

**KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF
HEALTH CARE USERS TOWARDS HIV SELF-TESTING
AT SELECTED GATEWAY CLINICS AT ETHEKWINI
DISTRICT, KWAZULU-NATAL**

Sibongiseni Daphney Gumede

Dissertation submitted in fulfilment of the requirements for the Master of
Health Sciences in Nursing in the Faculty of Health Sciences at the Durban
University of Technology

Supervisor : Prof M.N. Sibiya
Date : May 2017

Declaration

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citations of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

Signature of student

Date

Approved for final submission

Prof MN Sibiya
RN, RM, D Tech: Nursing

Date

Dedication

I dedicate this dissertation to my husband Thulani and my daughters Nana, Bongeka, Nokwanda, Kuhle and granddaughter Ziyanda for all the support, encouragement, patience and understanding throughout my studies.

Abstract

Background

Human immunodeficiency virus (HIV) testing, treatment and prevention programmes have been initiated and implemented, but nearly 19 million of the 35 million people globally who are living with HIV do not know they have it. A new and powerful movement called 90-90-90 has been set in motion where the target is that by the year 2020, 90% of all people should know their HIV status, 90% of those testing HIV positive should be commenced on lifelong antiretroviral treatment and 90% of the people receiving treatment should be virally suppressed. It is argued the new innovative HIV self-testing strategy can increase the uptake of HIV testing among key populations and the general public.

Aim of the study

The aim of the study was to assess health care users' knowledge, attitudes and perceptions towards HIV self-testing at selected Gateway clinics in eThekweni District, KwaZulu-Natal.

Methodology

A quantitative, non-experimental descriptive design was used to determine knowledge, attitudes and perceptions of health care users at three selected Gateway clinics in eThekweni Health District. The researcher requested permission and was granted to conduct the study from all the relevant stakeholders. Human rights were protected and ethical considerations were adhered to throughout the research process. The convenience sample was 442 participants with a minimum of 98 and a maximum of 246 participants sampled from each of the three study sites. A survey questionnaire was used to collect data. Version 23 of SPSS was used to analyse data. Graphs and tables were used to represent frequencies. Inferential statistical were used to test whether any of the response options were selected significantly more or less than others

Results

Results of the study revealed that health care users had a reasonable knowledge of HIV self-testing and there were indications that they would use it if it was made freely available to the public and was properly regulated. Generally, there were indications that health care users had positive attitudes towards HIV self-testing. It was seen as a good idea as it can be performed in the privacy of one's home and the person would be first to know about the results. Results also revealed that there could be more people who would know their HIV status and people could test more frequently. There were perceptions that there would be no difficulty in performing an HIV self-test. The lack of pre-test counselling, false negative results, possible coercion and sale of unregulated testing kits seemed to be issues of concern that require addressing if HIV self-testing is to be promulgated.

Acknowledgements

- Without strength from God I would not have accomplished this work. I acknowledge the following people who made this study a success:
- The Durban University of Technology for offering me the opportunity to study through the institution.
- My heartfelt gratitude to Prof. Sibiya for her dedication, guidance, enthusiasm, sacrifice, patience, love and motivation. Her support is highly appreciated.
- All DUT support and academic staff especially Dr Ngxongo and Dr Sokhela for all the support and availability during the course of study.
- The Subject Librarian who was very helpful throughout the course of study, I learnt a lot from his library expertise.
- The KwaZulu-Natal Department of Health for granting permission to conduct the study.
- Addington Campus Principal and the Hospital Management for granting the study leave for me to do my studies.
- My colleagues who were very supportive especially Tholakele Nhlumayo.
- The District Manager who granted me permission to conduct the study in three hospitals' Gateway clinics.
- CEOs of institutions and Operational Unit Managers for allowing me to conduct the study at selected Gateway clinics.
- All health care users who participated in the study for their valuable time and information.

Table of Contents

Declaration.....	i
Dedication.....	ii
Abstract.....	iii
Acknowledgements.....	v
Table of Contents	vi
List of Tables	xi
List of Figures	xii
List of Appendices	xiii
Glossary of Terms	xiv
Acronyms.....	xvii
CHAPTER 1 : OVERVIEW OF THE STUDY	1
1.1 INTRODUCTION AND BACKGROUND TO THE STUDY	1
1.2 PROBLEM STATEMENT	4
1.3 AIM OF THE STUDY	5
1.4 STUDY OBJECTIVES.....	5
1.5 SIGNIFICANCE OF THE STUDY	5
1.6 OUTLINE OF THE DISSERTATION	7
1.7 SUMMARY OF THE CHAPTER	7
CHAPTER 2 : LITERATURE REVIEW	8
2.1 INTRODUCTION	8
2.2 EVOLUTION OF HIV SELF-TESTS.....	8
2.3 PROGRAMMATIC HIVST APPROACHES AND MODELS	11
2.3.1 Supervised HIVST	11
2.3.2 Unsupervised HIVST.....	11
2.3.3 Semi-restricted HIVST	11
2.3.4 Unrestricted (open access) to HIVST	12
2.4 DISTRIBUTION AND INITIATION OF HIVST KITS	12
2.4.1 Community-based approaches	12

2.4.2	Facility-initiated / facility-based approaches.....	12
2.5	ARGUMENTS FOR HIVST	12
2.5.1	Specificity and sensitivity of HIVST kits.....	12
2.5.2	Individual empowerment	13
2.5.3	Increase in uptake of HIVST	13
2.5.4	Potential for use of HIVST as a Sero-Sorting Strategy	14
2.5.5	Cost-effectiveness of HIVST	15
2.5.6	Confidentiality and privacy	15
2.5.7	Linkage to HIV/ART care following a positive HIVST result	17
2.5.8	Reduction of self-stigma.....	18
2.6	ARGUMENTS AGAINST HIVST	18
2.6.1	Misinterpretation of results	18
2.6.2	False negative result and missed infections.....	19
2.6.3	Potential violation of rights of vulnerable groups.....	20
2.6.4	Costs of HIVST kit.....	20
2.6.5	HIVST regulatory approvals	21
2.7	SUMMARY OF THE CHAPTER	22
CHAPTER 3 : THEORETICAL FRAMEWORK		23
3.1	INTRODUCTION	23
3.2	THE THEORETICAL FRAMEWORK THAT GUIDED THE STUDY	23
3.2.1	Attitude towards the behaviour.....	24
3.2.2	Knowledge	24
3.2.3	Perceived behavioural control.....	25
3.2.4	Intention to perform	25
3.2.5	Performance of behaviour.....	26
3.3	SUMMARY OF THE CHAPTER	26
CHAPTER 4 : RESEARCH DESIGN AND METHODOLOGY		27
4.1	INTRODUCTION	27
4.2	RESEARCH DESIGN	27
4.3	RESEARCH SETTING.....	28
4.4	SAMPLING PROCESS	29
4.4.1	Sampling of Gateway clinics	29
4.4.2	Sampling participants.....	29

4.4.3	Inclusion criteria	30
4.4.4	Exclusion criteria	30
4.5	DATA COLLECTION TOOL	30
4.6	DATA COLLECTION PROCESS	31
4.7	PRETESTING OF THE DATA COLLECTION TOOL	32
4.8	DATA ANALYSIS	32
4.9	RESEARCH RIGOUR	33
4.9.1	Reliability	33
4.9.2	Validity	34
4.10	ETHICAL CONSIDERATION	34
4.10.1	Right to self-determination	35
4.10.2	Right to privacy	35
4.10.3	Right to anonymity and confidentiality	35
4.10.4	Right to fair selection and treatment	36
4.10.5	Right to protection from discomfort and harm	37
4.11	SUMMARY OF THE CHAPTER	37
CHAPTER 5 : PRESENTATION OF THE RESULTS		38
5.1	INTRODUCTION	38
5.2	SAMPLE REALISATION	38
5.3	ANALYSIS OF DATA COLLECTED	38
5.4	THE RESEARCH INSTRUMENT	39
5.5	SECTION 1: PERSONAL INFORMATION	39
5.5.1	Gender	39
5.5.2	Age of respondents	40
5.5.3	Home language	41
5.5.4	Religious affiliation	42
5.5.5	Highest educational level	42
5.5.6	Marital status	43
5.5.7	Residence	44
5.5.8	Occupation	44
5.6	SECTION 2: HEALTH CARE USERS' KNOWLEDGE OF HIVST ..	45
5.7	SECTION 3: ATTITUDES OF HEALTH CARE USERS TOWARDS HIVST AND LINKAGE TO CARE	51

5.8	SECTION 4: ATTITUDES OF HEALTH CARE USERS TOWARDS DISCLOSURE OF HIV POSITIVE STATUS	54
5.9	SECTION 5: PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST	55
5.10	RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST ..	58
5.11	SUMMARY OF THE CHAPTER	59
CHAPTER 6 : DISCUSSION OF RESULTS		60
6.1	INTRODUCTION	60
6.2	OVERVIEW OF RESEARCH DISCUSSION.....	60
6.3	PERSONAL INFORMATION	60
6.3.1	Gender	60
6.3.2	Age of respondents.....	61
6.3.3	Home language.....	61
6.3.4	Religious affiliation	62
6.3.5	Educational level.....	62
6.3.6	Marital status.....	62
6.3.7	Residence	63
6.3.8	Occupation.....	63
6.4	HEALTH CARE USERS' KNOWLEDGE OF HIVST	63
6.5	ATTITUDES OF HEALTH CARE USERS TOWARDS HIVST AND LINKAGE TO CARE.....	71
6.6	ATTITUDES OF HEALTH CARE USERS TOWARDS DISCLOSURE OF HIV POSITIVE STATUS	77
6.7	PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST ..	78
6.8	RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST ..	83
6.9	SUMMARY OF RESULTS	84
6.9.1	Knowledge of HIVST.....	84
6.9.2	Attitudes of health care users towards HIVST and linkage to care .	84
6.9.3	Attitudes of health care users towards disclosure of HIV positive status	85
6.9.4	Perceptions of health care users towards HIVST	85

6.10	SUMMARY OF THE CHAPTER	85
CHAPTER 7 : CONCLUSION, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY		87
7.1	INTRODUCTION	87
7.2	CONCLUSION	87
7.2.1	Objective 1: To determine health care users' knowledge of HIVST	87
7.2.2	Objective 2: Assess health care users' attitudes and perceptions towards HIVST	87
7.2.3	Objective 3: Establish if there is any relationship between knowledge, attitudes and perceptions of health care users towards HIVST.....	88
7.3	LIMITATIONS OF THE STUDY	88
7.4	GAPS IDENTIFIED IN THE STUDY	89
7.4.1	Gaps related to health care users	89
7.4.2	Gaps related to the KZN Department of Health	89
7.5	RECOMMENDATIONS.....	89
7.5.1	Recommendations for the health care users.....	89
7.5.2	Department of Health key stakeholders	90
7.5.3	Further research	91
REFERENCES		92
APPENDICES.....		106

List of Tables

Table 5.1: Sections of questionnaire sub-headings	39
Table 5.2: Correlations between knowledge, attitudes and perceptions towards HIVST	59

List of Figures

Figure 3.1: Theory of Planned Behaviour	24
Figure 5.1: Gender.....	40
Figure 5.2: Age of respondents.....	41
Figure 5.3: Home language	41
Figure 5.4: Religious affiliation.....	42
Figure 5.5: Highest education level.....	43
Figure 5.6: Marital status	43
Figure 5.7: Residence.....	44
Figure 5.8: Occupation.....	45
Figure 5.9: Health care users' knowledge of HIVST	46
Figure 5.10: Attitudes of health care users towards HIVST and linkage to care	52
Figure 5.11: Attitudes of health care users towards disclosure of HIV positive status	54
Figure 5.12: Perceptions of health care users towards HIVST	56
Figure 5.13: Perceptions of health care users towards HIVST	57

List of Appendices

Appendices	Page
Appendix 1: University ethics clearance certificate	106
Appendix 2a: Letter of permission to the eThekweni District Manager	107
Appendix 2b: Approval letter from the eThekweni District Manager	109
Appendix 3a: Letter of permission to the KZN Department of Health	110
Appendix 3b: Approval letter from the KZN Department of Health	112
Appendix 4a: Letter of permission to the CEO of Hospital A	113
Appendix 4b Approval letter from the CEO of Hospital A	115
Appendix 5a: Letter of permission to the CEO of Hospital B	116
Appendix 5b: Approval letter from the CEO of Hospital B	118
Appendix 6a: Letter of permission to the to the CEO of Hospital C	119
Appendix 6b: Approval letter from the CEO of Hospital C	121
Appendix 7a: Letter of information in English	122
Appendix 7b: Consent in English	124
Appendix 8a: Letter of information in isiZulu	126
Appendix 8b: Consent in isiZulu	128
Appendix 9: Request and approval to use the questionnaire	130
Appendix 10a: Questionnaire in English	131
Appendix 10b: Questionnaire in isiZulu	138
Appendix 11: Letter from the statistician	148
Appendix 12: Certificate from the professional editor	149

Glossary of Terms

Attitudes

This is the way a person views something or tends to behave towards it, often in an evaluative way (Compact Oxford Dictionary Thesaurus 2006: 65).

Client initiated counselling and testing (CICT)

This is when individuals, couples or sex partners actively seek HIV counselling and testing at facilities that offer the services after deciding themselves that they need to be tested (van Dyk 2013a: 268).

Epidemic

An epidemic occurs when the incidence rate (i.e. new cases in a given human population over a given time period) of a certain disease substantially exceeds what is usual based on recent experience (Kortenbout *et al.* 2015; World Health Organization [WHO] 2015: 14).

HIV counselling and testing (HCT)

This is an important continuum of HIV prevention and treatment services where a comprehensive individual HIV risk assessment is undertaken, making it the best opportunity for decision-making and referrals where necessary. It is mostly offered by a health care worker with appropriate training in counselling and testing individuals or groups within established policy frameworks (van Dyk 2013a: 269).

HIV self-testing

This refers to any form of testing where a person collects his or her own sample which could be saliva or blood drops and does a simple laboratory test (Mavedzenge, Baggaley and Corbett 2013: 126; Cambiano, Mavedzenge, and Phillips 2014: 450; Johnson *et al.* 2014: 390; Department of Health 2015: 13; WHO 2015: 16).

HIV status/sero-status

This refers to status with respect to being seropositive or seronegative for an HIV antibody (van Dyk 2013a; WHO 2015: 17).

Key populations

Refers to those people who are most likely to be exposed to HIV or to transmit it and includes people living with HIV, men who have sex with men, transgender persons, people who inject drugs, sex workers and their clients, and seronegative partners in sero-discordant couples who are at higher risk of exposure to HIV than other people (Department of Health 2011: 8).

Knowledge

Information and awareness gained through experience or education (Compact Oxford Dictionary and Thesaurus 2006: 509).

Men who have sex with men (MSM)

Describes males who have sex with males, regardless of whether or not they have sex with women or have a personal or social gay or bisexual identity. This description includes men who self-identify as heterosexual but have sex with other men (Department of Health 2011: 8).

Morbidity

The state of being ill or having a disease (Department of Health 2011: 9).

Mortality

An individual's death or decease; loss of life (Department of Health 2011: 9).

OraQuick oral antibody test

This test checks for HIV antibodies by taking oral fluid from the upper and lower gums and putting the fluid into the test device. That device is placed in a tube with a developing solution. After 20 to 40 minutes, one line will appear if the test is negative. Two lines indicate that HIV antibodies were detected and that the person may be HIV positive. Follow-up confirmatory testing is then needed (Food and Drug Administration [FDA] 2014: 1).

Perceptions

This is understanding or interpretation of something in a particular way (Compact Oxford Dictionary and Thesaurus 2006: 669).

Provider-initiated counselling and testing (PICT)

This is a type of counselling and testing that is based on the principle that health institutions should initiate testing by offering it routinely to all patients who enter the health care facility (van Dyk 2013a: 268).

Acronyms

Acronym	Full word/sentence
AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-retroviral treatment
CICT	Client-Initiated Counselling and Testing
FDA	Food and Drug Administration
HIV	Human immune deficient virus
HIVST	HIV self-testing
HCT	HIV counselling and testing
HPCSA	Health Professions Council of South Africa
MSM	Men having sex with men
KZN	KwaZulu-Natal
PHC	Primary health care
PICT	Provider-Initiated Counselling and Testing
SAPC	South African Pharmacy Council
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

CHAPTER 1 : OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

In the year 2013, approximately 35 million people were living with the human immunodeficiency virus (HIV) globally. This number is increasing due to almost 2.1 million newly acquired infections alongside the people receiving antiretroviral therapy (ART). Out of the 35 million people living with HIV, 23.5-26.1 million are living in the sub-Saharan Africa region which is the hardest hit by the HIV epidemic. Approximately 1.5 million HIV related deaths occurred in the sub-Saharan African region in 2013 (Department of Health: 2015: 6; United Nations HIV and AIDS Programme [UNAIDS] 2014a: 11). HIV testing, treatment and prevention programmes have been initiated and implemented but nearly 19 million of the 35 million people globally living with HIV do not know they have HIV (UNAIDS 2014a: 1). The UNAIDS further emphasises that whether a person lives or dies of AIDS related diseases depends on access to HIV testing which would close the gap between people who know their HIV status and those who do not (UNAIDS 2014a: 11).

Ten countries in the sub-Saharan Africa account for 71% of the global total HIV infection in the region. These countries are Ethiopia, Kenya, Malawi, Mozambique, Nigeria, South Africa, Uganda, Tanzania, Zambia, and Zimbabwe, and they account for 81% of all people with HIV infection living in the region (UNAIDS 2014a: 28). The fact that only 45% of people living with HIV know their HIV status is a cause for concern. The lack of knowledge of HIV status among populations highlights the need to increase HIV knowledge and expand HIV testing in countries (UNAIDS 2014a: 31).

Globally, HIV remains a primary burden of disease and South Africa is one of the countries that has been hardest hit by the HIV epidemic with approximately 6.3 million people living with HIV in 2013 (Department of Health 2015: 6). In the same year, there were approximately 333 000 new infections and 200 000 deaths from AIDS related illnesses. South Africa has the highest number of people living with HIV in the world (Department of Health 2015: 6; Makusha *et al.* 2015: 1).

The world is striving towards ending the AIDS epidemic and the 2015 targets could not be met. The aim of the post 2015 era is to end the AIDS epidemic by 2030. In December 2013, the UNAIDS Programme Co-ordinating Committee called on UNAIDS to support country- and region-led determinations to establish new targets for HIV to scale up beyond 2015 (UNAIDS 2014b: 4). The new powerful and ambitious motion called the 90-90-90 Strategy was set where the first target was that by 2020, 90% of all people living with HIV will know their status, 90% of those testing HIV positive will have been started on lifelong antiretroviral treatment, and 90% of the people receiving antiretroviral treatment will be virally suppressed (UNAIDS 2014b:1). Key populations and marginalised groups such as men having sex with men (MSM), sex workers, adolescents and transgender are disproportionally at risk of HIV infections due to discrimination, stigma and social exclusion and they subsequently receive substandard health care services. They are thus deterred from learning about their HIV status and possibly receiving antiretroviral ARV treatment should they test positive for HIV. This will hinder efforts to achieve the 90-90-90 Strategy. The triangulation of wider and diverse HIV Counselling and Testing (HCT) approaches has been advocated as for a way of ensuring that people know their HIV status and one of them is HIV self-testing (HIVST) (UNAIDS 2014b: 16).

HIVST refers to any form of testing where a person collects her or his sample which could be saliva or blood drops and does a rapid and simple laboratory test. This makes the person to be the first person to know the results. It is argued that self-testing could scale up the uptake of HIVST at a low cost with

a high impact while users are empowered through the process (Mavedzenge *et al.* 2013: 126; Cambiano *et al.* 2015: 1; Johnson *et al.* 2014: 391; Department of Health 2015: 13; World Health Organisation [WHO] 2015: 55).

In some countries, HIVST using OraQuick oral antibody test progressed from door to door HCT. Malawi is one of the countries where HIVST has been used and found to be highly acceptable (Alcom 2013: 1). HIVST coupled with initiation of antiretroviral treatment at home has tripled the uptake of antiretroviral treatment in Malawi (Alcom 2013: 1).

The South African National Department of Health's response to the HIV/AIDS burden of over 6.4 million people living with AIDS has achieved very positive results with over 2 million people put on antiretroviral treatment (Makusha *et al.* 2015: 1). This was accomplished through HIV testing campaigns to try and reduce morbidity and mortality due to HIV/AIDS related problems. The South African HIV/AIDS and STI National Strategic Plan aimed to get 80% of the population to know their HIV status by 2016 and thus more regular HIV testing had been recommended (Department of Health 2011: 18). People who are sexually active with stable partners are perceived as low risk and 6 to 12 months between HIV testing is recommended.

Studies generally show acceptability of HIVST for the general and key populations (Pant Pai *et al.* 2014: 5; Bustamante *et al.* 2016: 3). HIVST can be safely and accurately performed by most people but more research still needs to be conducted to evaluate the feasibility and acceptability issues to ensure it is safe and reliable to use (Krause *et al.* 2013: 8).

The use of HIVST kits has generated numerous debates globally and more intensely when the Food and Drug Administration (FDA) legalised their use in the United States of America in 2012. In 2016 the selling of HIVST kits gained official recognition in South Africa and were made available in 4500 pharmacies countrywide following an announcement by the South African Pharmacy Council (SAPC) (Mkhwanazi 2016: 5). The Registrar of the SAPC

announced that the ban had been lifted and hence pharmacies can sell HIVST kits to the public, but also warned that pharmacists should only sell reputable HIVST kits that meet the standards of the South African Bureau of Standards (Mkhwanazi 2016:5). Divergent opinions emerged after the official announcement of sale of HIVST kits as the South African HIV Clinicians and Right to Care organization stated full support for HIVST kits being made available to the public as more people can test themselves more regularly in the comfort of their homes. On the other hand, the Treatment Action Campaign expressed a concern that sexual partners may be forced to test or people may have HIV self-test without counselling and linkage to HIV/ART care following a positive HIVST, which could lead to depression or suicide (Mkhwanazi 2016: 5).

Policy makers, health care workers and the general public should also be cognisant of the fact that HIVST kits have been available but not regulated in South Africa since 2007. Therefore, stakeholders should be aware of HIVST's potential abuse (Health Professions Council of South Africa [HPCSA] 2008: 3). Health care workers should be in a position to provide the necessary counselling and information to communities on the use of the HIVST. HIVST can be adopted if it meets the acceptable scientific standards (HPCSA 2008: 3).

