study indicate that although the physiotherapist has low levels of HIV transmission and prevention knowledge he/she expresses positive attitudes towards PLHIV, more so from the participants who were not married. The majority of the physiotherapists indicated that they would not consider “dating” or “marrying” a PLHIV. The physiotherapists with better knowledge regarding HIV produced a more positive attitude towards PLHIV. Therefore, it is clear that the HIV knowledge of the physiotherapists in the study influences their attitudes towards PLHIV.

Physiotherapists in the study perceive the profession to be a high risk profession because of HIV, but they do not perceive themselves to be at risk while managing PLHIV. The physiotherapists did not know that the precautionary measures for conditions like Hepatitis B and HIV is the same, nor were they aware that HIV is destroyed by ordinary household bleach. The lack of HIV related knowledge by the physiotherapists should be viewed as a concern, considering the important role that physiotherapists can fulfil in contributing to the restoration and maintenance of quality of live for PLHIV

6.3 CONCLUSION

In conclusion, this study has met its objective. It succeeded in determining the HIV knowledge, attitudes and occupational risk perceptions of the physiotherapists of the Eastern Cape.

6.4 RECOMMENDATIONS

Physiotherapists as a major part of the rehabilitation team, play an important role in maintaining and restoring body function, reducing the effects of impairments and addressing the participation restrictions of PLHIV (Anderson & Lincoln, 2006).

Considering this important role, physiotherapists should be knowledgeable about HIV transmission modes and prevention; have a positive attitude towards PLHIV while having a realistic occupational risk perception because of HIV. Therefore, based on the findings of this study, the researcher would like to make the following recommendations:

- The physiotherapist should become more knowledgeable regarding HIV. Structured, accredited HIV continuous professional development courses should be developed by the South African Physiotherapy Society in conjunction with the universities responsible for training physiotherapists. These courses should be made available to all physiotherapists in South Africa, both in the private and the public sector.
- The material of the courses should include information regarding the role of physiotherapy in the management of PLHIV, HIV/AIDS prevention, transmission and aetiology of the disease and should, ideally, include practical exposure to PLHIV.
- Physiotherapist should become active members of health institutions occupational health and safety and Infection control committees and familiarize themselves with institutional occupational health, safety and infection control policies

- Workshops about the Universal Precautions to be taken when managing PLHIV, as well as occupational exposure to HIV and its prevention and management in the workplace needs to be organized for physiotherapists via in-service at the Public and Private Hospitals where physiotherapists are providing services



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APPENDIX A: APPROVAL FROM HIGHER DEGREES COMMITTEE

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14 October 2009

To whom it may concern

RE: RUDY CUPIDO, STUDENT NUMBER 9761721

Please be advised that the above student is currently registered for the Masters in Public Health and is thereby doing his mini thesis. He is working towards handing in his research proposal by 11 November for the latest.

Yours faithfully



Corinne Carolissen (Ms)
Student Administrator



A WHO Collaborating Centre for Research
and Training in Human Resources for
Health



UNIVERSITY of the
WESTERN CAPE

A place of quality, a place to grow, from hope to action through knowledge

APPENDIX B: INFORMATION SHEET



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
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E-mail:

INFORMATION SHEET

Project Title: HIV/AIDS: Knowledge, Attitudes and Occupational Risk Perceptions of Physiotherapists in the Eastern Cape Province, South Africa.

What is this study about?

This is a research project being conducted by Rudy Cupido. I am conducting this study in partial fulfilment of my Masters in Public Health at the School of Public Health, University of the Western Cape. I am inviting you to participate in this research project because you are a Physiotherapist registered with the Health Professions Counsel of South Africa and reside within the Eastern Cape and you would be able to provide valuable information towards this study.

What will I be asked to do if I agree to participate?

You will be asked to set aside approximately 30 minutes of your time in order to read the information sheet, fill in and sign the consent form and complete the self-administered questionnaire. The questionnaire consists of four parts and focuses on personal information, physiotherapist's knowledge, attitudes and occupational risk perception concerning HIV and AIDS. On completion, of the questionnaire and the signed consent form should be returned to the researcher in the self-addressed envelope provided.