1.2 PROBLEM STATEMENT

Globally and locally, HIVST is available formally and informally and it is becoming more and more available. Countries and policy holders should therefore be aware and informed of HIVST and its implications (WHO 2013: 12). Currently, South Africa has made tremendous efforts to increase the number of people testing for HIV through client initiated counselling and testing (CICT) and provider initiated counselling and testing (PICT) models, but the uptake has not achieved the best results. These models can be facility or community based. HCT campaigns have been successful but many people have exercised their rights to refuse to test. Due to the refusals to test it seems adequate testing and antiretroviral coverage will not be reached (Perez

et al. 2016: 10). Over the years HIVST has not been recommended and supported in South Africa until recently when lifting of the ban was announced. Further research work is therefore necessary to support or refute the implementation thereof (Department of Health 2015: 13). Globally, studies reveal interest in the use of HIVST (Mavedzenge *et al.* 2013: 128). However, South Africa has a diverse community with potential HIV self-testers varying in literacy, comprehension and motivation levels. Potential self-testers must possess adequate knowledge of the process of self-testing and implications thereof to prevent possible abuse, psychological harm to the self-tester and other people. In order for the testing to be successful, a person needs to be able to read and understand instructions and carry out the testing correctly. Correct interpretation is important so that the person can take the initiative to call a telephone hotline for counselling, treatment and follow-up should the need arise (Pant Pai 2014: 663). Therefore, there is a need to assess knowledge, attitudes and perceptions of HIVST strategies among health care users in eThekweni Health District.

1.3 AIM OF THE STUDY

The aim of the study was to assess health care users' knowledge, attitudes and perceptions towards HIVST.

1.4 STUDY OBJECTIVES

The objectives of the study were to:

- Determine health care users' knowledge of HIVST.
- Assess health care users' attitudes and perceptions towards HIVST.
- Establish if there is any relationship between knowledge, attitudes and perceptions of health care users towards HIVST.

1.5 SIGNIFICANCE OF THE STUDY

Over 6.4 million people in South Africa are living with the HIV (Makusha *et al.* 2015:1). South Africa has the highest burden of HIV in the world. Provider initiated counselling and testing and client-initiated HIV Counselling and

testing approaches are both facility based and have not achieved the target of 80% of the people to know their HIV status by 2016 as targeted by the HIV and AIDS and STI National Strategic Plan 2012-2016. More regular HIV testing has been recommended for both the high risk and the general population to reach the 80% target. Makusha *et al.* (2015: 8) conducted a study on perceptions of South African key stakeholders on HIVST barriers, opportunities for linkage to care; the findings were that there is a need for the country to embark on research before promoting and implementing HIVST as HIVST could revolutionise testing in South Africa.

Morbidity and mortality due to HIV related infections is increased by lack of self-knowledge of HIV status (Perez *et al.* 2016: 1). Knowing one's HIV status ensures that the person accesses antiretroviral treatment timeously to prevent HIV-related morbidities. People can also be encouraged to use barrier methods during sexual intercourse to decrease the risk of infecting their sexual partners. Enrolment in HIV care and prevention of mother-to-child transmission services can be hastened with knowledge of HIV status (Perez *et al.* 2016:10) conducted a study at an informal settlement in South Africa to examine the feasibility and acceptability of unsupervised oral self-testing for home use. Lack of trust for health care workers, possible breach of confidentiality and coerced testing were cited by participants to be major deterrents to HCT. Suggestions from this study were integrated into the standard operating procedures guiding counsellors to introduce HIVST for clients that decline HCT (Perez *et al.* 2016:10). South African stakeholders unanimously agreed that HIVST has the potential to help hard to reach populations overcome barriers to test for HIV and recommended that future research should examine uptake of unsupervised HIVST among men and male youth as key populations in HIV testing models (Perez *et al.* 2016:10).

This study seeks to contribute to generating evidence based findings by providing data on health care users' knowledge, attitudes and perceptions towards HIVST at selected Gateway clinics in eThekweni Health District. This study will determine the communities' knowledge, perceptions and attitudes

towards HIVST which can contribute to policy formulation at both the provincial and national Department of Health level. The study's findings will assist to increase the body of knowledge regarding HIVST in the nursing and medical profession.

1.6 OUTLINE OF THE DISSERTATION

Chapter 1: Background and introduction to the study.

Chapter 2: Literature review where literature resources mainly from scholarly journals, articles, textbooks and publications on HIVST are appraised.

Chapter 3: Theoretical framework.

Chapter 4: Research methodology outlined the pathway followed during the data collection process.

Chapter 5: Data analysis and presentation of results in the form of graphs, tables and percentages.

Chapter 6: Discussion of results in detail and comparing results with other scholarly work from other studies.

Chapter 7: Conclusion, limitations and recommendations.

1.7 SUMMARY OF THE CHAPTER

This chapter provided an introduction to and the background of the study and the problem statement. The aim, objectives and significance of the study were presented. The following chapter will discuss the literature on HIVST in order to gain a wider perspective on the arguments from various authors.

CHAPTER 2 : LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter provided an introduction to, and the background of, the study and the problem statement. This chapter examines evolution, approaches and arguments for and against HIVST. A literature review helps to integrate research to figure out what is already known about the topic thus illuminating the significance and foundation for new studies (Polit and Beck 2014: 116). It also allows the researcher to compare studies in detail to make more sense of the topic. This allows the researcher to create an increased knowledge and understanding of the topic under investigation (Moule and Goodman 2014: 145).

This chapter presents the views, thoughts, and findings of investigations conducted by numerous authors and researchers on HIVST. Different scholarly search engines used were EBSCOhost, MEDLINE, Google Scholar, CINAHL, Durban University of Technology Repository, Summons, and PubMed. Search key words included HIVST, self-implemented HIV testing, home testing, and oral HIV testing.

2.2 EVOLUTION OF HIV SELF-TESTS

In 1996, the United States FDA approved the Home Access HIV 1 Test system which was sold over the counter. Individuals could purchase this home test and use it anonymously at home. A sample of finger-stick dried blood was mailed to a laboratory and turnaround time was seven days. Projected uptake was not reached due to lack of awareness and concerns about accuracy and cost (Wood, Ballenger and Stekler 2014: 118). HIVST was first cited by the UNAIDS/WHO in the year 2000 and caution was made to strengthen quality assurance and protection from possible abuse before it

could be properly licensed and commercialised (Mavedzenge *et al.* 2013: 127).

A number of HIV rapid test kits have been approved by the United States FDA since 2002. Results of rapid tests are available within 20 minutes. Rapid test kits do not require special equipment and can be used by a trained person outside the conventional clinic or facility (FDA 2014: 1). In 2012, the FDA approved the OraQuick in-home test which does not require a blood sample to be sent to the laboratory for analysis. The test can be performed by a person at home and results are available within 20-40 minutes (FDA 2014: 1). Fluid from the mouth is used to test for HIV antibodies. Test kits are approved for sale in stores and online to any person aged 17 and older. The FDA emphasises the importance of following up the positive HIV results with a laboratory based test as there exists the possibility of a false positive or negative result owing to the window period. People engaging in risky behaviours such as unprotected sex with irregular partners, sex workers, illicit use of injectable drugs are encouraged to test regularly. The FDA hopes the approval would contribute to public health by helping more HIV infected people to be conscious of their HIV status thus reducing HIV transmission (FDA 2014: 1).

In the United Kingdom, the first approved HIVST kit went on sale in April 2015. According to Peate (2015: 663), there is a high incidence of undiagnosed and late diagnosis in this country. Lack of awareness of one's HIV positive status can lead to further HIV transmission to other people and unwanted ill health. The approval of self-testing was hoped to avert this situation (Peate 2015: 663).

In Australia HIVST kits have not been supported by the National HIV Testing Policy. HIV self-test kits have thus not been approved, however considerations are in place to incorporate it into the testing models of Australia (Bavinton *et al.* 2013: 2090). A study was conducted to assess if gay men would increase the frequency of testing if HIVST was available. Findings

were that HIV testing frequency would increase if self-testing kits are used. One of the challenges with frequent testing by other means was longer waiting times in doctors' rooms with subsequent loss of work time. The study further recommended support for HIV self-tests which would aid in early HIV diagnosis and prevention of further transmission (Bavinton *et al.* 2013: 2091).

The policy of up scaling HIV diagnosis using HIVST in Brazil is still in the process of being formulated. Although the country believes that more people will know their status and access treatment timeously if oral fluid is used, the use of HIVST has not been promulgated. The process of regulating the sale of oral fluid tests in pharmacies was submitted to the National Health Surveillance Agency in May 2014 and is currently under scrutiny (Ministry of Health 2015: 25).

Despite the high prevalence of HIV in the sub-Saharan countries, very few of them have incorporated HIVST into their national HIV programmes. Kenya was the first African country to develop guidelines to guide the use of over-the-counter HIV self-implemented testing kits for the general public (Ministry of Public Health and Sanitation 2008: 5). This move was to scale up HIV testing in Kenya. The guidelines state that HIVST kits must be approved and evaluated for use in Kenya. Storage conditions must be adequate to prevent damage to test kits. It further states that dispensing pharmacists must be adequately trained in counselling, demonstration and dispensing of HIVST kits. Adequate access to follow-up and referral services is emphasised (Ministry of Public Health and Sanitation 2008: 5).

The Ministry of Health secretary announced that HIVST kits were to be piloted for the first time in Lusaka to help curb the spread of HIV and AIDS in Zambia as from May 2016 (Nyondo 2016: 1). Malawi is encouraging exploration of HIVST using oral swabs and oral fluid tests kits as a model to increase knowledge of HIV status especially among key populations (National AIDS Commission 2015: 33). Zimbabwe is also committed to scaling up the number of people who know their HIV status and they are exploring emerging issues

such as community-based counselling and testing and the introduction of HIVST (National AIDS Council 2015: 19). South Africa is still considering incorporating HIVST into its policy and practice (Makusha *et al.* 2015: 7). In South Africa, HIVST kits are categorised as 'medical devices' under the Medicines and Related Substances Control Act (Act No. 101 of 1965, as amended) and are not yet regulated (Richter, Venter and Gray 2012: 1).

2.3 PROGRAMMATIC HIVST APPROACHES AND MODELS

2.3.1 Supervised HIVST

In supervised HIVST the health care worker or volunteer offers support to the person intending to perform the test. It could be in a form of pre- and post-test counselling, and demonstration on how to correctly perform the test. Referral to appropriate health care should be encouraged should an HIV test be positive (WHO 2013: 14; WHO 2015: 56).

2.3.2 Unsupervised HIVST

A person independently, privately and openly accesses HIVST. There could be direct or indirect support which could be telephonic hot lines, leaflets, support groups, legal aid and HIV prevention care and treatment services. The support that the person needs is based on his or her initiative (WHO 2015:56).

2.3.3 Semi-restricted HIVST

Rapid self-HIV tests are distributed to individuals by health care workers or volunteers. Basic pre-test instructions are given on how to use the tests. Health care workers or trained staff at pharmacies distribute HIVST kits to patients and general public (WHO 2015: 56).

2.3.4 Unrestricted (open access) to HIVST

Rapid HIVST kits are made available to the public through many types of programmes and locations such as clinics, grocery stores, pharmacies, vending machines and convenience stores (WHO 2015: 56). This approach is currently practised in the United States of America. It is envisaged that these models can be adapted to the policies and needs of the country. Modification to restrict sale of HIV self-tests to pharmacies, onsite trained nurse or only on prescription stores may be implemented (WHO 2015: 56).

2.4 DISTRIBUTION AND INITIATION OF HIVST KITS

2.4.1 Community-based approaches

Community health workers and volunteers distribute HIVST kits to community members and give brief demonstration on how to use the test and interpret the results. Face-to-face pre- and post-test HIV counselling is given for support and linkages to health care (WHO 2016: 13).

2.4.2 Facility-initiated / facility-based approaches

The client is allowed to self-test for HIV in a private setting in a health facility or home. They may also be allowed to take HIVST kits home for spouses, partners and themselves (WHO 2016: 13).

2.5 ARGUMENTS FOR HIVST

2.5.1 Specificity and sensitivity of HIVST kits

Concerns have been raised about the accuracy of HIVST kits. The specificity and sensitivity of the tests are assumed to be 92%-99%, hence the approval of the OraQuick In-Home HIV Test by the FDA in 2012 (Cambiano *et al.* 2014: 455). The HIVST kit demonstrated 99% accuracy when conducted and interpreted by trained providers and read by lay workers. When conducted and interpreted by lay people the specificity remained over 99% which is an indication of reliability of the HIVST results.

2.5.2 Individual empowerment

HIVST could encourage people to take control and manage their lives rather than depending on other people for HIV testing. In a qualitative study of 30 MSM and transgender women in Los Angeles City to determine facilitators and barriers to HIVST and other models, one of the findings was that participants felt independent and empowered to take charge of their lives (Frye *et al.* 2015: 619).

2.5.3 Increase in uptake of HIVST

Australia is one of the countries where HIVST has not been approved. Bavinton *et al.* (2013: 2091) conducted an online cross sectional questionnaire with 2 306 gay Australian men to identify factors associated with the likelihood of increasing frequency of HIVST if home testing was available. Findings were that the majority of participants reported that ability to self-test at home would increase their frequency of testing, whether they have tested before or not. Men in this study demonstrated interest in HIVST and indicated that they would test more frequently if HIVST was made available. The HIVST was viewed to be more immediate and does not need a doctor's consultation. Results of this study demonstrated a strong desire to use home HIV self-testing and authors recommended that policy makers should support home HIV self-testing among gay men (Bavinton *et al.* 2013: 2091).

In China, the situation is no different from Australia as there are no regulatory systems in place regarding the sale of HIVST kits and testing, despite the fact that these are readily available through vendors on the internet. There is thus no pre- and post-test counselling and no support should the person test positive (Yan *et al.* 2015: 490). A survey was conducted by Yan *et al.* (2015: 488) to assess the potential effects of social marketing intervention to increase the uptake of HIV testing among MSM in China. Participants reported that frequency of testing would increase if over-the-counter HIVST kits were made available to the public (Yan *et al.* 2015: 490). Other findings of the study were that the hoped for increase of self-testers would be

accelerated through the use of peer and social network based interventions such as having a friend who has tested before who can be available to support the self-tester (Yan *et al.* 2015: 491).

In Hong Kong HIVST is not legalised and a study was conducted among MSM to assess usage and acceptability of HIVST. Contrary to the above findings in Australia and China, in Hong Kong it was found that MSM had a fairly low usage and acceptability of HIVST (Wong, Tam, Chan, and Lee 2015: 512). The authors attributed the low uptake of HIVST in this country to the fact that there is less accessibility to oral based than blood based testing in Hong Kong. Secondly it is perceived that lack of access to information on HIVST could be hampering the usage and acceptability of HIVST (Wong *et al.* 2015: 512). The authors recommended that policy makers and health care workers should be well informed on HIVST so that communities can be informed, particularly MSM because of the increased risk of HIV infection.

Although HIVST has not yet been legalised in Canada, the need for an alternative HIV testing approach has been identified due to the high incidence of HIV infection among high risk populations especially MSM (Pant Pai 2014: 663). A lot of economic strain is put on the country due to late presentation with end stage HIV infection. Early detection through HIVST could avert the current situation. Interest in HIVST has been demonstrated by high-risk populations especially MSM who cannot freely access facility based testing due to stigma, discrimination, long waiting times and loss of work time (Pant Pai 2014: 663).

2.5.4 Potential for use of HIVST as a Sero-Sorting Strategy

A study conducted in New York on MSM showed the potential for using HIVST as a sero-sorting strategy whereby partners would be tested before engaging in sexual intercourse, demonstrating that it could be a means of knowing a potential partner's HIV status (Frasca *et al.* 2014: 956). In this study, qualitative and quantitative methods were used to determine attitudes and behaviour changes among gay and bisexual men following use of home

HIV testing to screen potential sexual partners. At the end of the study about 50% of participants described attitude and behaviour change related to sexual risk. The change included increased awareness of risk and changes in partner choice (Frasca *et al.* 2014: 956).

2.5.5 Cost-effectiveness of HIVST

Various assumptions regarding cost-effectiveness due to the introduction of HIVST emerged from a study conducted by Cambiano *et al.* (2015:3) in Zimbabwe. Firstly, it is assumed that there will be a halving of the number of people who are not willing to receive HIV testing using other models from 5% to 2.5%. Secondly, there will be 10% substitution of first time and 30% of repeat testers with self-testing, thus increasing the rate of first time testers. Thirdly, it is assumed that there will be a 20% increase in the rate of first time and repeat testers by 20% due to availability of HIVST (Cambiano *et al.* 2015: 3).

2.5.6 Confidentiality and privacy

HIVST can be performed in a private and confidential location, which accounts for less stigma and increased testing rates (Young *et al.* 2013: 40). A case study was conducted in the United States of America (USA) to determine the feasibility of using vending machines to dispense HIVST kits. This would avoid the stigma associated with buying HIVST kits from shops and pharmacies. Vending machines were located next to the Los Angeles Gay and Lesbian Centre should HIV self-testers require pre- and post-test counselling. The findings were that it was possible to utilise vending machines and this has the potential to increase HIV testing and acceptability of HIVST. This would also increase the identification of undiagnosed cases of HIV infection (Young *et al.* 2013: 4).

MSM are at a high risk of acquiring an HIV infection due to their sexual practices (Chiu and Young 2016: 292). African American and Latino MSM are recommended to have an HIV test every 3-6 months. Due to the perceived lack of privacy and the stigma associated with HIV testing at clinic sites, testing is erratic and not as regular. Findings of the study conducted by Chiu and Young (2016: 292) concluded that home HIV testing was acceptable among MSM and could be an answer to provide privacy and thus increase the acceptance of HIV testing. Participants with longer duration since the previous test, not sure of current HIV status and those who had sexual intercourse while under the influence of alcohol demonstrated interest in the use of HIVST (Chiu and Young 2016: 292).

A recent pilot study was conducted by Pant Pai *et al.* in 2013 in Cape Town (South Africa) among health care workers. The aim of the pilot study was to evaluate the feasibility of innovative unsupervised self-testing techniques among health care workers using internet and paper based self-test applications. The findings indicated high levels of satisfaction and positive experience with the self-test experience (Pant Pai *et al.* 2013: 7). One of the cited reasons for the positive experience was the possibility of linkages to confidential and private confirmatory testing, staging and care carried out in a personalised manner. Findings of this study concur with results of the pilot study conducted by Marlin *et al.* (2014: 4) among MSM. The study showed that new in-home testing techniques could further minimise obstacles through private and confidential testing. In both studies, participants were able to connect to health care linkages. Promotion of confidential home unsupervised self-testing for HIV may decrease the incidence of HIV infection in untested populations (Makusha *et al.* 2015: 8; Marlin *et al.* 2014: 7; Bilardi *et al.* 2013: 2098).

Findings of the study conducted in South Africa by van Dyk in 2013 in the nine provinces to identify the preferred HIV testing model, and the reasons for this preference, harmonise with those of the above authors. The findings identified that 22.3% of the participants preferred HIVST as it is performed in the

privacy and comfort of their homes. Participants who preferred self-testing felt that their HIV status is their private matter and has nothing to do with other people (van Dyk 2013b: 46). The study also identified a need for telephonic counselling that should accompany HIVST if needed.

2.5.7 Linkage to HIV/ART care following a positive HIVST result

Effective HIV prevention and care requires increased access to HIV testing and knowledge of one's sero-status. HIVST has the potential for early identification of HIV infected individuals so that people can be linked to care and be initiated on treatment in a timely manner. This would also augment the public health approach to HIV testing services in high prevalent countries (WHO/UNAIDS 2014: 5).

In France a study was conducted to determine and compare support and information needs of different population groups in preparation for government approval of HIVST. One of the findings from the participants who were the expert group was that HIVST was a significant step towards individual empowerment, especially among key populations. The importance of support, information and linkage to care throughout the self-testing process was highlighted in the findings (Greacen *et al.* 2016: 10). The French government has recently approved the use of HIVST with a government funded hotline providing information and support to HIV self-testers 24 hours a day to ensure that support and information is made available. Linkage to care and counselling is ensured through availability of the telephone hotline. The hotline ensures that emotions that come with an HIV positive result are handled properly and testers can also access antiretroviral treatment timeously (Greacen *et al.* 2016: 11).

A comparative qualitative study conducted in Malawi, Kenya and South Africa to assess constraints and opportunities for HIV scale up concurred with the above findings that counselling would be deemed necessary especially for first time HIV self-testers and in the first few years of introduction of HIVST (van Rooyen *et al.* 2015: 5). Participants, especially from South Africa, felt

that HIVST was not going to be feasible without proper pre- and post-test counselling. New models that would replace face-to-face counselling such as a telephone hotline and community health workers disseminating information to the community during pre- and post-test counselling need to be explored (van Rooyen *et al.* 2015: 5). The findings further highlighted the need for clear instructions on the package insert on how to use the HIVST kit and what to do should the test be positive to avert possible negative consequences that could come with the HIV positive result. A person who tests HIV positive can thus be able to access treatment timeously (van Rooyen *et al.* 2015: 6).

2.5.8 Reduction of self-stigma

Self-stigma and fear of being labelled as HIV positive arises from a belief that one is weak or damaged by the illness which results in a negative attitude towards seeking medical treatment (Nkuna and Nyazema 2016: 79). In health care services where PICT and CICT are offered, potential testers dread stigma due to having to undergo counselling where personal information about sexual practices is explored. In a study conducted by Nkuna and Nyazema (2016: 81) at Limpopo University in South Africa among health care students about HIVST and self-stigma, findings were that HIVST would lead to normalisation of HIV/AIDS and get rid of 'AIDS exceptionalism'. There was also a general feeling that people do not want repetition of counselling and consent if they do not need it. It was hoped that HIVST would motivate people to take responsibility for their own health and prevent self-stigma (Nkuna and Nyazema 2016: 81).

2.6 ARGUMENTS AGAINST HIVST

2.6.1 Misinterpretation of results

Several studies have raised concerns about the possible misinterpretation of the HIVST results. De La Fuente *et al.* and the Madrid Rapid HIV Testing Group (2012: 1) conducted a street based study in Spain to evaluate the feasibility of HIVST using a finger-stick whole blood rapid test called

Determine™ HIV combo. Whole blood technique was used where participants had to prick their fingers and get two drops of blood into the test kits. The unsupervised group had few instructions and tested themselves. There were 5% of misinterpreted results and 1.1% positive results misinterpreted as negative. Older people over the age of 30 years and those without a university education were more likely to misinterpret results. It was observable from the study results that participants were motivated to test in the future. The study further concluded the need for support of HIV testers either through internet videos or a telephone helpline which is already available in Spain (de la Fuente *et al.* 2012: 9).

Results of the above study harmonise with findings of the study conducted by Ng *et al.* (2012) in Singapore. The aim of the study was to assess the accuracy and acceptability of HIVST using an oral-based HIV rapid test. There was a significantly small number of false negatives. The results revealed that participants were more able to conduct the oral fluid-based sample than the finger prick-based collection. In both studies, respondents showed willingness to buy and use over-the-counter test kits with access to pre- and post-test counselling preferably telephone based (Ng *et al.* 2012: 6).

2.6.2 False negative result and missed infections

There is a possibility of false negative result when the person has not sero-converted but is already infected. There is another potential risk of false reassurance and condom-less sexual activity between discordant sex partners due to a false negative result. The risk of HIV transmission rate is increased owing to the high viral load following a recent HIV infection (Wood *et al.* 2014: 121). The long window period compared to polymerase chain reaction technique (PCR) and antigen-antibody tests is one downside of the use of rapid antibody tests. This could be averted through increased frequency of testing and use of tests with a shorter window period (Wood *et al.* 2014: 121).

2.6.3 Potential violation of rights of vulnerable groups

The promulgation of HIVST comes with divergent ethical sentiments. Unsupervised HIVST can increase HIV testing uptake and more people will be aware of their HIV status. However, there is a potential risk of increased vulnerability of high-risk groups such as women, children, sex workers, MSM and transgender (Scott 2014: 440). These marginalised groups could be coerced to undergo testing without pre and post HIV counselling and referral as indicated. In poorly resourced environments where the status of women is low without proper legal protection, mistreatment, violence, abandonment, destitution and death at the hands of their partners, families or communities may occur (Scott 2014: 440). In a study conducted by Choko *et al.* (2015: 15) in Malawi, 3% of respondents reported coercion which is a major social harm. There were no suicides or intimate partner violence related to HIVST reported. However, Allais and Venter (2014: 437) argue that there are no ethical grounds to forbid access to HIVST based on the potential abuse of vulnerable groups. Protection by law from coercion should be in place in countries where such forms of abuse are rife (Allais and Venter 2014: 437).

2.6.4 Costs of HIVST kit

The costs of HIVST kits have not been looked at in most studies, whereas it should be an important consideration if they are to be legalised in a country. In a study conducted by Brown *et al.* (2014: 10) in Nigeria participants felt the cost of HIVST kits could impede the uptake of HIVST. In the USA where HIVST is legal the cost of OraQuick in-home test is about 40 US dollars which some individuals in low income countries cannot afford. In South Africa the cost is about R35-R100 which could also not be affordable to some people. A less expensive version could be made available through subsidy or socially marketed to make it accessible even to people in low income communities (Brown *et al.* 2014: 10).

2.6.5 HIVST regulatory approvals

Strict regulatory procedures are essential to control the sale and use of HIVST kits. HIVST kits remain off-market in most countries. Australia is one of the countries where HIVST is not approved and regulated, however persons who wish to self-test can purchase unregulated kits through the internet. A study was conducted by Williams *et al.* (2016: 1) with the aim of revealing risks and dilemmas associated with purchasing unregulated HIVST kits online. Findings were that eight of the HIVST kits were purchased from seven different distributors. Investigation of the purchased kits and linked websites discovered that none met the requirements for HIV testing kits intended for home use regarding recommendations for information, quality and links to services developed from the study's review of HIVST associated literature. This means that people seeking HIVST kits are able to purchase substandard products that ill-serve their needs, and do so at a time of great personal vulnerability. The fact that Australians are willing to purchase and use these substandard products indicates HIVST is in demand. The recommendation was that health policy and models of service are necessary to ensure people that people have access to safe and effective registered HIVST kits at prices that enable equity of access to all Australians, particularly those most at risk of HIV (Williams *et al.* 2016: 7).

A serious concern was raised in a study conducted in Nigeria by Brown *et al.* in 2014. The participants raised concerns regarding the possibility of the manufacture of fake HIVST kits as has happened before with other products. Fake HIVST kits that have not passed quality assurance standards could lead to unreliable results with grave consequences to the testers (Brown *et al.* 2014: 9). It would therefore be imperative that all HIVST kits are registered with national health authorities of the country.

2.7 SUMMARY OF THE CHAPTER

The main aim of this chapter was to review literature about HIVST. The literature revealed the evolution of HIVST, arguments against and for HIVST and legal aspects thereof internationally, in the African and South African context. Very few countries have legalised and regulated the use of HIVST although these are available through the internet and can be accessed by any person wanting to use them. Generally, studies show acceptability of HIVST but there are still concerns to be addressed around the globe to prevent social harms that could occur with its use. The next chapter will examine the theoretical framework which guided the study.

CHAPTER 3 : THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The previous chapter reviewed views of various researchers on HIVST and its possible implications. This chapter looks at the theoretical framework which guided the study. A framework is an abstract, logical structure of meaning. It guides the development and organisation of the study (Burns and Grove 2009: 126). Theoretical frameworks guide the researcher in the interpretation of results and, therefore, direct the entire research process. They are a frame of reference that forms the basis for observations, definition of concepts, research designs, interpretations and generalisations (LoBiondo-Wood and Haber 2013: 141).

3.2 THE THEORETICAL FRAMEWORK THAT GUIDED THE STUDY

The study was guided by Ajzen's (1991) Theory of Planned Behaviour. According to Ajzen (1991: 179), human behaviour is very difficult to predict. Attitudes towards behaviour, subjective norms, and perceived behavioural control influence intentions to perform behaviour. The contemporary independent determinants of intention are shown in Figure 3.1.

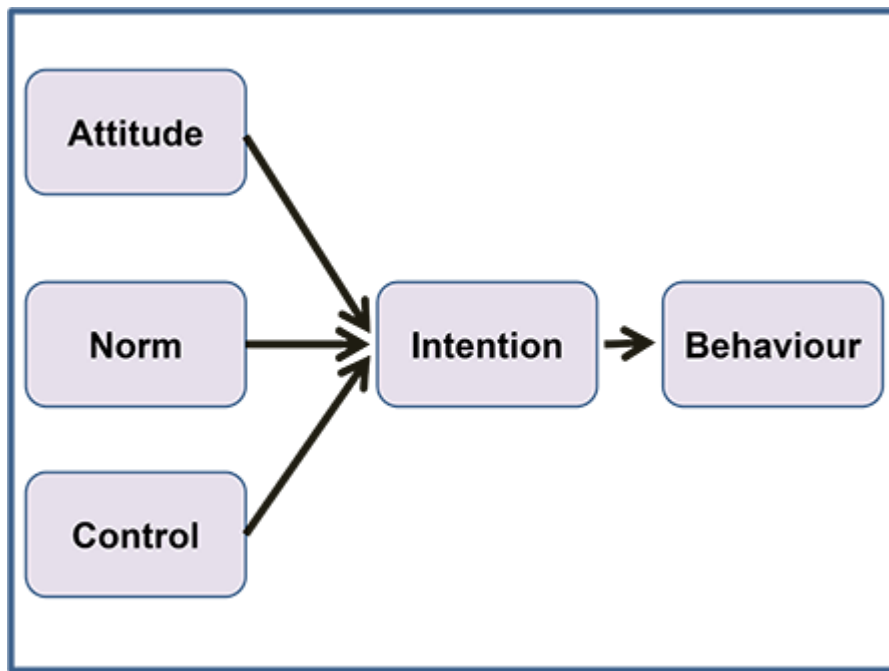


Figure 3.1: Theory of Planned Behaviour
Source: Ajzen (1991)

3.2.1 Attitude towards the behaviour

Attitude towards the behaviour is the personal evaluation of the intended behaviour leading the person to favour or not favour the intended behaviour. Attitudes can be assessed in terms of organisations, institutions such as Church, employer, job, racial group and person's associates (Ajzen 1991:188). One of the aspects that was determined in this study through the use of a questionnaire was health care users' attitudes towards HIV self-testing in eThekweni Health District. Attitudes are important as they can deter or encourage a person to favour or not favour HIVST.

3.2.2 Knowledge

In order for the person to make a decision to perform a particular behaviour, he/she needs to have sufficient information about the intended behaviour (Ajzen 1991: 180). Perceived behavioural control may be hindered if there is not sufficient information coupled with changing, or lack of, resources about the behaviour. The researcher assessed the knowledge aspect of HIVST in the study as being sufficient knowledge of HIVST, HIVST procedures,

advantages and disadvantages of testing, and where to get help should it be required.

3.2.3 Perceived behavioural control

Perceived behavioural control is perceived ease or difficulty of performing a particular behaviour and is assumed to reflect past experiences and anticipated barriers (Ajzen 1991:181). Opportunities and resources available to a person somehow dictate the likelihood of behavioural achievement. According to the Theory of Planned Behaviour, behavioural achievement can be predicted directly in order to perceive behavioural control together with behavioural intention to perform the behaviour. The person may have perceived low or high behavioural control. The intention should be constant and effort expended to bring about the course of behaviour and make the behaviour successful. The more favourable the attitudes and subjective norm with respect to the behaviour the greater the perceived behavioural control and intention to perform behaviour. It is important that a person believes that he/she will be able to perform behaviour. This is also referred to as self-efficacy (Ajzen 1991: 189). In order to be able to perform an HIVST, a person should have the perceived behavioural control to be able to do so with respect to attitudes and subjective norms. In the study, attitudes and perceptions towards HIVST and the difficulty or ease of performing an HIVST were assessed.

3.2.4 Intention to perform

It is assumed that motivational factors influence a person's behaviour. These are social pressures and personal feelings of moral obligation or responsibility to perform or to refuse to perform the behaviour (Ajzen 1991: 200). Intention to have an HIVST could be from personal feelings and moral obligations to do so. In the study attitudes and perceptions towards intention to perform the HIVST was determined via a questionnaire.

3.2.5 Performance of behaviour

Motivation and ability to perform a behaviour coupled with availability of the necessary resources will enable the person to take an action towards the behaviour. To do an HIVST, a person needs resources such as money to purchase the kit, skill to perform the test, and linkages to health care services should a need arise. In this study, the attitudes and perceptions about the purchasing of HIVST kits and the ability to perform the HIVST procedure were assessed in the questionnaire.

3.3 SUMMARY OF THE CHAPTER

The study was guided by Ajzen's (1991) Theory of Planned Behaviour. According to Ajzen (1991: 179) human behaviour is very difficult to predict. Attitudes towards behaviour, subjective norms, and perceived behavioural control that influence intentions to perform behaviour were discussed. Factors discussed in this chapter determine whether the person can perform the HIVST or not. In the following chapter the research methodology used for the study will be discussed.

CHAPTER 4 : RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter addresses the methods used in the research design, research setting, sampling process, data collection, data analysis and ethical considerations adhered to during the study.

4.2 RESEARCH DESIGN

A research design is the overall plan for answering research questions (Polit and Beck 2014: 173). A quantitative, non-experimental descriptive design was used to determine knowledge, attitudes and perceptions of health care users at selected Gateway clinics in the eThekweni Health District. Grove, Burns and Gray (2013: 694) describe quantitative research as a formal, objective and systematic study process in which one observes, describes and documents aspects of a situation as they naturally occur, while Polit and Beck (2014: 389) describe it as an investigation of phenomena that lend themselves to precise measurement and quantification, usually involving rigorous and controlled design. In a non-experimental design, the researcher collects data in an uncontrolled setting without introducing an intervention (Polit and Beck 2014: 386). A descriptive study aims to find out 'what is' by gathering and analysing data then describing it using visual aids such as graphs and charts to assist the reader to understand data distribution (Grove, Burns and Gray 2013:692). In this study, the researcher aimed at finding out about the knowledge, attitudes and perceptions of health care users towards HIVST at three selected Gateway clinics in the eThekweni Health District.

The study was informed by a positivist paradigm. A paradigm is a "world view, a general perspective on the complexities of the world" (Polit and Beck 2012: 11). Paradigms for human inquiry are often characterised by the way in which

they respond to basic philosophical questions such as the nature of reality and the relationship between the enquirer and those being studied. A positivist paradigm is grounded on the assumption that there is reality out there which can be studied and known (Polit and Beck 2014: 7). Due to the positivists' belief in objective reality, objectivity is prized. Orderly, disciplined procedures with tight controls over the research situation are employed throughout the research process. The researcher is independent from those being studied and data is collected from a real distance. Quantitative information is measured and analysed statistically (Polit and Beck 2014: 7). The researcher embarked on a quantitative study as she believes in objective reality and that the design was going to produce objective results.

4.3 RESEARCH SETTING

Research setting is the physical location and conditions in which data collection will take place in a study (Polit and Beck 2014: 292). Data was collected at the Gateway clinics of three public hospitals located in the eThekweni Health District. The eThekweni Health District is a Metropolitan Health District comprising 103 wards that are urban, rural and peri-rural (KwaZulu-Natal (KZN) Department of Health 2015-2016: 8). It is one of the 11 districts in the KZN province in South Africa. It stretches from uMkomaas in the South, Tongaat in the North and ends at Cato Ridge in the West. It has a population of approximately 3 442 361 and consists of three sub-districts which are North, South and West (KZN Department of Health 2015-2016:8). There are 16 public hospitals which have Gateway clinics where patients are assessed, investigated and treated either by primary health care (PHC) professional nurses or if necessary by doctors, who may refer them for specialist treatment if needed. Once patients are stabilised they are referred back to their local clinic or Medical Outpatients Departments (MOPD) for chronic care. Ill patients are given priority and 'fast tracked' through the system (KZN Department of Health 2015-2016: 1).

The study was conducted at Gateway clinics of three regional hospitals in the South Central (Gateway clinic A), South West (Gateway clinic B) and sub-district two (Gateway clinic C). The researcher conducted the study in these settings because they are in different sub-districts with a diversity of population groups which could possibly make it generalisable to other settings. Gateway clinic A and Gateway clinic B both attend to approximately 200 health care users per day while Gateway clinic C attends to about 500 health care users per day.

4.4 SAMPLING PROCESS

4.4.1 Sampling of Gateway clinics

Sampling is the process of selecting a portion of the population to represent the entire population (Polit and Beck 2014: 391). Hospitals were purposively selected as they were believed to have population with knowledge in question which is HIVST knowledge, attitudes and perceptions. According to Polit and Beck (2012: 343), purposive sampling is a non-probability sampling in which the researcher selects participants based on personal judgement about which ones will be most informative. The three research settings were purposively selected as they are in different sub-districts and participants could generate diverse data on knowledge, attitudes and perceptions towards HIVST.

4.4.2 Sampling participants

A convenience sampling with a total of 442 participants, altogether was arranged in the three research settings. Convenience sampling entails selecting the most conveniently available people as respondents (Polit and Beck 2014: 178). The researcher collected data on various days and times from December 2016 to January 2017 which assisted to eliminate bias. A total of 98 participants were selected from Gateway clinics A and B respectively and 246 from Gateway clinic C since it has the larger daily clinic attendance numbers. The researcher did daily sampling until the total sample was

reached. The sample was based on the total number of health care users seen on a daily basis which is approximately 200 at Gateway clinics A and B respectively and 500 at Gateway clinic C. The researcher also consulted with the statistician who advised on the sample size (Appendix 11) based on the daily clinic attendance numbers.

4.4.3 Inclusion criteria

- Participants over the age of 18 years.
- Participants who consent to participate in the study.

4.4.4 Exclusion criteria

- Participants below the age of 18 years.
- Participants who do not wish to participate in the study.

4.5 DATA COLLECTION TOOL

Data was collected using a survey questionnaire, which was explained in detail to respondents before completion. A questionnaire is a document used to gather self-report data using self-administration of questions (Polit and Beck 2014: 389). Permission was requested and granted by Alta van Dyk (Appendix 9). The questionnaire was adapted from Alta van Dyk in a study to determine health workers preferences on HIV testing model. Most of the requested questionnaire's items were used to answer questions related to the current study, in conjunction with literature reviewed to construct the study questionnaire. Assistance was also sought from the statistician after the tool was developed and suggestions made were effected.

The tool comprised five sections with a total of 68 items. Section one comprised personal information with eight items such as age, sex, gender, language, educational standard, religion and residence. Section two comprised agree, disagree or not sure items on health care users' knowledge of HIVST. The following sections comprised Likert scale items from strongly

disagree, disagree, neutral, agree and strongly agree. Section three comprised 18 items assessing attitudes of respondents to HIVST and linkage to care following HIVST. Section four comprised four items determining attitudes of health care users towards HIV status disclosure should the test be positive. The last section (5) comprised 15 items that assessed perceptions of health care users towards HIVST.

4.6 DATA COLLECTION PROCESS

Data collection only commenced after the researcher was granted full ethical clearance from the Institutional Research Ethics Committee (Appendix 1), and permission to conduct the study was received from the Provincial Department of Health (Appendices 3a and 3b), the eThekweni District Health Office (Appendices 2a and 2b), and the Chief Executive Officers of hospitals where the selected Gateway clinics are situated (Hospital A: Appendices 4a and 4b, Hospital B: Appendices 5a and 5b and Hospital C: Appendices 6a and 6b). On the day of the data collection, the researcher approached the Operational Unit Manager at the Gateway clinic for permission to collect data after making prior arrangements to visit the clinic. The Operational Unit Managers were assured that would be no interference with work processes as health care users filled in the questionnaire while waiting to be attended to. Health care users in the waiting area of the Gateway clinic were briefed about the nature of the study, purpose and issues of confidentiality. Letters of information were issued so that potential participants could fully understand the nature of the study. Thereafter, consenting participants were requested to sign the consent form (Appendices 7a, 7b, 8a and 8b).

For participants who were not familiar with English, an isiZulu translated questionnaire was made available (Appendix 10b). The researcher made use of an assistant researcher who assisted in the participants who were unable to complete questionnaires on their own but neither the researcher nor the assistant assisted in answering the questions. Completion of the questionnaire took about 30-35 minutes. The researcher remained in the

setting to collect completed questionnaires to increase retention. A sealed box was provided for posting completed questionnaires which were collected by the researcher at the end of each session.

4.7 PRETESTING OF THE DATA COLLECTION TOOL

Pretesting of the data collection tool was conducted in order to identify any errors and ensure accuracy prior to conducting the main study. Pretesting is a smaller version of a proposed study used to refine data collection tool and identify any potential weakness (Polit and Beck, 2008: 44). Pretesting was conducted at one of the three selected Gateway clinics. A total of four participants who voluntarily consented to participate in the study were selected to be in the pretesting of the questionnaire. The process was explained to potential participants on the day of the study after provisional ethical clearance was obtained from the university Ethics Committee. Respondents who participated in the pretesting of the data collection tool were excluded from the main study. Data collected from the pretesting of the tool was not included in the data analysis of the main study. There were no problems identified in the tool and no changes were made.

4.8 DATA ANALYSIS

Data analysis is the systematic organization and synthesis of research data (Polit and Beck 2014: Page: 378). The intention of data analysis is to clarify and inspect relationships between concepts and variables, identify key patterns which are common or isolated thus enhance data interpretation (Moule and Goodman 2014: 385). Data from questionnaires was captured and subsequently analysed with the assistance of a statistician. Version 23 of SPSS was used to analyse data. Graphs and tables were used to represent frequencies. Inferential statistical tests such as the Chi-Square goodness of-fit test were used to test whether any of the response options were selected significantly more or less than others.

4.9 RESEARCH RIGOUR

Quantitative researchers have to use several criteria to assess quality of the study and these are sometimes referred to as 'scientific merit' (Polit and Beck 2014: 72). Research rigour is the endeavour for excellence in research involving discipline, scrupulous adherence to detail and strict accuracy. A quantitative researcher who is rigorous will strive to use precise measurement methods, representative samples, structured methods and tightly controlled study designs (Burns and Grove 2009: 34). Cronbach's alpha was used to test if a set of questions that supposedly measure a single construct consistently measured that construct. Items on perceptions towards HIV testing were tested using Cronbach's alpha to test if a set of questions that supposedly measure a single construct consistently measured that construct. The first seven items yielded .769 and the last eight yielded .736. Both these alpha values were more than .7 which indicated reliability of the questions. Furthermore, the researcher used an adapted questionnaire (Appendix 9) and pretesting of the instrument was conducted on a small scale and results were analysed. There were no flaws identified and thus no changes were effected in the questionnaire.

4.9.1 Reliability

Reliability refers to the accuracy and consistency of information obtained in a study (Polit and Beck 2014: 72). The researcher ensured reliability by pretesting the data collection tool with health care users at the selected Gateway clinics. Results of the pre-test were analysed to determine whether the data collecting tool was reliable or not. The data collection process commenced after results from the pre-test study had been analysed. Data was collected from health care users attending Gateway clinics since they were in a position to yield information for the study. The English and isiZulu versions of the questionnaire was to ensure that all participants understood questions and a research assistant who was fluent in both languages was available during the data collection process.

4.9.2 Validity

Validity is the second criteria for scientific merit in quantitative research. The validity question is whether the data collection methods are really measuring the concepts that they are supposed to measure (Polit and Beck 2014: 72). It also examines the extent to which the questionnaire includes all major elements relevant to the construct being measured (Burns and Grove 2009: 381).

Content-related validity evidence examines the extent to which the method of measurement includes all major elements relevant to the construct being measured. The researcher obtained the previously tested and validated questionnaire (Appendix 9) and adapted it to the study. Contents of the data collection tool were guided by evidence obtained from literature reviews and the previously used questionnaire. The population under study was representative as different setting with different backgrounds formed part of the study. Results of the study were analysed with the assistance of the statistician.

4.10 ETHICAL CONSIDERATION

The researcher requested ethical clearance from the Institutional Research Ethics Committee. Permission to conduct the study was also requested from the KZN Department of Health (Appendices 3a and 3b), eThekweni District Health Manager (Appendix 2a and 2b) and the three selected hospitals' Chief Executive Officers. (Appendices 4a, 4b, 5a, 5b, 6a and 6b). Data collection only commenced upon receipt of approvals from these institutions.

According to Grove, Burns and Gray (2013: 163), individuals have rights that are necessary for their self-respect, dignity and health. Human rights that were protected during the research process are discussed below.

4.10.1 Right to self-determination

Right to self-determination is based on the principle of respect for persons. People are capable of controlling their own destinies and have the right to control their lives as they choose without outside control (Grove, Burns and Gray 2013: 163). In the study potential participants were fully informed about the study aims and processes that were involved in data collection through the use of the information letter (Appendices 7a and 8a). They were also informed that participation is voluntary should they decide to participate in the study. Their right to withdraw from the study anytime should they wish not to continue participating in the study was conveyed to the potential participants. There was no penalty for such withdrawal from the study.

4.10.2 Right to privacy

Right to privacy pertains to the individual person's right to determine the extent and general circumstances under which personal information will be shared or withheld from other people. These may entail attitudes, beliefs, opinions, records and behaviours (Grove, Burns and Gray 2013: 169). The researcher collected information only after the potential participants had been fully informed that information gathered was to be used for research purposes only and no information was to be shared with other people. There was no invasion of privacy as the study did not require sharing of private information. Participants could not be identified from the information used because there were no names attached to questionnaires thus protecting their privacy.