Would my participation in this study be kept confidential?

We will do our best to keep your personal information confidential. To help protect your confidentiality, your name will only be written on the consent form and not on the questionnaire. The survey is anonymous and will not contain information that may personally identify you. Questionnaires will be coded and only the researcher will be able to link your survey to your identity. Collected data will be stored safely in a locked filing cabinet and processed data will be placed in password protected computer files. If I write a report or article about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

There are no known risks associated with participating in this research project.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about the physiotherapists understanding of HIV/AIDS. I hope that, in the future, other people might benefit from this study through an improved understanding of the exact training needs of physiotherapists regarding HIV.

Do I have to be in this research and may I stop participating at any time?

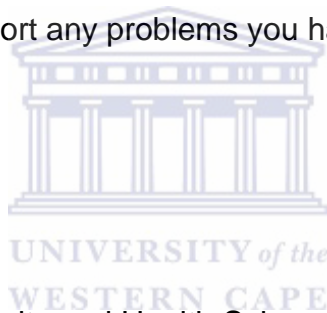
Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time.

If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by Rudy Cupido, Masters in Public Health student at the School of Public Health, University of the Western Cape. If you have any questions about the research study itself, please contact myself at telephone number 041-4052261 or 0731402000. Alternatively, email me at racupido@mweb.co.za or rac@webmail.co.za.

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:



Head of Department:

Dean of the Faculty of Community and Health Sciences:

University of the Western Cape

Private Bag X17

Bellville 7535

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.

APPENDIX C: CONSENT FORM



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E-mail:

CONSENT FORM

HIV/AIDS: Knowledge, Attitudes and Occupational Risk Perceptions of Physiotherapists in the Eastern Cape Province, South Africa.

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name:

Participant's signature:

Date:

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Co-coordinator's Name: Rudy Cupido

Master's in Public Health Student

University of the Western Cape

Private Bag X17, Belville 7535

Cell: 0731402000 Email: racupido@webmail.co.za or rac@mweb.co.za

APPENDIX D: QUESTIONNAIRE



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QUESTIONNAIRE

SECTION A

Please answer all the questions as honestly and truthfully as possible. Please indicate your answer with a tick in the relevant block.

1. **Gender:** Male Female
2. **Participants age:**
20-30 years 31-40 years 41-50 years 51-60 years
3. **Marital Status:**
Single Married Divorced
4. **Years of experience:**
Less than 5 years Between 5 and 10 years 10 years or more
5. **Main area of work:**
Public Sector Private Sector

SECTION B

This section explores your HIV/AIDS knowledge. Please indicate your answer with a tick in the relevant block.

1. **HIV and AIDS are the same thing**
Agree Uncertain Disagree
2. **There is a Cure for AIDS**
Agree Uncertain Disagree
3. **A person can get AIDS from a toilet seat**
Agree Uncertain Disagree
4. **Coughing and sneezing do not spread HIV/AIDS**
Agree Uncertain Disagree
5. **HIV can be spread by Mosquitoes**