4.10.3 Right to anonymity and confidentiality

The right to anonymity is exercised when the participant's identity cannot be linked by the researcher and other people to individual responses. The researcher is not in a position to contact the participants for additional information (Grove, Burns and Gray 2013: 172). In this study the researcher did not have any participants' identities and thus it was not possible to link any information with participants. No names were written in the questionnaire to

ensure the right to anonymity was adhered to. Codes were used in the questionnaires for cross referencing purposes only during data capturing and analysis.

The right to confidentiality refers to the researcher's management of private information shared by participants that cannot be shared with other people without authorisation by participants (Grove, Burns and Gray 2013: 172). In this study no unauthorised persons could access the raw data and there was no reporting or publication of the study where participants' identities were revealed as there were no names attached to questionnaires. Consent forms were not stapled together with data collecting tools which could have made it easy for unauthorised persons to readily identify participants with their responses. Data was entered and stored on a hard drive which is accessible with the researcher's password to ensure confidentiality. In the computer files codes for identification of data and not names were used. Electronic data will be stored for five years and thereafter permanently wiped off from the computer.

4.10.4 Right to fair selection and treatment

This principle is based on the ethical principle of justice which states that each person should be treated fairly and receives what is owed/due. Fair selection means that participants should be selected for reasons directly related to the problem under study and not because they are easily available or in a compromised situation (Grove, Burns and Gray 2013: 172). In this study participants were conveniently selected to eliminate bias in the selection of potential participants.

Fair treatment of participants is ensured when there is specific agreement between the researcher and participants regarding the roles of both parties (Grove, Burns and Gray 2013: 174). An information letter (Appendices 7a and 8a) was provided by the researcher stating the aims and procedures involved in the study. There were no changes in the procedure as laid down in the

information letter without participants' consent. Fairness was also ensured by including different age, racial, community and gender groups.

4.10.5 Right to protection from discomfort and harm

Right to protection from discomfort and harm is based on the ethical principle of beneficence which embraces that one should do good and do no harm (Grove, Burns and Gray 2013: 174). There was no physical harm or discomfort that could occur as there were no invasive procedures involved in the study. The researcher used survey questionnaires and there was no in-depth exploration or probing of personal and sensitive issues. Participants were given the opportunity to ask questions in their language of choice should there be questions related to the study. All survey questionnaires were locked up in a cupboard and no other person had access to it. Only participants who voluntarily consent to participate in the study were included and there were no negative consequences for non-participation.

4.11 SUMMARY OF THE CHAPTER

This chapter on methodology has provided an outline of the study's phases including the research design, area of the study, application of the theoretical framework, sampling, data collection, data analysis, research rigour and ethical considerations. The next chapter will focus on the presentation of the study's findings.

CHAPTER 5 : PRESENTATION OF THE RESULTS

5.1 INTRODUCTION

The previous chapter provided a detailed discussion of the research design and methodology used in the study. This chapter will discuss the data analysis process and present the results of the study. The purpose of data analysis in any research is to organise and give order to a large body of collected information so that general conclusions can be reached and communicated in the research report (Burns and Grove 2009: 53). The data collected from respondents will be reported on in this chapter using the objectives of this study.

5.2 SAMPLE REALISATION

A total of 460 questionnaires were distributed, and they were all returned which yielded a response rate of 100%. Eighteen questionnaires were not spoiled as they were incompletely filled in or multiple responses selected in one item.

5.3 ANALYSIS OF DATA COLLECTED

The data collected was analysed using SPSS version 23.0. Tests that were used in data analysis were descriptive statistics including means and standard deviations where applicable. Frequencies are represented in tables or graphs. Chi-square goodness-of-fit-test was used which included a univariate test based on a categorical variable to test whether any of the response options are selected significantly more or less often than others. One sample t-test was used to test whether a mean score is significantly different from a scalar value.

5.4 THE RESEARCH INSTRUMENT

The self-administered questionnaire consisted of 68 items, with a level of measurement at a nominal or an ordinal level. The questionnaire was divided into five sections as shown Table 5.1.

Table 5.1: Sections of questionnaire sub-headings

Section	Sub-Heading
1	Personal information.
2	Health care users' knowledge of HIVST.
3	Attitudes of health care users towards HIVST and linkage to care.
4	Attitudes of health care users towards HIV positive status disclosure.
5	Perceptions of health care users towards HIVST.

5.5 SECTION 1: PERSONAL INFORMATION

This section presents data in respect of personal information of respondents including: gender, age, home language, religious affiliation, highest educational level, marital status, residence, and occupation.

5.5.1 Gender

Gender of respondents who completed the questionnaires is illustrated in Figure 5.1. The majority of the respondents were females $n=304$ (68.8%) with a lesser percentage being males $n=133$ (30.1%) and $n=5$ (1.1%) were unspecified as they preferred not to state their gender.

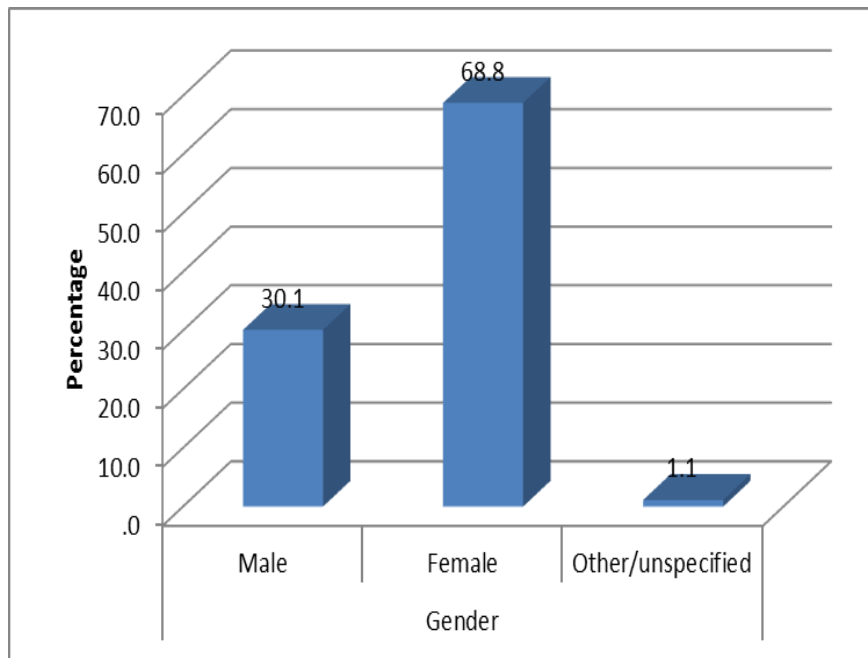


Figure 5.1: Gender

5.5.2 Age of respondents

The age categories of respondents (Figure 5.2) ranged from 18-29, 30-39, 40-49, 50-59, 60 and above with the last category not preferring to state their ages. The majority of respondents were between the ages 18-29 years $n=188$ (42.5%), followed by 30-39 years $n=101$ (22.9%). The ages between 40-49 were $n=67$ (15.2%) while the ages between 50-59 were $n=27$ (6.1%) and the least respondents were 60 years and above which were $n=18$ (4.1%). Respondents who preferred not to state their age were $n=41$ (9.3%).

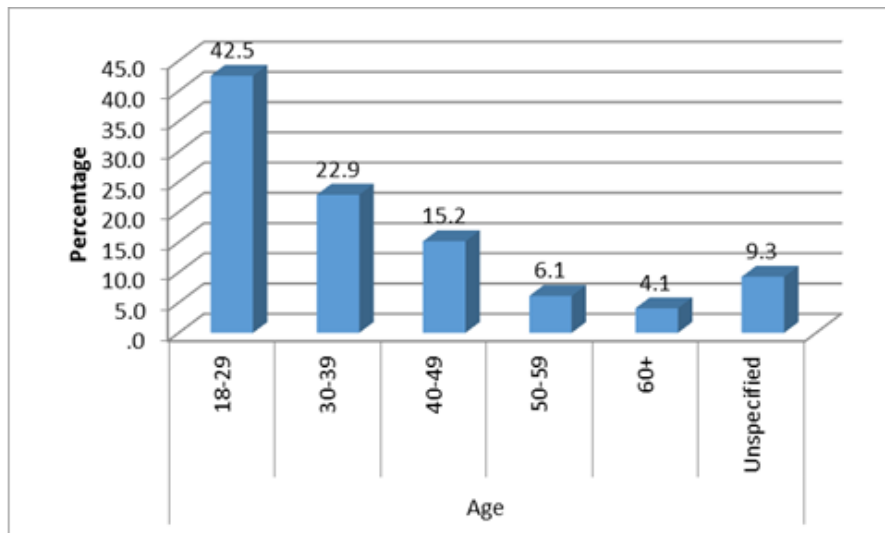


Figure 5.2: Age of respondents

5.5.3 Home language

The findings of the study revealed that the highest number of respondents as illustrated in Figure 5.3 spoke isiZulu in their homes $n=324$ (73.3%), while $n=58$ (13.1%) were English speaking. This was followed by isiXhosa speaking respondents who were $n=39$ (8.8%), and $n=2$ (0.5%) who spoke Afrikaans. A small percentage spoke either Northern Sotho $n=4$ (0.9%), isiNdebele $n=3$ (0.7%), Setswana $n=1$ (0.2%), Sesotho $n=4$ (0.9%), Tshivenda $n=1$ (0.2%), SiSwati $n=4$ (0.9%) or other languages $n=2$ (0.5%).

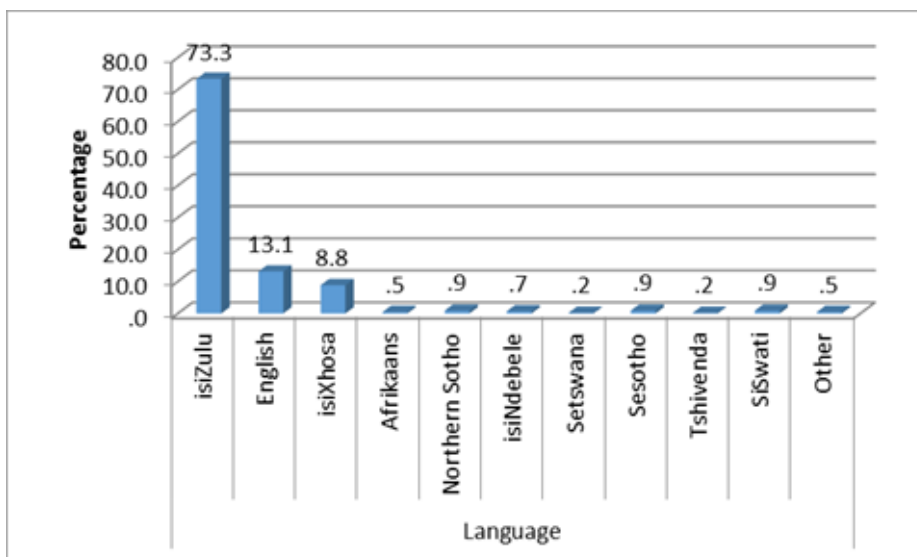


Figure 5.3: Home language

5.5.4 Religious affiliation

The religious affiliation of respondents is depicted in Figure 5.4. Christians accounted for n=338 (76.5%) of the sample. Nazareth constituted n=60 (13.3%) while Hindu were n=18 (4.1%) and Muslims were n=17 (3.8%). An equal number of respondents were atheists n=3 (0.8%) and Rasta n=3 (0.8%). There was missing data n=3 (0.7%).

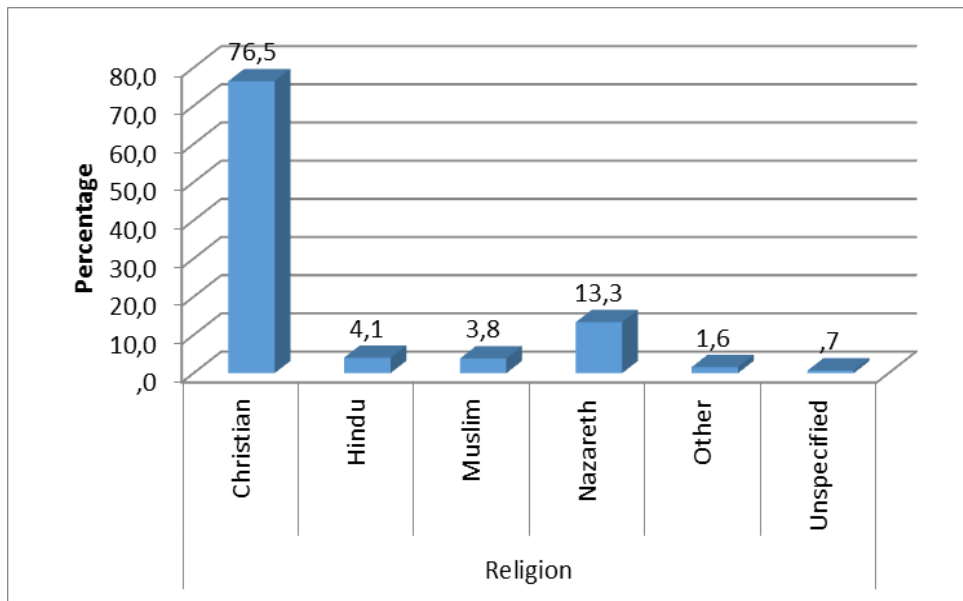


Figure 5.4: Religious affiliation

5.5.5 Highest educational level

As seen in Figure 5.5, the results of the study reveal that the majority of respondents had some or all high school education n=266 (60.2%). This was followed by tertiary education n=131 (29.6%) with the lowest number of respondents with some or all primary school education n=44 (10%). One respondent did not answer this question.

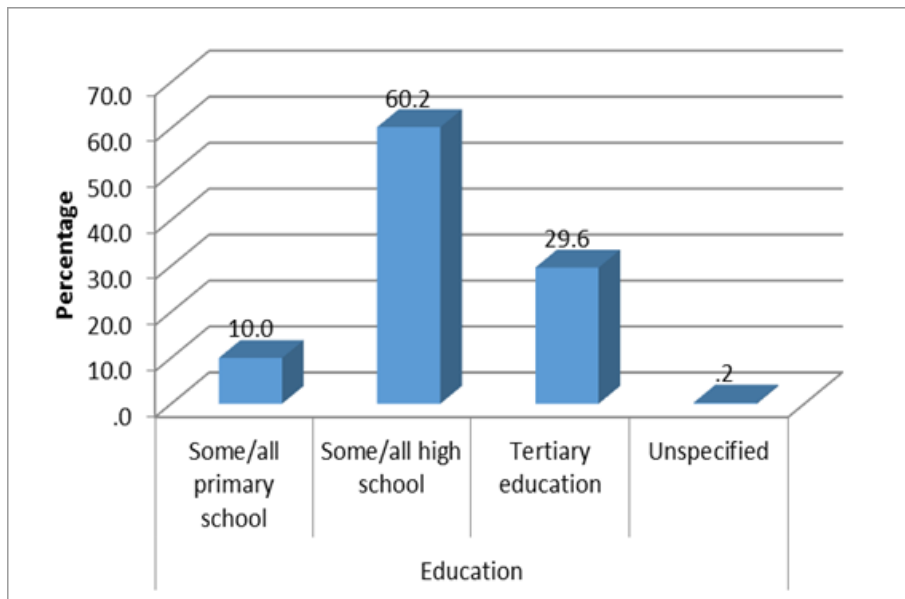


Figure 5.5: Highest education level

5.5.6 Marital status

Figure 5.6 indicates that most of the respondents were single $n=275$ (62.2%). This was followed by married respondents who were $n=73$ (16.5%). Those that were partnered were $n=5$ (12.4%). A minority of respondents were widowed $n=27$ (6.1%) and a small percentage $n=12$ (2.7%) was divorced or separated.

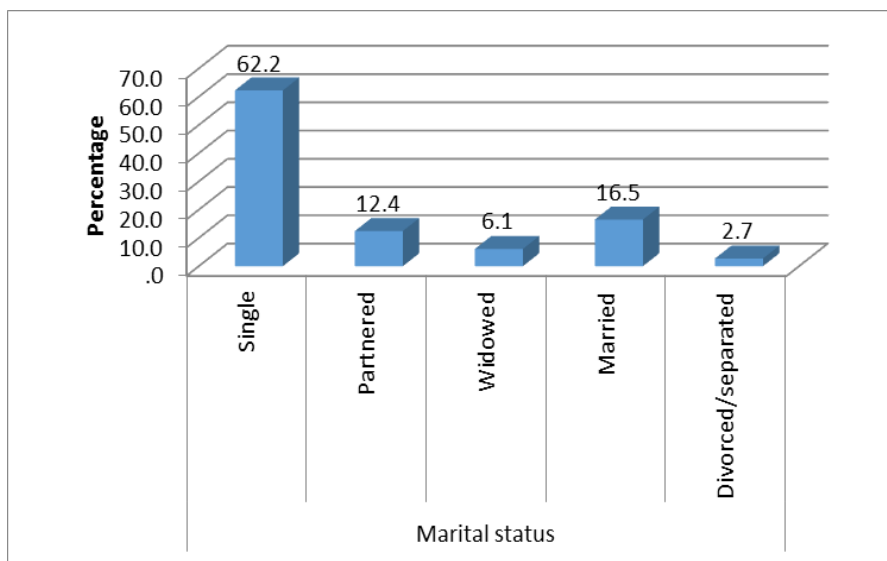


Figure 5.6: Marital status

5.5.7 Residence

Figure 5.7 depicts the place of residence of respondents. The data demonstrates that the highest number of respondents were from the township n=205 (46.4%). This was followed by respondents residing in urban areas n=121 (27.4%). There was n= 62 (14%) respondents residing in rural areas. A small number of respondents were residing in informal settlements n=37 (8.4). The lowest number was residing in peri-urban areas n=17 (3.8%).

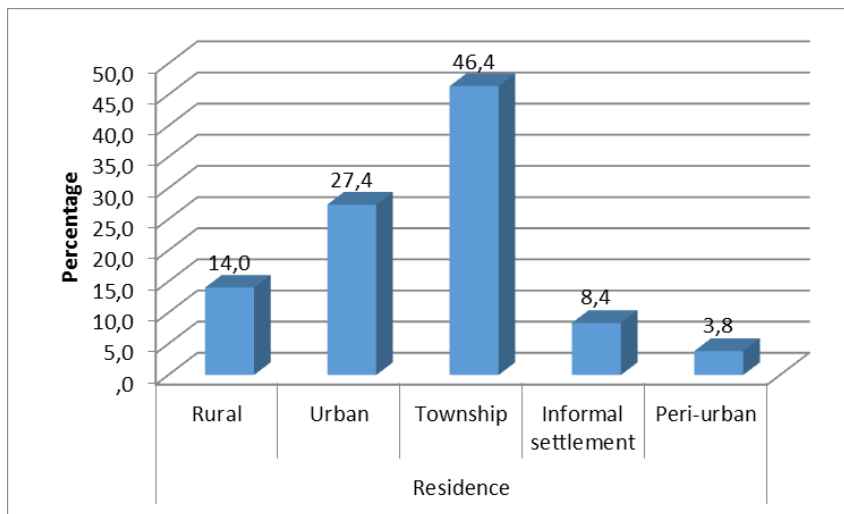


Figure 5.7: Residence

5.5.8 Occupation

Figure 5.8 indicates respondents' occupation. The majority of respondents were working n=184 (41.6%). This was followed by those that were not working n=175 (39.6%). Students who were pursuing post-school education were n=50 (11.3%). The least number of respondents were attending basic school education n=33 (7.5%).

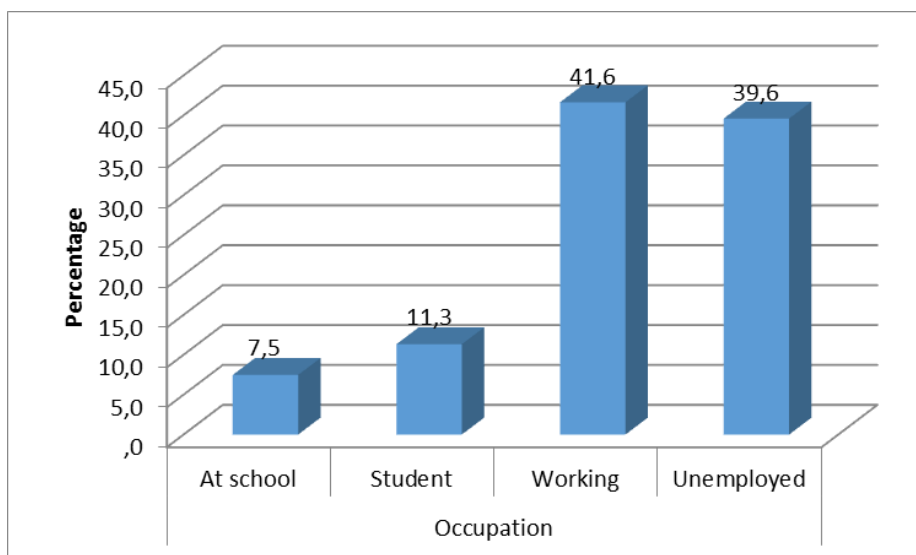


Figure 5.8: Occupation

5.6 SECTION 2: HEALTH CARE USERS' KNOWLEDGE OF HIVST

The first objective of the study was to determine the health care users' knowledge of HIVST. This section deals with respondents' knowledge of HIVST. The section that follows presents findings with regards to HIVST knowledge.

Health care users' knowledge of HIVST is graphically presented in Figure 5.9. The responses were agree, disagree or not sure. The chi-square goodness-of-fit test was used to test whether a significant number of the sample selected any specific response option. A significant number of respondents $n=307$ (69.5%) have heard about HIVST ($\chi^2 (2) = 285.235$, $p < .0005$). Some $n=111$ (25.1%) respondents disagreed with having heard about HIVST. A small percentage $n=24$ (5.4%) were uncertain whether they have heard about HIVST or not.

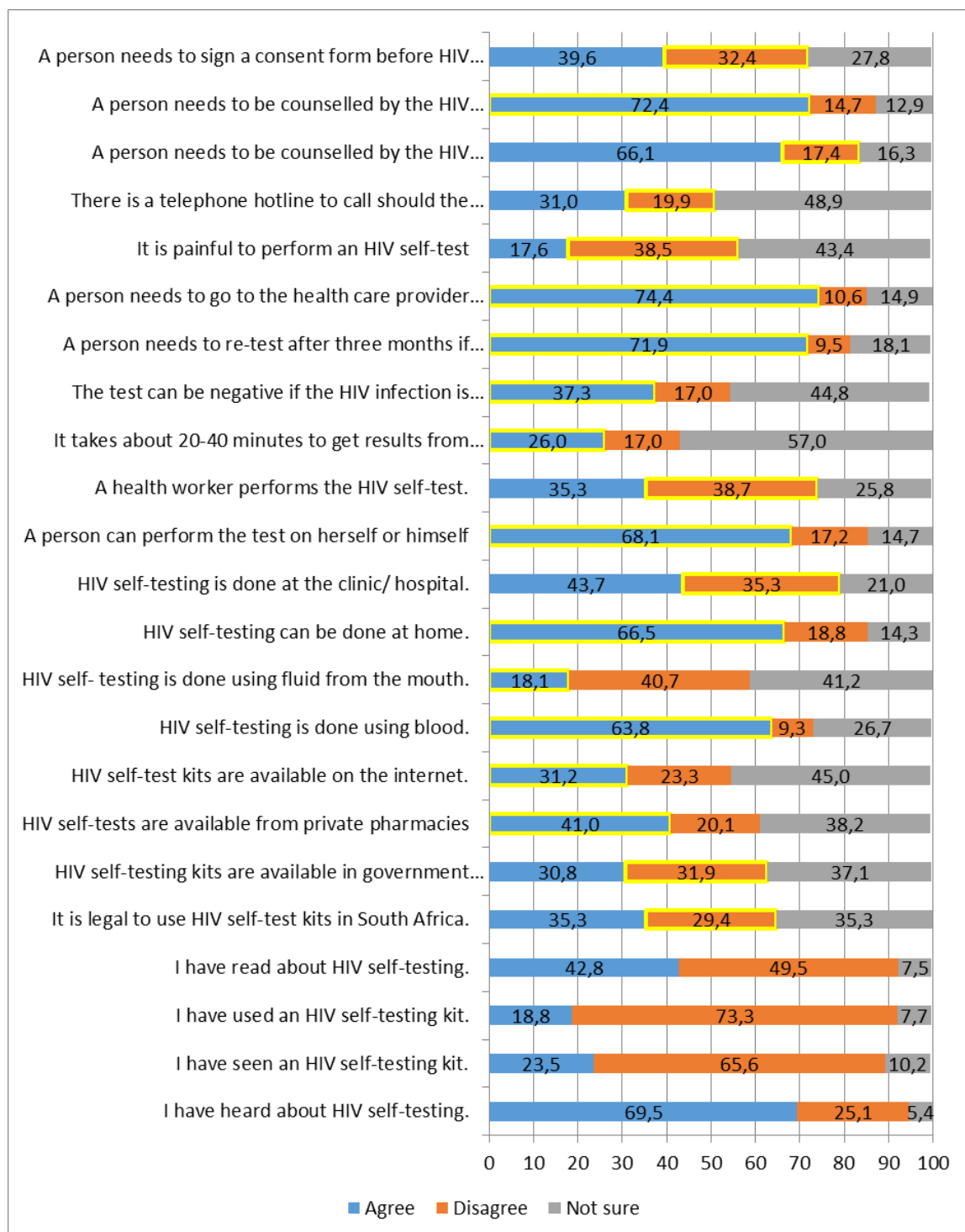


Figure 5.9: Health care users' knowledge of HIVST

The majority of respondents n=290 (65.6%) have never seen an HIVST kit ($\chi^2(2) = 223.467$, $p < .0005$) while n=104 (23.5%) have seen it. A small number of respondents n= 45 (10.5%) were not sure if they have seen it or not. Three respondents did not answer the question. A significantly greater number of the

respondents n=324 (73.3%) have never used an HIVST kit ($\chi^2(2) = 327.850$, $p < .0005$). Only n=83 (18.8%) indicated that they had used it, while n=34 (7.7%) were not sure whether they have used it or not. One respondent did not answer this question. A significant number of respondents n=219 (49.5%) have never read about HIVST ($\chi^2(2) = 135.675$, $p < .0005$). Some n=189 (42.8%) have read about HIVST and n=33 (7.5%) were not sure whether they have read about HIVST or not. One respondent did not answer this question.

The same number of respondents n=156 (35.3%) indicated that it is legal to use HIVST kits in South Africa ($\chi^2(2) = 3.059$, $p = .217$) as those that disagreed that it was legal (n=156 (35.3%). The least number of respondents n=130 (29.4%) were unsure whether it was legal to use HIVST kits in South Africa ($\chi^2(2) = 3.059$, $p = .217$).

A notable number of respondents n=164 (37.1%) were not sure whether HIVST kits are available in government clinics or hospitals ($\chi^2(2) = 3.034$, $p = .219$). This was followed by respondents n=141 (31.9%) who disagreed that HIVST kits were available from government clinics or hospitals. The least number of respondents n=136 (30.8%) indicated that HIVST kits are available from government clinics or hospitals. One respondent did not answer this question.

The majority of respondents n=181 (41.0%) indicated that HIVST kits are available from private pharmacies ($\chi^2(2) = 34.187$, $p < .0005$). A notable n=169 (38.2%) indicated that they did not know whether HIVST kits are available from private pharmacies. A small number of respondents n=89 (20.1%) disagreed that HIVST are available from private pharmacies. Three respondents did not answer this question.

A significant number of respondents n=199 (45%) were not sure whether HIVST kits are available via the internet ($\chi^2(2) = 32.186$, $p < .0005$). This was followed by the respondents who agreed that HIVST kits are available from

the internet n=138 (31.2%). The least number of respondents n=103 (23.3%) disagreed that that HIVST kits are available from the internet. Two respondents did not answer this question.

The majority of respondents n=282 (63.8%) knew that HIVST can be done using blood ($\chi^2 (2) = 206.136, p < .0005$). This was followed by respondents n=118 (26.7%) who were not sure whether blood is used during HIVST or not. The least number of respondents n=41 (9.3%) did not know whether HIVST is done using blood. One respondent did not answer this question.

A significant number of respondents n=182 (41.2%) were not sure whether HIVST can be done using fluid from the mouth ($\chi^2 (2) = 46.172, p < .0005$), while n=180 (40.7%) of respondents disagreed that fluid from the mouth can be used to perform HIVST. The least number of respondents n=80 (18.1%) agreed that fluid from the mouth can be used to perform HIVST.

A significant number of the sample n=294 (66.5%) demonstrated knowledge that HIVST can be done at home ($\chi^2 (2) = 223.368, p < .0005$). This was followed by few respondents who disagreed that HIVST can be done at home n=83 (18.8%). The minimum number of respondents n=63 (14.3%) were not sure whether HIVST can be performed at home. Two respondents did not answer this question.

Most respondents n=193 (43.7%) indicated that HIVST is performed at the clinic or hospital ($\chi^2 (x) = 34.701, p < .0005$). A reasonable number of respondents n=156 (35.3%) indicated their disagreement that HIVST is performed at the clinic or hospital while n=93 (21.0%) were not sure whether it is performed at the clinic or not.

It was noted that significantly more respondents n=301 (68.1%) knew that a person can perform the test on herself or himself ($\chi^2 (x) = 240.819, p < .0005$), compared to those that indicated their disagreement n=76 (17.2%) and the

neutral respondents n= 65 (14.7%) who were not sure whether a person can perform the test on herself or himself.

Most respondents n=171 (38.7%) possessed the knowledge that it is not a health worker who performs the HIVST ($\chi^2(2) = 11.878$, $p < 0.0005$) compared to those n=156 (35.3%) who agreed that it is the health worker who performs the HIVST. A significant number n=114 (25.8%) were not sure whether a health worker performs the HIVST or not. One respondent did not answer this question.

A significantly higher proportion of respondents n=252 (57%) were not sure that it takes about 20-40 minutes to get the results from the HIVST ($\chi^2(2) = 116.964$, $p < 0.0005$) compared to n=115 (26%) who demonstrated knowledge that it takes (20-40 minutes) to get results from the HIVST. The least number of respondents n=75 (17%) did not possess the knowledge of the duration it takes to have the HIVST results.

The majority of respondents n=198 (44.8%) were not sure that the test can be negative if the person has been infected with HIV in less than three months since infection ($\chi^2(2) = 55.521$, $p < 0.0005$). This was followed by n=165 (37.3%) respondents who indicated knowledge that the test can be negative if the HIV infection occurred less than three months previously. A small number of respondents n= 75 (17.0%) did not possess knowledge that the HIVST can be negative if the infection occurred less than three months previously. Four respondents did not answer this question.

The majority of respondents n=318 (71.9%) knew that a person needs to test again after three months if the HIVST is negative ($\chi^2(2) = 305.145$, $p < 0.0005$). A notable number of respondents n=80 (18.1%) were not sure whereas n=42 (9.5%) indicated their disagreement that a person needs to re-test after three months if the test is negative. Two respondents did not answer the question.

The majority of respondents $n=329$ (74.4%) indicated their knowledge that there is a need to go to the health care provider if the HIVST is positive ($\chi^2(2) = 337.226$, $p < .0005$). A few of the respondents $n=66$ (14.9%) were uncertain with $n=47$ (10.6%) who disagreed that a person needs to go to the health care provider if the HIVST is positive.

A considerable number of the sample $n=192$ (43.4%) were not sure whether it is painful to perform the HIVST or not ($\chi^2(2) = 49.873$, $p < .0005$), compared to $n=170$ (38.5%) who disagreed that it is painful to perform an HIVST. Few respondents $n=78$ (17.6%) agreed that it is painful to perform the HIVST. Two respondents did not answer this question.

The majority of respondents $n=216$ (48.9%) were not sure if there is an available telephone hotline to call should the test be positive ($\chi^2(2) = 56.748$, $p < .0005$). A significant number of respondents $n=137$ (31.0%) agreed that there is a telephone hotline to call should a test be positive, while a few respondents $n=88$ (19.9%) indicated their knowledge that there is no telephone hotline to call should the test be positive. One respondent did not answer the question.

A substantial number of respondents $n=292$ (66.1%) indicated that a person needs to be counselled by the HIV counsellor at a clinic before taking an HIV test ($\chi^2(2) = 214.626$, $p < .0005$). A small number of respondents $n=77$ (17.4%) disagreed that a person needs counselling at the clinic before taking the HIVST and $n=72$ (16.3%) were not sure. One respondent did not answer the question.

A significant number of respondents $n=320$ (72.4%) knew that a person needs to be counselled by an HIV counsellor after taking the test ($\chi^2(2) = 303.751$, $p < .0005$). A few respondents $n=65$ (14.7%) disagreed and $n=57$ (12.9%) were not sure. A significant number of respondents $n=175$ (39.6%) possessed the knowledge that a person needs to sign consent before taking an HIVST ($\chi^2(2)$

=9.361, $p=0.009$), while $n=143$ (32.4%) had knowledge that a person does not need to sign a consent form before HIVST. Some $n=123$ (27.8%) were not sure. One respondent did not answer this question.

5.7 SECTION 3: ATTITUDES OF HEALTH CARE USERS TOWARDS HIVST AND LINKAGE TO CARE

The respondents were asked to use a Likert scale rating from strongly disagree, disagree, neutral, agree to strongly agree to rate their agreement or disagreement regarding HIVST and linkage to care. It was observed that the levels for agreement were greater than those for disagreement for all statements on the scale. The results are illustrated in Figure 5.10. There was a significant agreement that HIVST is a good idea ($M=3.65$, $SD=1.289$), $t(441)=10.630$, $p<0.0005$.

The respondents were also in agreement that they could do an HIVST at home ($M=3.64$, $SD=1.148$), $t(439)=11.639$, $p<0.0005$. There was strong disagreement that respondents would find the HIVST procedure difficult to perform ($M=2.76$, $SD=1.123$), $t(441)=-4.496$, $p<0.0005$. A significant number of respondents were in agreement that they would prefer to be alone when they perform an HIVST ($M=3.54$, $SD=1.234$), $t(441)=9.187$, $p<0.0005$. One respondent did not answer this question.

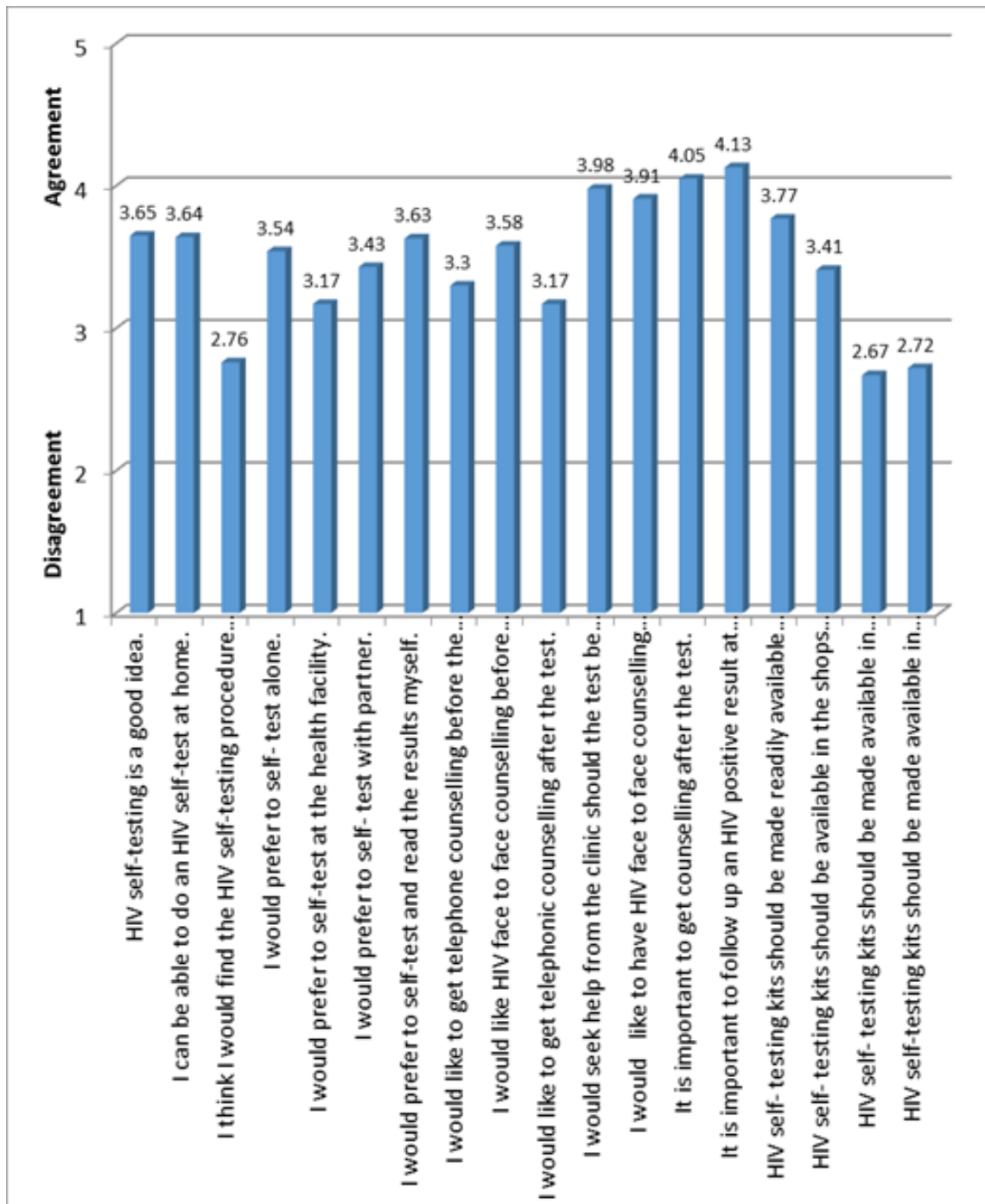


Figure 5.10: Attitudes of health care users towards HIVST and linkage to care

A significant number of respondents were in agreement that they would prefer to perform the HIVST at a health facility ($M=3.17$, $SD=1.218$), $t(440)=2.858$, $p<.0005$. Two respondents did not answer this question. Self-testing with a partner was preferred by most respondents ($M=3.43$, $SD=1.219$), $t(441)$

=7.420, $p < .0005$. One respondent did not answer this question. There was strong agreement that respondents would prefer to self-test and read results themselves ($M = 3.63$, $SD = 1.173$), $t(441) = 11.206$, $p < .0005$.

Most respondents indicated that they would prefer to get telephone counselling before HIVST ($M = 3.30$, $SD = 1.234$), $t(441) = 5.055$, $p < .0005$. Similarly, a significant number of respondents were in agreement that they would prefer to have face-to-face counselling before the HIVST ($M = 3.58$, $SD = 1.157$), $t(440) = 10.511$, $p < .0005$. Two respondents did not answer this question. The majority of the sample ($M = 3.17$, $SD = 1.254$), $t(441) = 2.847$, $p < .0005$ were in agreement that they would like to get telephonic counselling after the HIVST.

Seeking help from the clinic should the test be positive was agreed upon by a significant number of respondents ($M = 3.98$, $SD = 1.059$), $t(441) = 19.374$, $p < .0005$. One respondent did not answer this question. The importance of getting counselling after the HIVST was rated high by most of the participants ($M = 4.05$, $SD = .995$), $t(442) = 22.173$, $p < .0005$. Follow-up of an HIV positive result at the clinic was indicated as important for most of the respondents ($M = 4.13$, $SD = .934$), $t(441) = 25.397$, $p < .0005$. One respondent did not answer this question.

There was strong agreement that HIVST kits should be made readily available to people ($M = 3.77$, $SD = 1.092$), $t(439) = 14.855$, $p < .0005$. There was also significant agreement that HIVST kits should be available in shops and on the internet ($M = 3.41$, $SD = 1.239$), $t(442) = 7.077$, $p < .0005$. There was disagreement that HIVST kits should be available in pharmacies only ($M = 2.67$, $SD = 1.197$), $t(442) = -5.764$, $p < .0005$. Likewise, there was significant disagreement that HIVST kits should be available in clinics only ($M = 2.72$, $SD = 1.229$), $t(440) = -4.847$, $p < .0005$.

5.8 SECTION 4: ATTITUDES OF HEALTH CARE USERS TOWARDS DISCLOSURE OF HIV POSITIVE STATUS

Attitudes of health care users towards HIV positive status disclosure is depicted in Figure 5.11. There was reasonable agreement from respondents that an HIV test should be a total secret ($M=3.28$, $SD=1.225$), $t(442)=4.437$, $p<.0005$ and that an HIV positive person should tell their sex partner only ($M=3.31$, $SD=1.329$), $t(441)=5.325$, $p<.0005$. There was strong agreement that HIV positive people should inform all significant others ($M=3.31$, $SD=1.202$), $t(440)=5.197$, $p<.0005$ and people should talk openly about it ($M=3.64$, $SD=1.088$), $t(442)=12.375$, $p<.0005$.

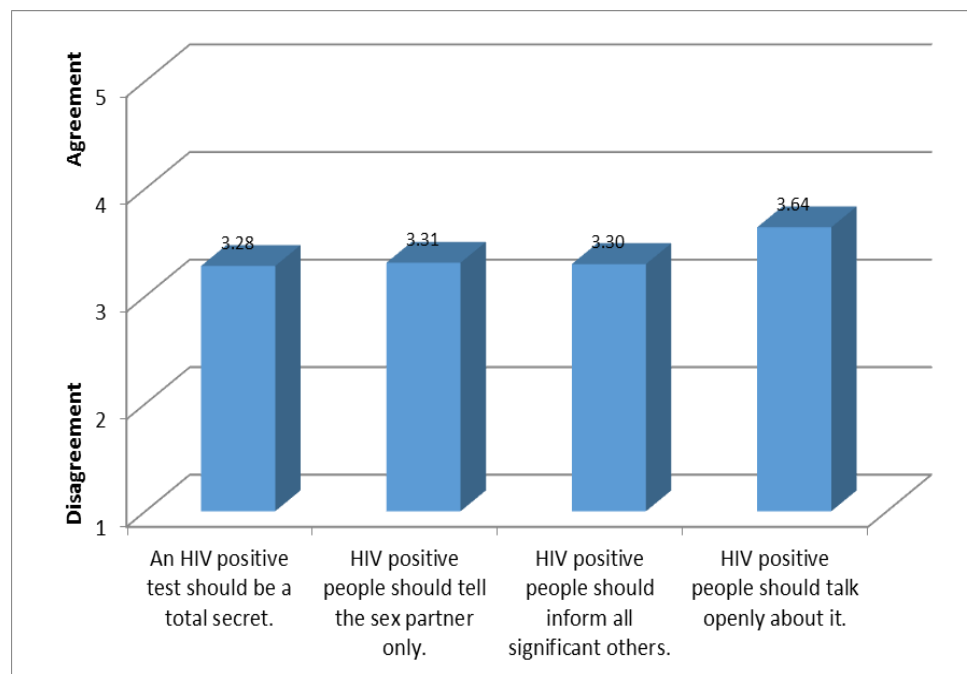


Figure 5.11: Attitudes of health care users towards disclosure of HIV positive status

5.9 SECTION 5: PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST

Perceptions of health care users towards HIVST are graphically represented in Figure 5.12. The respondents were asked to indicate whether they strongly disagree, disagree, are neutral, agree or strongly agree to statements related to perceptions towards HIVST. It was observed that the levels of agreement were greater than those for disagreement for all statements on the scale.

There was significant agreement that HIVST ensures privacy ($M=3.63$, $SD=1.107$), $t(440) = 12.014$, $p<.0005$ and that there is less time spent in clinics and hospitals ($M=3.54$, $SD=1.138$), $t(441) = 10.046$, $p<.0005$. There was also strong agreement that more people can know their HIV status ($M=4.03$, $SD=.969$), $t(442) = 22.422$, $p<.0005$. Respondents were in agreement that people who may be scared to visit the clinic can test at home ($M=3.88$, $SD=1.128$), $t(442) = 16.410$, $p<.0005$. People can get ARV's before they can get any sicker ($M=3.92$, $SD = 1.095$), $t(441) = 17.564$, $p<.0005$. There could be less transmission to other people if they know their HIV status ($M=3.94$, $SD=1.021$), $t(442) = 19.429$, $p<.0005$. People could get tested more frequently ($M=4.03$, $SD=.943$), $t(441) = 22.968$, $p<.0005$.