- Agree Uncertain Disagree
6. **AIDS is caused by HIV**
 Agree Uncertain Disagree
7. **A person gets HIV by sharing a glass of water with someone who has HIV**
 Agree Uncertain Disagree
8. **HIV is killed by bleach**
 Agree Uncertain Disagree
9. **It is possible to get HIV when a person gets a tattoo**
 Agree Uncertain Disagree
10. **A pregnant woman with HIV can give the virus to her unborn baby**
 Agree Uncertain Disagree
11. **Pulling out the penis before a man climaxes keeps the woman from getting HIV during sex**
 Agree Uncertain Disagree
12. **A woman can get HIV if she has anal sex with a man**
 Agree Uncertain Disagree
13. **Showering or washing a ones genitals after sex keeps the person from getting HIV**
 Agree Uncertain Disagree
14. **Eating healthy food can keep a person from getting HIV**
 Agree Uncertain Disagree
15. **All pregnant woman infected with HIV will have babies born with AIDS**
 Agree Uncertain Disagree
16. **Using a latex condom correctly can lower a persons chance of getting HIV**
 Agree Uncertain Disagree
17. **A person with HIV can look and feel healthy**
 Agree Uncertain Disagree
18. **People who have been infected with HIV quickly show serious signs of being infected**
 Agree Uncertain Disagree
19. **There is a vaccine that can stop adults from getting HIV**
 Agree Uncertain Disagree
20. **Some drugs have been made for the treatment of AIDS**
 Agree Uncertain Disagree
21. **Woman are always tested during their pap smear**
 Agree Uncertain Disagree
22. **A person can get HIV by having oral sex, mouth to penis, with a man who has HIV**
 Agree Uncertain Disagree
23. **A person can get HIV even if she or he has sex with another person only one time**
 Agree Uncertain Disagree
24. **Using lambskin or rubber condoms are the best protection against HIV**
 Agree Uncertain Disagree

25. **A negative HIV test does not mean that the individual is free from HIV infection**
 Agree Uncertain Disagree
26. **People are likely to get HIV by deep kissing, putting their tongue in their partners mouth, if their partner has HIV**
 Agree Uncertain Disagree
27. **A person can get HIV by giving blood**
 Agree Uncertain Disagree
28. **A woman can get HIV if she has sex during her period**
 Agree Uncertain Disagree
29. **You can usually tell if someone has HIV by looking at them**
 Agree Uncertain Disagree
30. **There is a female condom that can help decrease a woman's chances of getting HIV**
 Agree Uncertain Disagree
31. **A natural skin condom works better against HIV than does a latex condom**
 Agree Uncertain Disagree
32. **A person will not get HIV if she or he is taking antibiotics**
 Agree Uncertain Disagree
33. **Having sex with more than one partner can increase a person chances of being infected with HIV**
 Agree Uncertain Disagree
34. **Taking a test for HIV 1 week after having sex will tell a persons if he or she has HIV**
 Agree Uncertain Disagree
35. **A person can get HIV by sitting in a tub or a swimming pool with a person who has HIV**
 Agree Uncertain Disagree
36. **A person can get HIV through contact with saliva, tears, sweat, or urine**
 Agree Uncertain Disagree
37. **A person can get HIV from a woman's vaginal secretions**
 Agree Uncertain Disagree
38. **A person can get HIV if having oral sex, mouth on vagina, with a woman**
 Agree Uncertain Disagree
39. **If a person tests positive for HIV, then the test site will have to tell his or her partner**
 Agree Uncertain Disagree
40. **Using Vaseline or baby oil with condoms lower the chances of getting HIV**
 Agree Uncertain Disagree
41. **Washing drug-use equipment with cold water kills HIV**
 Agree Uncertain Disagree
42. **A woman can get HIV if she has vaginal sex with a man who has HIV**
 Agree Uncertain Disagree
43. **Athletes who share needles when using steroids can get HIV from needles**
 Agree Uncertain Disagree

44. Taking vitamins keep a person from getting HIV

Agree

Uncertain

Disagree

SECTION C

This section explores your attitude towards HIV/AIDS and people with HIV/AIDS. To what extent do you agree with the following statements. Please indicate your answer with a tick, using the following 5-point scale where:

1. = Strongly Disagree

2. = Disagree

3. = Neutral

4. = Agree

5. = Strongly agree

1. Limiting the spread of HIV/AIDS is more important the trying to protect the rights of people with HIV/Aids.

Strongly disagree Disagree Neutral Agree Strongly agree

2. Support groups for people with HIV/AIDS would be very helpful to them.

Strongly disagree Disagree Neutral Agree Strongly agree

3. I would consider marrying someone who has HIV/AIDS.

Strongly disagree Disagree Neutral Agree Strongly agree

4. I would quit my job before I would work with someone who has HIV/AIDS.

Strongly disagree Disagree Neutral Agree Strongly agree

5. People should not be afraid of catching AIDS from casual contact like hugging or shaking hands.

Strongly disagree Disagree Neutral Agree Strongly agree

6. I would like to feel at ease around people with HIV and AIDS.

Strongly disagree Disagree Neutral Agree Strongly agree

7. People who receive positive results from HIV tests should not be allowed to get married.

Strongly disagree Disagree Neutral Agree Strongly agree

8. I would prefer not to be around homosexuals for the fear of catching HIV/AIDS.

Strongly disagree Disagree Neutral Agree Strongly agree

9. Being around someone with HIV and AIDS would not put my health in danger.

Strongly disagree Disagree Neutral Agree Strongly agree

10. Only promiscuous people get HIV and AIDS.

Strongly disagree Disagree Neutral Agree Strongly agree

11. I think that people with HIV/AIDS get what they deserve.

Strongly disagree Disagree Neutral Agree Strongly agree

12. People with HIV/AIDS should avoid being around other people.

Strongly disagree Disagree Neutral Agree Strongly agree

13. People should avoid going to the dentist because they might get HIV from dental instruments.

Strongly disagree Disagree Neutral Agree Strongly agree

14. The thought of being around someone with HIV or AIDS does not bother me.

Strongly disagree Disagree Neutral Agree Strongly agree

15. **People with HIV/AIDS should not be prohibited from working in public places.**
Strongly disagree Disagree Neutral Agree Strongly agree
16. **I would not want to be in the same room with someone who I knew has HIV.**
Strongly disagree Disagree Neutral Agree Strongly agree
17. **The gay plague is an appropriate way to describe HIV/AIDS pandemic.**
Strongly disagree Disagree Neutral Agree Strongly agree
18. **People who give AIDS to others should face criminal charges.**
Strongly disagree Disagree Neutral Agree Strongly agree
19. **People should not be afraid of donating blood because of HIV/AIDS.**
Strongly disagree Disagree Neutral Agree Strongly agree
20. **A list of people who have AIDS should be available to anyone.**
Strongly disagree Disagree Neutral Agree Strongly agree
21. **I would date someone with HIV/AIDS.**
Strongly disagree Disagree Neutral Agree Strongly agree
22. **People should not blame the homosexual community for the spread of HIV.**
Strongly disagree Disagree Neutral Agree Strongly agree
23. **No one deserves to have a disease like AIDS.**
Strongly disagree Disagree Neutral Agree Strongly agree
24. **It would not bother me to attend a meeting with someone with AIDS.**
Strongly disagree Disagree Neutral Agree Strongly agree
25. **An employee should have the right to fire an employee with HIV or AIDS regardless of the work they do.**
Strongly disagree Disagree Neutral Agree Strongly agree
26. **I would allow my children to play with children of someone known to have HIV/AIDS.**
Strongly disagree Disagree Neutral Agree Strongly agree
27. **People get HIV/AIDS from unnatural sex acts.**
Strongly disagree Disagree Neutral Agree Strongly agree
28. **People with HIV/AIDS should not be looked down upon by others.**
Strongly disagree Disagree Neutral Agree Strongly agree
29. **I could tell from looking at someone if he or she has HIV/AIDS.**
Strongly disagree Disagree Neutral Agree Strongly agree
30. **It is embarrassing to have so many people with HIV/AIDS in our society.**
Strongly disagree Disagree Neutral Agree Strongly agree
31. **Health care workers should not refuse to care for people with HIV/AIDS regardless of their personal feelings.**
Strongly disagree Disagree Neutral Agree Strongly agree
32. **Children who have HIV/AIDS should not be prohibited from attending school or day care centres.**
Strongly disagree Disagree Neutral Agree Strongly agree