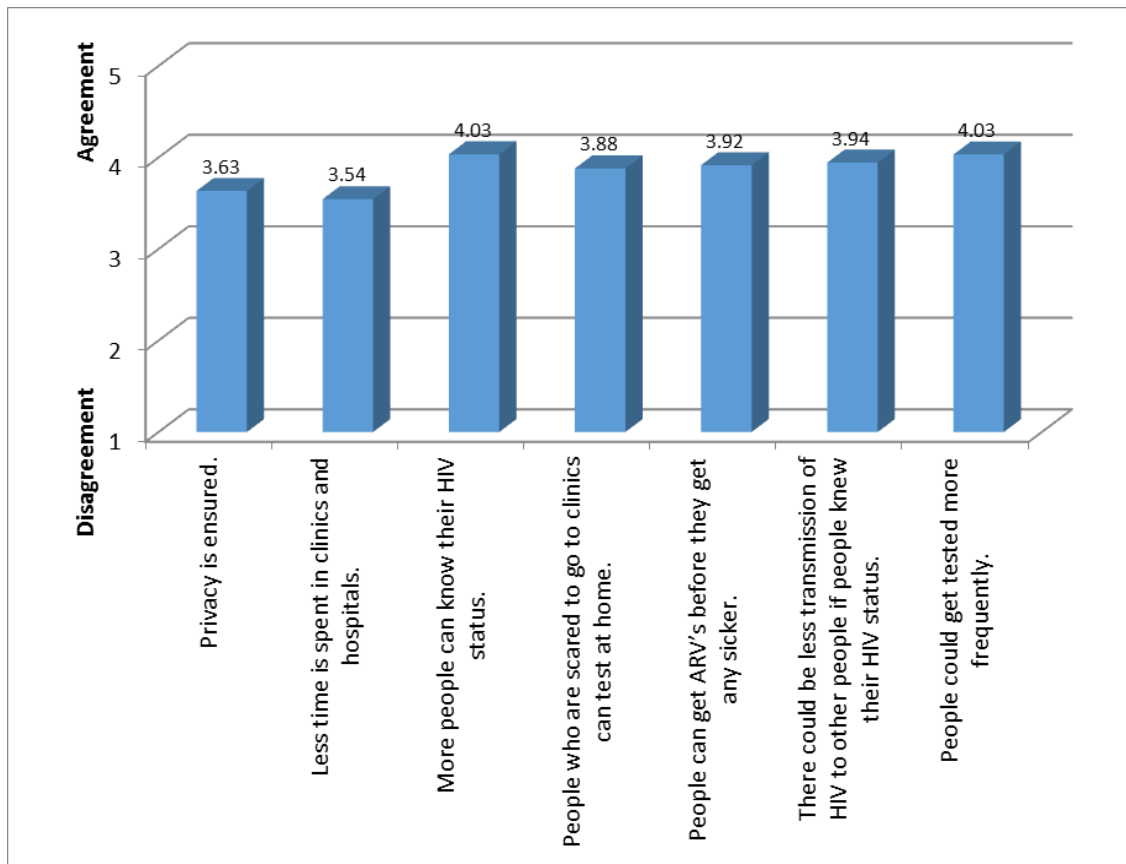


Figure 5.12: Perceptions of health care users towards HIVST

Perceptions of health care users towards HIVST are further illustrated in Figure 5.13. There was agreement that people could read or interpret results incorrectly ($M=3.58$, $SD=1.109$), $t(441) = 10.990$, $p < .0005$. The majority of respondents also agreed that people may not be able to read and understand the instructions properly ($M=3.59$, $SD=1.093$), $t(442) = 11.403$, $p < .0005$. The respondents indicated that people could intentionally infect others if not counselled properly before the test ($M=3.67$, $SD=1.081$), $t(442) = 13.067$, $p < .0005$. A significant number of respondents were in agreement that children and workers could be tested against their will ($M=3.34$, $SD=1.212$), $t(441) = 5.853$, $p < .0005$ and family members could also be tested against their will which could result in abuse ($M=3.20$, $SD = 1.273$) $t(442) = 3.288$, $p < .0005$.

There was significant agreement from respondents that a person may try to commit suicide if the test is HIV positive and no HIV counselling was received ($M=3.67$, $SD=1.264$), $t(441)=9.408$, $p<.0005$. It was indicated by a majority of respondents that unreliable HIVST kits could be sold thus giving wrong results if not properly regulated by the government ($M=3.67$, $SD=1.273$), $t(442)=11.131$, $p<.0005$.

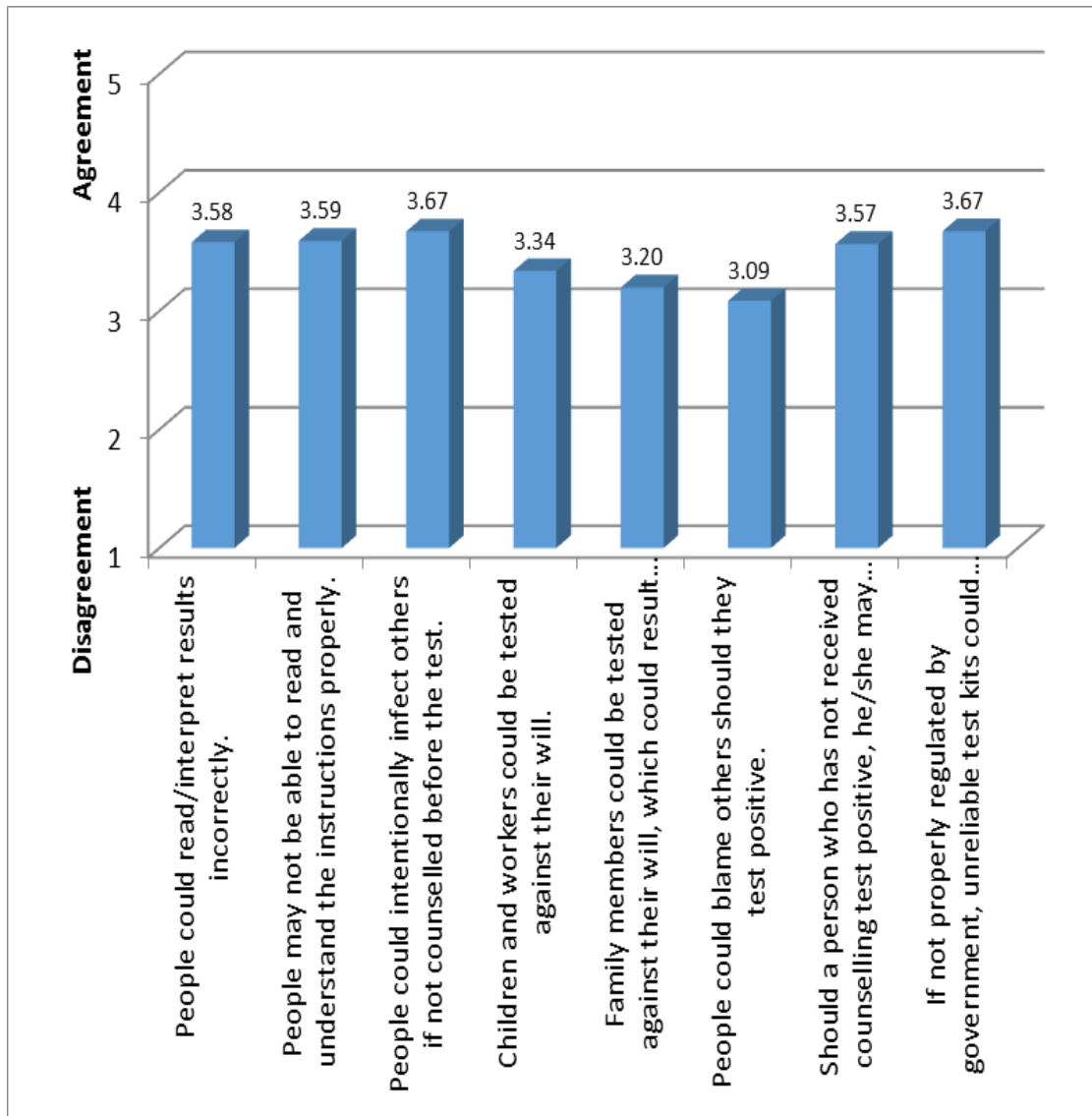


Figure 5.13: Perceptions of health care users towards HIVST

5.10 RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST

The third objective of the study was to establish if there is any relationship between knowledge, attitudes and perceptions of health care users towards HIVST. Pearson's correlation is the analysis that was used to test the relationship between knowledge, attitudes and perceptions of health care users towards HIVST. This is illustrated in Table 5.2. The study results indicated that there was a weak positive correlation between knowledge and attitudes of health care users towards HIVST. This means that health care users' greater knowledge of HIVST was associated with greater positive attitudes towards HIVST.

There was a weak positive correlation between knowledge and that HIVST was a good idea ($r=.202$; $p<.0005$), ($r=.200$; $p<.0005$), that they can be able to perform an HIVST and that they did not think they would find the HIVST procedure difficult to perform ($r=.161$; $p<.0005$). A further weak positive correlation between knowledge and testing preference was identified where health care users would prefer to self-test alone ($r=.102$; $p<.0005$) and that would prefer to test with a partner ($r=.128$; $p<.0005$). Furthermore, there was a weak positive correlation between knowledge and those that would prefer to self-test and read the results themselves ($r=.158$; $p<.0005$). Another weak positive correlation was identified between knowledge and a strong agreement on the importance of getting counselling after the HIV test ($r=.165$; $p<.0005$), and strong agreement that it is important to follow up an HIV positive result at the clinic ($r=.157$; $p<.0005$). A weak positive correlation was found between knowledge and availability, as ($r=.135$; $p<.0005$) were in agreement that HIVST kits should be made readily available to people while ($r=.142$; $p<.0005$) were in agreement that HIVST kits should be available in the shops and on the internet compared to ($r=.185$ $p<.0005$) who were in agreement that HIVST kits should be made available in clinics only.

Table 5.2: Correlations between knowledge, attitudes and perceptions towards HIVST

		Health care users' knowledge of HIVST	Attitudes of health care users towards HIVST	Perceptions of health care users towards HIVST
Knowledge	Pearson Correlation	1	.202**	.179**
	Sig. (2-tailed)		.000	.000
	N	442	442	442

The study results further indicated a weak correlation between knowledge and perceptions of HIVST ($r=.179$; $p<.0005$). This means that health care users possessed greater knowledge which is associated with more agreements on perceptions towards HIVST. There was a weak positive association between knowledge and perception that less time is spent at the clinic or hospital ($r=.121$; $p<.0005$). There was also a weak correlation between knowledge and agreement that more people can know their HIV status ($r=.105$; $p<.0005$) and that people who are scared to go to clinics can test at home ($r=.159$; $p<.0005$). Conversely, a weak positive correlation existed between knowledge and agreement that people can get ARV's before they get any sicker ($r=.105$; $p<.0005$). Lastly, a weak positive correlation between knowledge and agreement that there could be less transmission of HIV to other people if people knew their HIV status ($r=.179$; $p<.0005$).

5.11 SUMMARY OF THE CHAPTER

This chapter presented the findings and statistical analysis of data. The findings included personal information of respondents, knowledge of HIVST, attitudes and perceptions of HIVST and linkage to care, attitudes about HIV positive status disclosure and perceptions of health care users towards HIVST. The next chapter will provide a detailed discussion of the results explaining knowledge, attitudes and perceptions of health care users towards HIVST and establishing if there is any relationship between knowledge, attitudes and perceptions towards HIVST.

CHAPTER 6 : DISCUSSION OF RESULTS

6.1 INTRODUCTION

This chapter will provide a detailed discussion of the study results and make conclusions arising from the findings from the study regarding the knowledge, attitudes and perceptions of health care users towards HIVST.

6.2 OVERVIEW OF RESEARCH DISCUSSION

The discussion will focus on the following aspects:

- Personal information.
- Health care users' knowledge HIVST.
- Attitudes of health care users towards HIVST and linkage to care.
- Attitudes of health care users towards HIV positive status disclosure.
- Perceptions of health care users towards HIVST.

The discussion will also include Ajzen's Theory of Planned Behaviour (1991) which guided the study. Determinants highlighted in the Theory of Planned Behaviour that can influence a person negatively or positively towards a certain behaviour used in the study are:

- Attitudes;
- Knowledge; and
- Perceptions.

6.3 PERSONAL INFORMATION

6.3.1 Gender

The majority of respondents were females (68.8%) with males accounting for 30.1%. This indicated that most health care users coming to the Gateway clinics for various services such as fertility regulation, well baby clinics, minor

ailments, collecting chronic medication etc. were females. Women and men make unequal use of public health facilities and women make more contacts due to the needs mentioned above. Health care services are believed not to be male user-friendly, hence males may benefit from HIVST (Makusha *et al.* 2015: 8; WHO 2016:17). These results concur with those of a study conducted in South Africa on preferences of HIV testing where the majority of participants were female (68.5%) (van Dyk 2013b: 43). In the study conducted among health care workers in South Africa by Pant Pai *et al.* (2013: 5), more participants (78.1%) were female compared to male.

6.3.2 Age of respondents

The largest age range group was 18-29 years of age n=188 (42.5%). This finding is similar to that of Pant Pai *et al.* (2013:5) who found that a total of 61.4% of participants in their study of South African health care workers was the same age range group.

6.3.3 Home language

The majority of respondents were isiZulu speaking (73.3%). According to Statistics South Africa (2011: 24), isiZulu is the most frequently spoken language in South African households. This is particularly so in KZN as 11 519 234 (77.8%) people speak isiZulu (2011: 24). The language spoken by a majority of respondents has implications for HIVST as indicated in a study conducted by Madiba, Sebogola and Mokgatle (2015: 214). The findings in their study concluded that self-testing instructional materials should be easy to read and understand in the person's own language. This means that there should be isiZulu language HIVST instructional material in the HIVST kits, should they be legalised.

6.3.4 Religious affiliation

The majority of respondents were predominantly Christians (76.5%). This study result concurs with findings of the study conducted by Szaflarski *et al.* (2013:1839) in the Greater Cincinnati area aimed at examining the level of HIV prevention strategies and testing. The findings were that the congregation that participated in the study were mostly Protestants and Catholics. The findings of this study further identified that this religious affiliation promoted HIV prevention and testing Szaflarski *et al.* (2013: 1845).

6.3.5 Educational level

The educational standard of a person has an influence on HIVST as a person needs to read, understand and follow instructions before performing the HIVST. The majority of respondents (60.2%) had some or all high school education which could enable them to be able to follow the instructions to perform the HIVST. This level of education should be sufficient to facilitate HIVST, according to Pan Pai *et al.* (2013: 11). These authors conducted a systematic review study to evaluate supervised and unsupervised HIVST in high and low-risk populations. One of their findings was that HIVST involves a certain level of independence and basic level of literacy typically from Grade 6 or high school to ensure confidence in conducting the test.

6.3.6 Marital status

The study results showed that most respondents (62.2%) were not married. In a study conducted by Hoyos *et al.* and the Madrid Rapid HIV testing Group (2013: 3) to determine preferred HIV testing services and programme characteristics among clients of a rapid HIV testing programme, similar findings were revealed. In that study most participants were single (91.8%).

6.3.7 Residence

The results of the study showed that the respondents were mostly residing in townships (46.4%) whilst (27%) resided in urban areas. These results harmonise with findings of the study conducted by van Dyk in South Africa to determine if HIVST can increase the uptake of HIVST. Most participants in that study (78.7%) were from cities and towns van Dyk (2013b:42).

6.3.8 Occupation

The majority of respondents in this study were working (41.6%) compared to those who were unemployed (39.6%). These results indicate a larger number of unemployed health care users compared to findings of the study conducted by van Dyk (2013b: 44) in South Africa where only 16.8% of participants were unemployed. Employment has implications for HIVST as the unemployed population may not be able to afford purchasing HIVST kits unless they are made available for free. The cost factor has been identified as a potential barrier to accessing HIVST (Brown *et al.* 2014: 10). However, in a study conducted by Mokgatle and Madiba (2017: 10) among students from poor resourced settings, willingness to purchase the HIVST was identified.

6.4 HEALTH CARE USERS' KNOWLEDGE OF HIVST

The first objective of the study was to determine health care users' knowledge of HIVST. The study was guided by Ajzen's (1991) Theory of Planned Behaviour which states that in order for a person to make a decision to perform a behaviour, he/she needs to have sufficient information about the intended behaviour (Ajzen 1991: 180). The researcher assessed the knowledge aspect of HIVST in this study because sufficient knowledge of HIVST and the HIVST procedure can determine whether a person can test or not.

The questionnaire required the responses agree, disagree or not sure. The results of the study as laid out in Chapter 5 revealed that the majority of respondents possessed knowledge of HIVST as they have heard about it. The results are in line with Theory of Planned Behaviour (Ajzen 1991: 189), that behaviour is a function of salient knowledge which influences attitudes and perceptions towards behaviour. If people have knowledge about HIVST, they are more likely to make informed decisions regarding whether they accept it or not. The study results are supported by a study conducted by Hurt *et al.* (2016: 587) who conducted a study among young black MSM in North Carolina. An online survey was used to investigate testing practices and interest in self-testing among young (18-30 year old) HIV-uninfected MSM. These authors had an interest in this group due to their relatively high risk of HIV infection and there being little known about their HIV testing behaviours and preferences regarding self-testing (Hurt *et al.* 2016: 587). The study found that participants with no main sex partner were more likely to have heard of HIVST and indicated greater probability of buying one in the future. Men with higher partner turnover may be more attuned to the need for frequent HIV testing and be willing to explore new options (Hurt *et al.* 2016: 592).

The results of the current study are also in harmony with those of Mokgatle and Madiba (2017: 9) who conducted a study regarding acceptability of HIVST among Technical Vocational Education and Training College (TVET) students in Gauteng and North West province in South Africa. They found that only less than half of the TVET students were not aware of HIVST before the study (Mokgatle and Madiba 2017: 9). Media advertising can be utilised to increase awareness and knowledge of HIVST among health care users as lack of adequate knowledge can be a barrier to acceptability of HIVST (Pal *et al.* 2016: 7; Heard and Brown 2016: 1).

The results of the current study revealed that the majority of respondents had never seen (65.6%), used (73.3%) nor read (49.9%) about the HIVST. These findings harmonise with the findings of the study conducted in Australia where

only just over one-third of gay respondents were aware of the availability of HIVST HIV (Prestage *et al.* 2016: 59). Gay men who were aware that HIVST was available were better educated, younger, and more socially engaged with other gay men. They were less likely to have ever been tested for HIV (Prestage *et al.* 2016: 59). In a similar study conducted by Pal *et al.* (2016: 4), assessing acceptability of HIVST among transgender women, MSM, and female entertainment workers in Cambodia, practically all participants had never heard about HIVST (Pal *et al.* 2016: 4).

HIVST has not been legalised in South Africa. The study results indicate that only 29.4% of respondents had knowledge that HIVST is not legalised in South Africa. Although HIVST has not been legalised in South Africa, the sale of kits has been officialised since February 2016 (Mkhwanazi 2016: 5) and they are now available in selected pharmacies countrywide. The SAPC abolished restrictions on the sale of HIVST on the 23rd December 2016 (Child 2017: 7). Despite the availability of HIVST kits in pharmacies, they are not yet legalised and promulgated to be used because there are no policy guidelines regulating their use (Makusha *et. al* 2015: 8). This is the case too with countries such as France and Australia (Williams *et al.* 2016: 1) where HIVST is neither supported nor legalised. Countries such as the United Kingdom and United States of America (Allais and Venter 2014: 433) have promulgated the use of HIVST. The first HIVST kit went on sale in the United Kingdom in April 2014 (Peate 2015: 663). Kenya was the first African country to develop guidelines regarding the use of over-the-counter HIV self-implemented testing kits for the general public (Ministry of Public Health and Sanitation 2008: 5).

The study findings indicate that most of the respondents (41%) possessed knowledge that HIVST kits were available from private pharmacies although 38.2% of them were not sure whether they were available from private pharmacies or not.

A significant percentage n=164 (37.1%) of respondents were not sure whether HIVST kits are available from government health institutions. This is compared to n=136 (30.8%) who agreed that HIVST kits are available in government clinics and hospitals. In Kenya, a study was conducted to assess public readiness for HIV self-testing and results demonstrated that respondents would prefer public health services to make HIVST kits available to the communities (Heard and Brown 2016:3).

Witzel *et al.* (2016: 10) conducted a study among MSM in the United Kingdom to explore barriers and facilitators, intervention preferences and perceived impacts. They established that there was low willingness to pay for HIVST. These findings concur with findings of the study conducted by Estem, Catania and Klausner (2016: 111), who concluded that potential self-testers were not willing to pay for HIVST. In contrast, Mokgatle and Madiba (2017: 10) found that three-quarters of students and trainee nurses from South African poor resourced settings reported willingness to purchase HIVST kits. In a study conducted in France among MSM recommendations were that HIVST kits should be available for free in health care centres especially for the key populations (Greacen *et al.* 2016: 7).

Lack of knowledge that HIVST kits are available from the internet was revealed in the study. HIVST kits are available from unregulated and unofficial online retailers from various internet websites. However, there are approved online sites such as 'Takealot' which sell WHO approved HIVST home kits that use a pinprick of blood to yield results within 15 minutes (Child 2017: 7). A study on implications of the online market for regulation and uptake of HIVST in Australia was conducted by Williams *et al.* (2016: 1). The aim of the study was to assess purchased kits in terms of the structured extraction tool based on the Australian Therapeutic Guidelines. It was found that of the eight HIVST kits purchased online, only two conformed to the guidelines and two were received having reached the expiry date. This revealed a need to

regulate online sale of HIVST kits, as sale of unregulated HIVST kits could lead to misleading and wrong test results (Williams *et al.* 2016: 7).

The results of the study further demonstrated that respondents had adequate knowledge that HIVST is conducted using blood with less knowledge that it can also be performed using saliva. Currently, only one oral HIVST kit has been approved by the United States FDA to facilitate increased HIV testing and linkage to care (Estem, Catania and Klausner 2016: 107). In previous studies, doubts about the use of saliva and the accuracy thereof have been argued. The oral HIVST is believed to be 92%-99% accurate if performed properly (Cambiano *et al.* 2014: 6; Choko *et al.* 2015: 15; Ng *et al.* 2012: 6). The use of social media and television can increase knowledge of HIVST and possibly promote the visibility of HIVST strategy using blood or saliva (Pant Pai *et al.* 2013: 1; Pal *et al.* 2016: 7).

HIVST can be performed at home and results of the study indicated that a significant percentage (66.5%) of respondents indicated that HIVST is done at home. There are different approaches available such as community or facility based and unsupervised HIVST (WHO/UNAIDS 2014: 6). Bilardi *et al.* (2013: 2093) conducted a study to determine gay and bisexual men's views on HIVST in Australia. The findings were that it was quick, convenient, private and discrete as it is performed in the comfort of one's home (Bilardi *et al.* 2013: 2098).

Knowledge deficit was demonstrated as study results revealed that the majority of respondents (43.7%) indicated that HIVST is conducted at the clinic or hospital. This would be the case the supervised model of HIVST, where the person performs HIVST under the supervision of a health care worker. Sarkar *et al.* (2016: 7) conducted a study among pregnant women in a rural Indian hospital to assess the feasibility of supervised self-testing using an oral fluid-based HIV test. Participants were given instructions on how to self-test using OraQuick HIV antibody test and consequently asked to self-test

under supervision of a community health worker. Findings were that women in supervised HIVST felt more confident with less anxiety and possible mistakes compared to unsupervised HIVST (Sarkar *et al.* 2016: 7).

The majority of respondents (68.1%) were in agreement that a person can perform the test on herself or himself. This finding harmonises with findings of the study conducted by Dong *et al.* (2014: 1) in rural KZN. The study found that laypersons were able to successfully perform the HIVST using blood. This was accomplished through the use of the HIV helpline for assistance during self-testing. Another study conducted by Knight *et al.* (2014: 1), also in KZN, yielded similar findings. The study was conducted among lay persons to assess acceptability of HIVST. The response indicated that participants found it easy to perform the HIVST and demonstrated readiness to use HIVST in future (Knight *et al.* 2014: 1).

A significant percentage (57%) of respondents was not sure how long it takes to get results from the HIVST. It takes less than an hour (about 20-40 minutes) to get results from the HIVST (FDA 2014: 1). This is important knowledge because failure to observe the required time might lead to inaccurate results (Mokgatle and Madiba 2017: 11). Proper reading of instructions and following them is important to get accurate results of the HIVST. The use of instructional videos and pamphlets can assist in successfully conducting unsupervised HIVST, thus ensuring time of test completion is adhered to (Mokgatle and Madiba 2017: 11).

Results of the study revealed that there was uncertainty whether the HIVST result can be negative if the infection occurred less than three months previously. The period between HIV infection and the detection of HIV-1/2 antibodies using serological assays, which signals the end of the seroconversion period, is called the window period. The HIV antibody test is falsely negative during the first twelve weeks after infection (van Dyk 2013a: 98; Peate 2015: 663; WHO 2015: 17; FDA 2014: 1). Additionally, the FDA

(2014: 2) stresses that the OraQuick test may give about one false negative result out of every 12 HIVSTs performed in HIV sero-converted persons. The FDA (2014: 2) further approved the first rapid HIV test for the simultaneous detection of HIV-1 p24 antigen as well as antibodies to both HIV-1 and HIV-2 in 2013. This makes earlier detection of HIV-1 possible through detection of the antigen of the HIV-1 infection possible, so there is no need to rely on testing for antibodies only. In a study conducted by Pant Pai *et al.* (2013: 5) in South Africa among health care workers, findings revealed that out of the 270 participants of the study, four participants self-reported their results as HIV negative. On confirmation with laboratory tests, they were found to be falsely negative. This concern regarding the possibility of false negative results has also been raised by Peate (2015: 663).

Results of the study further revealed that participants possessed knowledge that re-testing after three months is necessary if the test is negative. However, the WHO Testing Guidelines warn that it is not recommended that all people who have a non-reactive test result should return for re-testing to rule out acute infection that is too early for the test to detect (WHO 2015: 25). It is further emphasised that re-testing is desirable only for HIV negative persons who report recent or continuing risk of exposure. For the majority of people who test HIV negative, additional re-testing to rule out being in the window period is not necessary and may waste resources (WHO 2015: 25).

The study results revealed that most of the respondents indicated a need to go to a health care provider if the HIVST is positive. According to the WHO, HIVST does not provide an absolute diagnosis. It is regarded as a screening test and therefore a positive test warrants a visit to a health care provider to confirm the initial result (WHO 2015: 55). These findings are congruent with findings of the study conducted by Figueroa *et al.* (2015:1961) who reported that more than 80% of participants with a potential or an actual HIV positive test result stated that they would seek confirmatory HIV testing and care. These authors further recommended that more research to determine linkage

to care and treatment be conducted, especially among key populations, as evidence in this regard is limited.

The majority of respondents (43.4%) indicated that they were not sure whether it is painful to perform the HIVST or not. HIVST can be performed using a finger prick to obtain blood which can be painful (FDA 2014:1). Saliva may also be used, for example OraQuick as approved by FDA, which is not painful. These findings are analogous with findings of the study conducted by Pal *et al.* (2016: 7) in Cambodia aimed at determining the acceptability of HIVST among key populations. Findings were that participants raised concerns about pain during testing. One of the identified barriers to HIV testing among adolescents in a study conducted by Strauss, Rhodes and George (2015: 9) in KZN was aversion to needles, leading to HIV testing hesitancy. Recommendations from the study findings were to make available alternative tests such as oral HIVST kits as these do not require blood. The authors further recommended education programmes to avert misinformation as to how the tests work and the choices available (Strauss, Rhodes and George 2015: 9).

Lack of knowledge was demonstrated on availability of a telephone hotline as results of the study indicated that respondents agreed that there is a telephone hotline to call should the test be positive. Currently, in South Africa there is no telephone hotline to call should the HIVST results be positive (Makusha *et al* 2015:8) In other countries such as China, there is an anonymous 24-hour online HIV test scheduler called 'Easy Tell' (WHO 2015: 19) where self-testers can call regarding HIVST. In a South African study conducted by van Dyk 2013b: 47) on HIVST as a self-testing strategy, a concern was raised about the use of telephone counselling as some poorly resourced countries may have limited access to telephones and the concept of a 'telephone' might be unknown. The study results correspondingly indicated that respondents possessed knowledge that a person needs to be counselled before and after the HIVST. This need not necessarily be at a

clinic. Counselling before the HIVST has been identified as the most important aspect of ensuring readiness for the results (WHO 2015: 21). Counselling can be done at the clinic or pharmacy when the person purchases the HIVST kit. The South African Department of Health has not yet issued guidelines on pre-test counselling for HIVST (Department of Health 2015: 13) as it is currently not recommended and supported even though these are available from private pharmacies (Child 2017: 7).

The majority of respondents demonstrated knowledge that a person needs to sign a consent form before HIVST. Informed consent remains one of the essential elements of HIV testing models including HIVST (WHO 2015: 24). Persons undertaking HIVST should have adequate knowledge of HIVST procedure and its implications. Consent should always be obtained individually and in private by an HIV counsellor in other models of testing. According to WHO (2015:24) verbal consent for HIV testing is sufficient in most settings. Informed consent would be essential in supervised models of HIVST (WHO 2015: 24).

6.5 ATTITUDES OF HEALTH CARE USERS TOWARDS HIVST AND LINKAGE TO CARE

The second objective of the study was to assess health care users' attitudes and perceptions towards HIVST. According to the Theory of Planned Behaviour (Ajzen 1991), an attitude is the personal evaluation of the intended behaviour leading the person to favour or not favour the intended behaviour. (Ajzen 1991:188). Aspects that were determined in this study through the use of a questionnaire were health care users' attitudes and perceptions towards HIVST. Attitudes are important as they can deter or encourage the person to favour or not favour HIVST (Ajzen 1991:188).

The results of this study revealed that many health care users perceived HIVST as a good idea. This result concurs with findings of many documented studies where it was established that HIVST was acceptable among general and key populations. In a study conducted by Heard and Brown (2016: 4) in Kenya to assess public readiness for HIVST in Kenya, the findings suggested that the vast majority of respondents felt HIVST was a good idea and would use it. In this study there was no difference in gender preferences. In a similar study conducted by Pant Pai *et al.* (2013: 7) to assess use of supervised and unsupervised self-testing for HIV in high- and low-risk populations, findings indicated that there was more acceptance of supervised than unsupervised HIVST from participants. A recommendation from the above study was made for more research to be conducted on supervised HIVST. These findings were also analogous with findings of Marlin *et al.* (2014: 6) and Perez *et al.* (2016:10). Reasons such as confidentiality, convenience, fear of stigma, and privacy (Mavedzenge *et al.* 2013: 136), have been cited as reasons for why HIVST has been seen as a good idea.

Most respondents did not perceive that they would find the HIVST procedure difficult to perform and thought they would be able to do it at home. This was in contrast with most of the studies as participants usually find the testing procedure complicated which accounted for errors during testing (Marley *et al.* (2014: 10). Inaccuracies could be reduced through educational workshops and media education and the development of simpler operational steps on how to operate the test kit and interpret results. Videos that take testers through the steps in testing could be useful as well (Marley *et al.* 2014: 10).

Results of the study further indicated that testing on their own would be preferred by most respondents. This concurs with findings of the study conducted by Young *et al.* (2014: 3) to determine acceptability of using electronic vending machines to deliver Oral Rapid HIVST kits among MSM. The findings indicated that participants preferred to perform HIVST alone in

private spaces such as in the bathroom, bedroom or car (Young *et al.* 2014: 3).

A notable percentage of respondents indicated that they would prefer to perform HIVST at a health facility. According to the WHO, this strategy is called supervised HIVST. In supervised HIVST, the health care worker or volunteer offers support to the person intending to perform the test. It could be in a form of pre- and post-test counselling or demonstration on how to correctly perform the test. Referral to appropriate health care should be encouraged should an HIV test be positive (WHO/UNAIDS 2014: 6). The findings are in accord with findings of the study conducted by Sarkar *et al.* (2016: 8) to evaluate the feasibility of supervised self-testing using oral fluid based HIVST among pregnant women in India. Supervised HIVST was conducted under the supervision of community health workers such as auxiliary midwives. Perceived benefits from supervised HIVST include having the assurance of practical and on the spot support immediately following self-testing. Another benefit was overcoming of illiteracy barriers for some participants. Lastly, all participants were directly linked to pre- and post-test counselling as well as referral for test confirmation if the test was positive (Sarkar *et al.* 2016: 8).

In a study in Uganda conducted by Asiimwe *et al.* (2014: 2483), a less than 10-minute training was given to potential participants just before HIVST. The aim of the study was to estimate the accuracy of unsupervised versus provider supervised HIVST. Demonstration was provided in the research clinic as per kit package insert which was re-read in the participant's local language by the research staff. Supervised HIVST improved the confidence of the self-testers and thus there were fewer mistakes made, with achievement of 100% accuracy and 100% sensitivity success rate in performing the test. Nonetheless, a concern was raised that it may not be feasible to have a health care worker every time an HIVST kit is used in real life (Asiimwe *et al.* 2014: 7).

A significant percentage of respondents (40.7%) agreed and 18.6% strongly agreed that they would prefer testing with a partner. The WHO recommends encouragement of people with HIV to notify their partners of their HIV status (WHO 2016: 2). These findings harmonise with results of the study conducted by Mokgatle and Madiba (2017: 9), which was conducted to assess acceptability of HIVST among students in TVET colleges. The study identified that 84% of students indicated their preference to utilise HIVST with partners. In another study conducted in Kenya by Kalibala *et al.* (2014: 3) among health care workers to investigate HIVST acceptability, it was found that among participants who took the HIVST kit who had partners, 73% of participants gave the kit to their partners and 86% of them indicated that their partner self-tested. Doing an HIVST with partners present was found to be acceptable to the partners as well (Kalibala *et al.* 2014:3; Chiu and Young 2016: 4).

The study results further revealed that a noticeable percentage (67.2%) of respondents would prefer to self-test and read results by themselves. This finding synchronises with the findings of the study conducted by Young *et al.* (2014: 3) who conducted a study to determine acceptability of using electronic vending machines to deliver Oral Rapid HIVST Kits among MSM. The findings were that participants took the test and read the results themselves (Young *et al.* 2014: 3).

A significant number of respondents indicated that they would seek counselling either face-to-face or telephonically before and after the test. According to the WHO (2015: 21), an individual risk assessment and individualised counselling during a pre-test information session is no longer recommended. Depending on local conditions and resources, programmes may provide pre-test information through individual or group information sessions and through media such as posters, brochures, short video clips and websites shown in waiting rooms (WHO 2015: 21). Similar results were found in a study conducted by van Dyk (2013b: 47) where it was identified that the majority of participants preferred telephonic counselling than face-to-face

counselling due to fears of being judged by the counsellor. The author also warned that an individual's right to refuse counselling must be respected as individuals are autonomous (van Dyk (2013b: 47). Similar findings were established in a study conducted by Madiba, Sebogola and Mokgatle (2015: 214) among student nurses in a private nursing college in Gauteng. The participants advocated for anonymous telephonic pre- and post-test counselling through a toll-free hotline service.

A significant number of respondents indicated that they would seek help and follow up an HIV positive result with a health care worker at the clinic. According to the WHO (2015: 32), this linkage to HIV care involves a process of actions and activities that support people testing and diagnosed with HIV to engage with prevention, treatment and care services as appropriate for their HIV status. The importance of timely linkage to HIV care is widely discussed in several studies (Cherutich *et al.* 2014: 24; Makusha *et al.* 2015: 8; Ng *et al.* 2012:6; Pant Pai 2013: 11). Peate (2015: 663) lamented that HIVST lacks linkage to care for people who test HIV positive as seeking help from a health worker is an individual responsibility.

In South Africa, there are no referral mechanisms in place for HIV positive people to be linked to HIV care as further research is still required to support the implementation of HIVST (Department of Health 2015: 13). In a study conducted by Mokgatle and Madiba (2017:10) among TVET students to evaluate implications for scale up in South Africa, findings revealed that students indicated that they would follow up on a positive HIV result at a clinic.

The study results revealed that the majority of respondents indicated that HIVST should be made readily available to people. This is similar to the findings of the study conducted in the UK among MSM by Witzel *et al.* (2016: 10) which showed that participants indicated that HIVST should be made readily available to people so as to increase frequent testing and increase motivation to test.

Study results showed that most respondents indicated their support for HIVST kits to be made available through shops and the internet. The findings of the study concur with findings of the study conducted among Spanish MSM by Koutentakis *et al.* (2016: 9), where it was identified that there may be an increase in the unregulated trade of online illegal HIVST kits. A concern is that these may not conform to handling, distribution and storage conditions. The authors further highlight that these may continue to be sold online and possibly at a lesser price.

Results of the study further indicated that a significant number of respondents disagreed that HIVST kits should be made available in pharmacies only. Findings of the study conducted by Mugo *et al.* (2017: 12) concluded that pharmacy uptake in Kenya was high among clients seeking HIVST compared to other services. Privacy and personal empowerment were mentioned as drivers for using pharmacy for HIVST. An official roll-out of HIVST was recommended as a high demand for availability of HIVST kits from pharmacies was realised (Mugo *et al.* 2017: 12).

Contrary to the above results, the findings of the study conducted by Estem, Catania and Klausner (2016: 109) established that social embarrassment could be caused by having to ask the pharmacist about HIVST kits, which are stored behind the counter. A concern for lack of privacy and confidentiality in private pharmacies was also raised by adolescents in a study conducted by Catania *et al.* (2015:450). This concern was attributed to over-the-counter dissemination. The recommendation was for selling of the HIVST kits off-the-shelf and pharmacist should put the HIVST kit in a bag that obscures the contents (Catania *et al.* 2015: 450).

The SAPC abolished the restriction on selling of HIVST on the 23rd December 2016 (Child 2017: 7). The move hopes to increase the number of people who test for HIV and enable people to test in the privacy of their own homes. Draft legislation was gazetted in December 2016 and was made open to the public

for comment. The proposals contained in the draft included that pharmacists should inform customers that they need to confirm the results if they test positive. Further, it proposed that HIVST sold by pharmacies should be approved by the WHO or some other regulatory body (Child 2017: 7).

A noteworthy percentage of respondents indicated that HIVST kits should not be made available to clinics only. This is on par with recommendations that dissemination of HIVST should not only be confined to specific places, but a wide range of distribution sites should be utilised. This can include community based organisations, and commercial and public venues that are utilised by general and key populations (Estem, Catania and Klausner 2016: 109). Furthermore, Perez *et al.* (2016: 10) concluded that the provision of HIVST in South Africa's public health sector could potentially help overcome obstacles to the acceptance of HIVST among men and youth in particular. HIVST may also be offered to individuals attending a clinic who decline conventional HIV testing (Perez *et al.* 2016: 10).

6.6 ATTITUDES OF HEALTH CARE USERS TOWARDS DISCLOSURE OF HIV POSITIVE STATUS

Results of the study showed that a significant percentage (53.4%) of respondents indicated that an HIV positive test should be a total secret. According to the WHO Guidelines, disclosure by the individual to a sexual partner, family member, friend, trusted others or health care providers may be highly beneficial with considerable benefits (WHO 2015: 28). Disclosure can ensure much needed support. The WHO further warns that research findings on consequences of disclosure by a female partner to a male partner are mixed. There could be intimate partner violence before and after HIVST, thus disclosure should be executed with caution (WHO 2015: 28).

Study data from the respondents indicated that the sex partner and all significant others should be informed about a positive HIV status. This result coincides with findings of the study conducted by Strauss, Rhodes and

George (2015: 9) which identified that knowledge of HIV testing and the support systems such as family, friends and peers act as a strong interpersonal facilitator alleviating general social stigma and discrimination attached to being HIV positive.

6.7 PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST

Study data revealed that respondents indicated that through HIVST privacy is ensured. These findings are analogous with findings from other studies that concerns around privacy and confidentiality issues prevail, as health care users do not trust health care workers to maintain confidentiality and privacy (Pal *et al.* 2016: 6; Nkuna and Nyazema 2016: 79; Heard and Brown 2016: 2; Mugo *et al.* 2017: 12; Madiba, Sebogola and Mokgatle 2015: 211; Perez *et al.* 2016: 10; Rosengren *et al.* 2016: 391).

Data from the study further revealed that people can spend less time at the clinic or hospital by using HIVST. These results harmonise with findings of the study conducted in South Africa by Madiba, Sebogola and Mokgatle (2015: 214) among student nurses to assess their acceptance and willingness to use HIVST. One of the findings was that HIVST is convenient and has the potential to save time as there will be no waiting in clinic or hospital queues if HIVST is available and can be performed at home. In a similar study conducted by van Dyk (2013b: 46) to assess the use of HIVST as a strategy to increase the uptake of HIV testing in South Africa, the findings revealed that participants who demonstrated preference of HIVST compared to other approaches believed that the problem of long waiting times due to insufficient counsellors and a failing health care system would be averted.

The data from the study indicated that more people can know their HIV status through the use of HIVST. Numerous African countries are within striking distance of having at least 90% of people living with HIV tested by the year 2020. There has been a substantial improvement in the number of people who know their HIV status in the sub-Saharan continent (UNAIDS 2014b: 16).

The gap between current results and the 90% target underscores the need for more frequent testing and more focused, strategic targeting of testing services to ensure 90% knowledge of HIV status on an ongoing basis including marginalised population groups. To increase the proportion of people living with HIV who know their HIV status will necessitate moving beyond a passive approach to testing. Practical and rights based testing initiatives with the utilisation of a broader selection of HIV testing and counselling approaches including self-testing, PICT and community-based approaches should be explored (UNAIDS 2014a: 16). The findings of the study conducted by Wood *et al.* (2014:121) concur with findings of this study that HIVST could help those who are at high risk of HIV infection to know their HIV status. This could also facilitate frequent testing. However, concerns about false assurance and missed infections during the window period are still a cause for concern (Wood *et al.* 2014: 121).

Results of this study further showed that a significant percentage (77.1%) of respondents indicated that people who are scared to go to the clinics can test at home. This findings concur with findings of a study conducted by van Dyk (2013b: 46) that people who were not willing to go to the clinics, due to fear of stigma and discrimination, would opt to test privately at home. In another similar study conducted in China by Han *et al.* (2014: 1), it was identified that HIVST would make it possible to access those sub-groups of people such as high-risk MSM that cannot be easily reached through facility-based HIV testing.

The study data indicated that a noticeable percentage of respondents (87%) were in agreement that more people could get ARVs before becoming sicker if they tested earlier using HIVST. South Africa is one of the 35 countries that have been designated 'Fast-Track' countries requiring intensified action against HIV (WHO 2016: 8). HIVST could assist in ensuring that people eligible to get ARV's access them before they become sicker (WHO 2016: 8). The WHO further supports the shift towards 'treat all' recommendations since

2016 (WHO 2016: 27). These recommendations call for immediate treatment of HIV for everyone diagnosed with HIV infection, irrespective of HIV CD4 count measurement. If widely implemented, the 'treat all' approach would contribute significantly to achieving the 90–90–90 Fast-Track HIV testing and treatment target and the Sustainable Development Goals target of universal health coverage by 2030.

The results of the study are in accord with the study findings conducted in Limpopo among health science students by Nkuna and Nyazema (2016: 81) to assess the potential uptake of HIVST. One of the findings was that if HIVST kits were readily available and easily accessible it would lead to earlier diagnosis and treatment of HIV positive people. This would obviate people getting sick from opportunistic infections and possible death (Nkuna and Nyazema 2016; Jahanbakhsh, Mostafavi and Haghdooost 2015:1).

The study results also showed that there could be less transmission of HIV infection to other people if people know their HIV status. In order to achieve the zero transmission, it is important that all people get tested and be commenced on ARVs (UNAIDS 2014b: 22). There could be less transmission due to the practise of safe sexual intercourse and people will be virally suppressed. The 90-90-90 strategy is to end the AIDS epidemic as a major global health threat by 2030. This strategy involves using all possible prevention tools to reduce the annual number of new HIV infections by 90% by 2030 (UNAIDS 2014b: 22). These results dovetail with findings of the study conducted by Brown *et al.* 2016: 8) to determine information, motivation and behavioural skills of high-risk young adults regarding the use the HIVST. Participants indicated that besides knowing their own HIV status, they would be able to negotiate the use of HIVST with potential sex partners. This would theoretically prevent onward transmission from unprotected sex (Brown *et al.* 2016: 8).

The study data indicated that more people could get tested more frequently. The WHO (2015: 18) has stipulated guidelines for countries on the frequency of HIV testing for different populations. All people who are perceived as low risk for HIV infection and no exposure should be re-tested at least annually. Clients who are at high risk of infection should be re-tested every 6 to 12 weeks. Women attending antenatal clinics should be tested during their initial visit and if negative, they should be re-tested during every scheduled antenatal visit. Clients presenting with opportunistic infections should be re-tested in 6 weeks (WHO 2015: 18). The results concur with findings of the study conducted by Prestage *et al.* (2016:57) and Yan *et al.* (2015:490). The study was conducted among gay and bisexual men in Australia to assess previous and future use of HIVST. The findings were that participants indicated that they would use HIVST for frequent HIV testing for themselves and for their partners.

The data of this study further showed that there could be wrong interpretation of results due to failure to read and follow instructions properly. These findings are in agreement with findings from other studies where there were apprehensions about wrong interpretation of results. Correct interpretation of results is essential to prevent missing out on the precise HIV status (de la Fuente *et al.* 2012: 1). A false positive interpretation could result in unnecessary anxiety while a false negative can give an erroneous sense of security with continued risky sexual behaviours (Ng *et al.* 2012: 6).