33. **Children with AHIV/AIDS probably have a homosexual parent.**
 Strongly disagree Disagree Neutral Agree Strongly agree
34. **Aids blood test results should be confidential to avoid discrimination against people who are HIV positive.**
 Strongly disagree Disagree Neutral Agree Strongly agree
35. **HIV/AIDS is a punishment for immoral behaviour.**
 Strongly disagree Disagree Neutral Agree Strongly agree
36. **I would not be afraid to take care of a family member with HIV/AIDS.**
 Strongly disagree Disagree Neutral Agree Strongly agree
37. **If I discovered my roommate has AIDS, I would move out.**
 Strongly disagree Disagree Neutral Agree Strongly agree
38. **I would contribute money to an AIDS research project if I were making a charitable contribution.**
 Strongly disagree Disagree Neutral Agree Strongly agree
39. **The best way to get rid of HIV is to get rid of homosexuals.**
 Strongly disagree Disagree Neutral Agree Strongly agree
40. **Churches should take a strong stand against drug abuse and homosexuality to prevent the spread of HIV.**
 Strongly disagree Disagree Neutral Agree Strongly agree
41. **Insurance companies should not be allowed to cancel insurance policies for AIDS related reasons.**
 Strongly disagree Disagree Neutral Agree Strongly agree
42. **Money spend on HIV/AIDS research should be spend instead on diseases that affect innocent people.**
 Strongly disagree Disagree Neutral Agree Strongly agree
43. **A person who gives HIV to someone else should be legally held liable for any medical expenses.**
 Strongly disagree Disagree Neutral Agree Strongly agree
44. **The spread of HIV in South Africa is proof that homosexuality should be illegal.**
 Strongly disagree Disagree Neutral Agree Strongly agree
45. **A list of people who are HIV positive should be kept by government.**
 Strongly disagree Disagree Neutral Agree Strongly agree
46. **I could comfortably discuss HIV/AIDS with others.**
 Strongly disagree Disagree Neutral Agree Strongly agree
47. **People with HIV/AIDS are not worth getting to know.**
 Strongly disagree Disagree Neutral Agree Strongly agree
48. **I have no sympathy for homosexuals who get HIV/AIDS.**
 Strongly disagree Disagree Neutral Agree Strongly agree
49. **Parents who transmit HIV to their children should be prosecuted as child abusers.**
 Strongly disagree Disagree Neutral Agree Strongly agree
50. **People with HIV/AIDS should be isolated to protect others from HIV and AIDS.**
 Strongly disagree Disagree Neutral Agree Strongly agree

51. **People would not be afraid of the disease if they knew more about the disease.**
 Strongly disagree Disagree Neutral Agree Strongly agree
52. **Hospitals should not refuse to admit patients with AIDS.**
 Strongly disagree Disagree Neutral Agree Strongly agree
53. **I would not avoid a friend if he/she had AIDS.**
 Strongly disagree Disagree Neutral Agree Strongly agree
54. **The spread of HIV in our society illustrates how immoral South Africa has become.**
 Strongly disagree Disagree Neutral Agree Strongly agree

Section D

This section explores your occupational risk perception. Please indicate your answer with a tick in the relevant block.

1. **I have previously cared for patients/clients with HIV or AIDS.**
 Yes No Don't know
2. **HIV/AIDS makes my job a high risk occupation.**
 Yes No Don't know
3. **I have previously refused to provide physiotherapy services for patients with HIV/AIDS.**
 Yes No Don't know
4. **If I had a choice. I would prefer not to work with HIV/AIDS patients**
 Yes No Don't know
5. **Managing HIV/AIDS patients makes me feel uncomfortable**
 Yes No Don't know
6. **I perceive myself to be at risk of contracting HIV while managing HIV/AIDS patients.**
 Yes No Don't know
7. **In terms of personal risk, do you think you have the right to know the patients HIV status.**
 Yes No Don't know
8. **The procedures for avoiding Hepatitis B and HIV infections are similar**
 Yes No Don't know
9. **I have previously experienced a needle stick injury at work**
 Yes No Don't know
10. **After needle stick injury with a needle from a HIV-infected patient, the chance of contracting HIV is less than 1%.**
 Yes No Don't know
11. **After needle stick injury with a needle from a HIV-infected patient, immediately gently expressing blood from the puncture wound reduces the risk of contracting HIV infection**
 Yes No Don't know

Thank you for taking the time out of you busy schedule to complete this questionnaire.

Sincerely, The researcher