A significant percentage (66.1%) of respondents indicated that people may not be able to read and understand instructions properly. These data disagree with findings of the results of the several studies where either oral based or blood based testing were performed. In these studies (Ng *et al.* 2012; Pant Pai 2013; Perez *et al.* 2016; Choko *et al.* 2015; Sarkar *et al.* 2016; Mugo *et al.* 2017) findings were that participants were able to properly read and understand instructions. In the study conducted by Mugo *et al.* (2017: 13), one out of ten participants could read only Kiswahili and thus a recommendation

was made to explore innovative approaches to cater for illiterate people and to have instructions in the person's language.

The data of the study further reflected concerns that a person can intentionally infect others especially if the person did not get counselling before the test. There are no documented serious unintended consequences related to HIVST such as intentional infection of other people related to not getting pre-test counselling (Choko *et al.* 2015: 13), except for a study by Heard and Brown (2016: 3) in which one participant mentioned he would intentionally "infect others". To avert the potential of intentional infection of other people, pre-test counselling before HIVST cannot be overemphasised, either through face-to-face, online technologies, Health technologies or toll-free telephone lines (Makusha *et al.* 2015; Perez *et al.* 2016; van Dyk 2013b).

Data of the study revealed that children, workers and family members can be tested against their will, which could result in abuse. This result has been documented in other studies (Makusha *et al.* 2015: 80). A study conducted in South Africa revealed that there were concerns regarding the possible use of coercion associated with HIVST. This was hypothesised as having a possibility of exacerbating violence following HIVST, especially in areas where there are existing reported incidences of domestic violence (Perez *et al.* 2016: 11).

The study data showed that there could be blaming of other people if the test is positive. Choko *et al.* (2015: 13), in their study to evaluate the uptake of HIVST, accuracy, safety and linkage into care in Malawi, identified that there were no serious unintended consequences related to HIVST such as blaming others. This was detected by an active community surveillance system which included verbal autopsies (Choko *et al.* 2015: 13).

The data of the study indicated that the majority of respondents showed that people may commit suicide if not properly counselled before the test. There have been concerns in many studies about possible suicide but findings of the study conducted by Choko *et al.* (2015: 13) found that there were no reported suicides.

Results in the study indicated that if HIVST is not properly regulated by the government, unreliable test kits can be sold to people which could give wrong results. This is a concern which has been raised in a study conducted by Koutentakis *et al.* (2016: 9). In this study, data were that in countries where HIVST trade is unregulated, there may be selling of illegal and unreliable test kits. These HIVST kits may have similar presentations with the FDA approved ones but not comply with storage, handling and distribution conditions which could lead to wrong results. Moreover they may not offer any kind of support in the form of counselling and connection to care (Koutentakis *et al.* 2016: 9; Williams *et al.* 2016: 2).

6.8 RELATIONSHIP BETWEEN KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIVST

The third objective was to establish if there is a relationship between knowledge, attitudes and perceptions of health care users towards HIVST. Pearson's correlation was used to test for relationship between knowledge, attitudes and perceptions of health care users towards HIVST. The study findings revealed a weak positive correlation between knowledge and more agreement on statements related to attitudes and perceptions towards HIVST. This means that more knowledge is associated with more agreement on given statements. These findings are congruent with findings of a study conducted by Hurt *et al.* (2016: 592), where the study findings indicated that MSM who possessed knowledge of HIVST had high acceptability of HIVST with positive attitudes and perceptions towards its use. In contrast with the above findings are findings of the study conducted in Cambodia by Pal *et al.* (2016: 4), where all participants had practically no knowledge of HIVST. The participants

demonstrated a positive attitude and acceptance of the new innovative strategy. However, they voiced concerns about potential barriers such as insufficient knowledge about its use.

6.9 SUMMARY OF RESULTS

6.9.1 Knowledge of HIVST

In this study, the majority of respondents (n=307) have heard about HIVST. The use of HIVST in the study was minimal with only n=83 respondents having used it. It was noted that some of respondents had read about it which demonstrates that reading material on HIVST is available to the community. Knowledge was also demonstrated as respondents indicated that HIVST kits are available from private pharmacies and the internet but not from government institutions. Furthermore, it was important to note that findings indicated adequate knowledge of HIVST using blood rather than saliva. There was insufficient knowledge that it takes 20-40 minutes to get results from the HIVST. It was also of importance to note that HIVST was seen as a screening test and a need to re-test after three months if the test is negative was indicated. The majority of respondents demonstrated knowledge of the need to go to a health care worker if the test is positive for confirmation of results and counselling.

6.9.2 Attitudes of health care users towards HIVST and linkage to care

Results of the study concluded that HIVST was acceptable and thought of as a good idea. Most respondents indicated that they would not find difficulty performing HIVST. Pre- and post-test counselling was highlighted as necessary to go hand in hand with HIVST, whether face-to-face or telephonically. Preference to have HIVST freely available to people in the shops, internet and not in pharmacies only, was indicated.

6.9.3 Attitudes of health care users towards disclosure of HIV positive status

It was identified in the study that the majority of respondents indicated that HIV positive status should be a total secret, but at the same time indicated that a sex partner only and all significant others should be informed. In the same breath it was indicated that people should talk openly about their HIV positive status.

6.9.4 Perceptions of health care users towards HIVST

Positive perceptions towards HIVST identified included: privacy is ensured, less time is spent in government institutions, more people can know their status and people who are scared to go to clinics can test at home. There were also positive perceptions that people can get ARV's before they get sicker and that there could be less transmission to other people and people could get tested more frequently.

Negative perceptions towards HIVST identified included that people may not be able to read and understand instructions properly and may interpret results incorrectly. There were also fears indicating that people could intentionally infect others if not properly counselled. Concerns were expressed that children, workers and family members could be tested against their will, and that people could blame others should they test HIV positive and may try to commit suicide. Lastly, concern was expressed that unreliable HIVST kits that are not properly regulated may be sold thus giving wrong results.

6.10 SUMMARY OF THE CHAPTER

In this chapter, the researcher detailed information obtained from data analysis regarding knowledge of HIVST, attitudes of respondents towards HIVST and linkage to care. Attitudes of respondents towards HIV positive status disclosure and perceptions of respondents towards HIVST were also discussed. Lastly, the relationship between knowledge, attitudes and

perceptions of respondents towards HIVST was discussed. The final chapter will present conclusions, limitations of the study and recommendations.

CHAPTER 7 : CONCLUSION, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY

7.1 INTRODUCTION

The previous chapter discussed findings of the study and this chapter will present conclusions, limitations of the study and recommendations based on the findings.

7.2 CONCLUSION

The study findings can be concluded according to the objectives below.

7.2.1 Objective 1: To determine health care users' knowledge of HIVST

The respondents were to indicate whether they agreed, disagreed or were not sure in response to a set of statements in order to determine their knowledge of HIVST. The study results indicated that majority of the respondents demonstrated knowledge of HIVST through having heard about it. The results of the study conform to Ajzen's Theory of Behaviour (1991: 189) which states that in order for the person to make a decision to perform a particular behaviour, he/she needs to have sufficient information about the intended behaviour.

7.2.2 Objective 2: Assess health care users' attitudes and perceptions towards HIVST

The respondents were to indicate their agreement or disagreement ranging from strongly disagree, disagree, neutral, agree or strongly agree with certain statements. It was demonstrated in the results that HIVST was seen as a good idea and respondents did not perceive that they would have any difficulty to perform it. There were positive aspects of HIVST identified in the

study – that privacy could be ensured and it could be a strategy to prevent onward HIV transmission. However, there were also concerns raised, such as the possibility of coerced testing and abuse from use of HIVST, especially with women and children. Another cause of concern was wrong interpretation of results and possible false reassurance from inaccurate results. According to the Theory of Planned Behaviour, attitude is a personal evaluation of the intended behaviour. The intention or lack thereof to perform a specific behaviour will depend on the person's attitudes towards that particular behaviour. This theory supports findings of this study as results revealed that there were more positive than negative attitudes and perceptions towards HIVST.

7.2.3 Objective 3: Establish if there is any relationship between knowledge, attitudes and perceptions of health care users towards HIVST

Pearson's correlation was used to test for relationship between knowledge, attitudes and perceptions of health care users towards HIVST. It was established in the study that there was a relationship between knowledge, attitudes and perceptions of health care users towards HIVST, as there was a weak positive correlation between knowledge demonstrated and positive attitudes and perceptions towards HIVST in the study.

7.3 LIMITATIONS OF THE STUDY

Limitations are barriers or constraints that weaken or decrease the credibility of the study results. These could be the research design, sample of the study or research methods (Botma *et al.* 2010: 107; Burns and Grove 2011: 48). The study was conducted in Gateway clinics in hospitals around Durban which have basically homogenous characteristics as the institutions are in urban/peri-urban areas and townships, so this study cannot be generalised to other settings.

7.4 GAPS IDENTIFIED IN THE STUDY

Based on the findings of the study, the following were the gaps identified:

7.4.1 Gaps related to health care users

- Health care users have never seen or read about HIVST.
- Lack of knowledge that HIVST can be falsely negative if infection is less than three months.
- Lack of knowledge that HIVST can be done using fluid from the mouth.
- A significant number of respondents in the study were females.

7.4.2 Gaps related to the KZN Department of Health

- Unregulated availability of HIVST kits from private pharmacies and internet.
- Lack of policy guidelines and support for those who may wish to use HIVST.
- Potential selling of unreliable HIVST kits.
- HIVST not part of counselling and testing models in South Africa.
- Possible abuse of children, workers or partners from the use of HIVST.

7.5 RECOMMENDATIONS

7.5.1 Recommendations for the health care users

- Health care users should be more informed of HIVST as lack of information can lead to abuse through the use of uninformed testing by individuals who can purchase HIVST from private pharmacies to test those that are less informed.
- Awareness of HIVST can be made possible through the use of media, newspapers and government institutions.

- It was identified in the study that there was lack of knowledge that the HIVST result can be negative if the infection occurred less than three months previously. This is an important piece of knowledge, not only for HIVST but for all testing approaches that use antibody tests. The lack of this knowledge can lead to false reassurance and forward transmission of HIV infection to other people. More health information on the types of HIV testing where both antibodies and HIV antigen testing methods are used should be cascaded to people to empower them. Information should be made readily available in clinics, hospitals and media.
- It was revealed in this study that there were fewer males than females who consented to participate. It is common for men not to be keen to do HIV testing or to seek medical care as often as females. This includes marginalised men who are hard to access through conventional methods of testing. These groups could consider the use of HIVST in order to know their HIV status, when HIVST is properly regulated by the government.

7.5.2 Department of Health key stakeholders

- Exploration of the use of HIVST should include ethical and legal controls, innovative methods of pre- and post-test counselling and linkage to care as these have been identified as needs surrounding HIVST in the study.
- Stakeholders need to explore the feasibility of incorporating HIVST into health care services especially for those who refuse conventional testing methods.
- More information should be cascaded to people so that they can make informed decisions and be protected from potential abuse from HIVST kits which are available in pharmacies countrywide. This is relevant because restrictions on the use of HIVST by private pharmacies were abolished by the SAPC on the 23rd December 2016.

7.5.3 Further research

- Further research is recommended to explore innovative ways and technological advances to access populations in the rural areas, key populations, and men in general including taxi and truck drivers. This would assist in the attainment of the 90-90-90 strategy where more people will know about their HIV status, commence on ARV's early and be virally suppressed. This will also help to reduce transmission of HIV infection to other people.
- Further research is recommended to discover strategies of ensuring that people requiring pre- and post-test counselling and linkage to HIV care can access such services as this has been identified as a much desired missing link in HIVST in the study. Studies can include use of social networking, telephone hotlines, use of health care workers and various information technology approaches which can link potential testers to pre- and post- test counselling and to HIV care.
- Further research is recommended on views of key stakeholders on HIVST and policy formulation as recommended by the WHO. This is particularly important as it is stated in the literature that HIVST kits are available online and from private pharmacies countrywide. This is essential as unreliable and substandard HIVST kits can be sold to the public which can lead to false results.
- Research on ways of disseminating knowledge to people regarding HIVST and procedures through awareness campaigns should be conducted. This could be done through involvement of health care workers, health institutions and mass media. This is important as lack of knowledge regarding the use of HIVST can lead to potential social harms such as testing of children, workers and partners against their will, as it was indicated in the results of the study.

REFERENCES

- Alcom, K. 2013. Home assessment and initiation of ART following HIV self-testing: a cluster randomized trial to improve linkage to ART in Blantyre, Malawi. *20th Conference on Retroviruses and Opportunistic Infections*, Atlanta, 1-3. (Online). Available: <http://search.proquest.com/docview/1544726306?pq-origsite=summon> (Accessed 16 February 2016).
- Ajzen, I. 1991. The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50(2): 179-211.
- Allais, L. and Venter, F. 2014. The ethical, legal and human rights concerns raised by licensing HIV self-testing for private use. *AIDS and Behaviour*, 18(4): 433-437.
- Asiimwe, S., Oloya, J., Song, X. and Whalen C.C. 2014. Accuracy of unsupervised versus provider-supervised self-administered HIV testing in Uganda: a randomized implementation trial. *AIDS Behaviour*, 18: 2477-2484.
- Bavinton, B.R., Brown, G., Hurley, M., Bradley, J., Keen, P., Conway, D.P., Guy, R., Grulich, A.E. and Prestage, G. 2013. Which gay men would increase their frequency of HIV testing with home self-testing? *AIDS and Behaviour*, 17(6): 2084-2092.
- Bilardi, J.E., Walker, S., Read, T., Prestage, G., Chen, M.Y., Guy, R., Bradshaw, C. and Fairley, C.K. 2013. Gay and bisexual men's views on rapid self-testing for HIV. *AIDS and Behaviour*, 17(6): 2093-2099.
- Botma, Y., Greeff, M., Mulaudzi, F.M. and Wright, S.C.D. 2010. *Research in health sciences*. Cape Town: Pearson Education South Africa (Pty) Ltd.

Brown, B., Folayan, M.O., Imosili, A., Durueke, F. and Amuamuziam, A., 2014. HIV self-testing in Nigeria: public opinions and perspectives. *Global Public Health*, 10(3): 1-15.

Brown, W., Carballo-Diéguez, A., John, R.M. and Schnall, R. 2016. Information, motivation, and behavioural skills of high-risk young adults to use the HIV self-test. *AIDS Behaviour*. (Online): 1-10. DOI 10.1007/s10461-016-1309-x (Accessed 25 February 2017).

Burns, N. and Grove, S.K. 2009. *The practice of nursing research: Appraisal, synthesis and generation of evidence*. 6th ed. St. Louis: Saunders Elsevier.

Burns, N. and Grove, S.K. 2011. *Understanding nursing research: building an evidence based practice*. 5th ed. St. Louis: Saunders Elsevier.

Bustamante, M.J., Konda, K.A., Davey, D.J., León, S.R., Calves, G.M., Salvatierra, J., Brown, B., Caceres, C.F. and Klausner, J.D. 2016. HIV self-testing in Peru: questionable availability, high acceptability but potential low linkage to care among men who have sex with men and transgender women. *International Journal of STD & AIDS*, 17: 2093-2099.

Cambiano, V., Mavedzenge, S.N. and Phillips, A. 2014. Modelling the potential population impact and cost-effectiveness of self-testing for HIV: evaluation of data requirements. *AIDS and Behaviour*, 18(4): 450-458.

Cambiano, C., Ford D., Mabugu T., Mavedzenge S., Miners A., Mugurungi O., Nakagawa F., Revill P. and Philips A. 2015. Assessment of the potential impact and cost effectiveness of self-testing for HIV in low-income countries. *Journal of Infectious Diseases*, 13(5): 1-8.

Catania, J.A., Dolcini, M.M., Harper, G.W., Orellana, E.R., Tyler, D.H., Timmons, A. Damell, M., Dolcini-Catania L.G. and Towner, S.L. 2015. Self-implemented HIV testing: perspectives on improving dissemination among urban African American youths. *American Journal of Public Health*, 3(105): 449-452.

Cherutich, P., Kurth, A., Musyoki, H., Kilonzo, N. and Maina, W. 2014. HIV self-testing in sub-Saharan Africa: strategies to enhance and measure linkage to care. *Retrovirology Research and Treatment*, 6: 23-28.

Child, K. 2017. HIV home-testing kits at your corner chemist. *The Times*, 9 January: 7.

Chiu, C.J. and Young, S.D. 2016. Correlates of requesting home HIV self-testing kits on online social networks among African-American and Latino men who have sex with men. *AIDS Care*, 28(3): 1-5.

Choko, A.T., MacPherson, P., Webb, E.L., Willey, B.A., Feasy, H., Sambakunsi, R., Mdolo, A., Makombe, S.D., Desmond, N., Hayes, R. and Maheswaran, H. 2015. Uptake, accuracy, safety, and linkage into care over two years of promoting annual self-testing for HIV in Blantyre, Malawi: a community-based prospective study. *PLOS Medicine*, 12(9): 1-21.

Compact Oxford Dictionary & Thesaurus. 2006. 2nd edition. New York: Oxford University Press.

De La Fuente, L., Rosales-Statkus, M.E., Hoyos, J., Pulido, J., Santos, S., Bravo, M.J., Barrio, G., Fernández-Balbuena, S., Belza, M.J. and Madrid Rapid HIV Testing Group. 2012. Are participants in a street-based HIV testing program able to perform their own rapid test and interpret the results? *PLOS ONE*, 7(10): 1-11.

Department of Health. See South Africa. Department of Health.

Dong, M., Regina, R. Hlongwane, S., Ghebremichael, M., Wilson, D., and Dong K. 2014. Can laypersons in high-prevalence South Africa perform an HIV self-test accurately? *20th International AIDS Conference*, Australia, 20-25 July 2014. Melbourne, 1.

Estem, K.S., Catania J. and Klausner J.D. 2016. HIV self-testing: a review of current implementation and fidelity. *Current HIV/AIDS Reports*, 13: 107-115.

Figuerola, C., Johnson, C. Verster, A. and Baggaley R. 2015. Attitudes and acceptability on HIV self-testing among key populations: a literature review. *AIDS Behaviour*, 19: 1949-1965.

Food and Drug Administration (FDA). 2014. OraQuick In-home HIV test: summary of safety and effectiveness. (Online). Available: <http://www.fda.gov> (Accessed 29 January 2016).

Frasca, T., Balan, I., Ibitoye, M., Valladares, J., Dolezal, C. and Carballo-Diequez, A. 2014. Attitude and behaviour changes after use of rapid home tests to screen sexual partners. *AIDS Behaviour*, 18(5): 950-957.

Frye, V., Wilton, L., Hirshfield S., Chiason, M.A, Usher, D., Lucy D., McCrossin, J., Greenne E. and Koklin, B. 2015. Just because it's out there, people aren't going to use it. HIV self-testing among young, Black MSM, and transgender women: *AIDS Patient Care and STDs*, 29(11): 617-624.

Greacen, T., Kersandy D., Rahib D., Le Gall, J, Lydie N., Ghosn, J. and Chamenois, K. 2016. Comparing the information and support needs of different population groups in preparation for 2015 government approval for HIV self-testing in France in 2015. *PLOS ONE*, 11(3): 1-15.

Grove, S., Burns, N. and Gray, J. 2013. *The practice of nursing research: appraisal, synthesis and generation of evidence*. 7th ed. Philadelphia: Elsevier.

Han, L., Bien, C., Wei, C., Muessig, K., Yang, M., Liu, F., Yang, L., G. Meng, G, Emch, M. and Tucker, J. 2014. An online survey of HIV self-testing among MSM in China: implications for expanding HIV testing among key populations 20th International AIDS Conference. Australia. 20-25 July 2014. Melbourne, 1.

Health Professions Council of South Africa. 2008. *Ethical guidelines for good practice in the health care professions*. Pretoria. Government Printer.

Heard, A.C. and N. Brown, A.N. 2016. Public readiness for HIV self-testing in Kenya. *Aids Care*, 1-6. (Online). Available: <http://dx.doi.org/10.1080/09540121.2016.1191602> (Accessed 10 June 2016).

Hoyos, J., Belza, M.J., Fernández-Balbuena, S., Rosales-Statkus, M.E., Pulido, J., de la Fuente, L. and the Madrid Rapid HIV Testing Group. 2013. Preferred HIV testing services and programme characteristics among clients of a rapid HIV testing programme. *BMC Public Health*, 13:1-9.

Hurt, C.B., Soni, K. Miller, W.C. and Hightow-Weidman, L.B. 2016. Human immunodeficiency virus testing practices and interest in self-testing options among young, black men who have sex with men in North Carolina. *Sexually Transmitted Diseases*, 43(9): 587-593.

Jahanbakhsh, F., Mostafavi, E. and Haghdoust, A. 2015. The potential for HIV self-testing in Iran. *International Journal of Preventive Medicine*, 6:1-3.

Johnson, C., Baggaley, R., Forsythe, S., Van Rooyen, H., Ford, N., Mavedzenge, S.N., Corbett, E., Natarajan, P. and Taegtmeyer, M. 2014. Realizing the potential for HIV self-testing. *AIDS and Behavior*, 18(4): 391-395.

Kalibala, S., Tun, W., Cherutich, P., Nganga, A., Oweya, E. and Oluach, P. 2014. Factors associated with acceptability of HIV self-testing among health care workers in Kenya. *AIDS Behaviour*, 18(4): 1-17.

Knight, L., van Rooyen, H., Lim, J. and Peck R. 2014. "I think it is right": Acceptability of an HIV self-test by lay users in KwaZulu-Natal, South Africa. *20th Annual AIDS Conference*. Australia. 20-25 July 2014. Melbourne, 1.

Kortenbout, W., Mtshali, N., van Dyk, A.C, Van Wyk, N.C., Basson, P.M, Leech, R. and Mchunu, G. 2015. *Communicable diseases in Southern Africa*. Cape Town: Pearson Education.

Koutentakis, K. Rosales-Statkus, M.E. Hoyos, J., Fernández-Balbuena, S., Ruiz M., Agustí C., de la Fuente, L. Belza, M.J., and the Madrid HIV self-testing group. 2016. Knowledge and use of unauthorized HIV self-test kits among men who have sex with men in Spain, following approval of an over-the-counter self-test in the U.S: a cross-sectional study. *BMC Public Health*: 1-10. (Online): Available: DOI 10.1186/s12889-016-3204-9 (Accessed 4 February 2017).

Krause, J., Subklew-Sehume, F., Kenyon, C. and Colebunders, R. 2013. Acceptability of HIV self-testing: a systematic literature review. *BMC Public Health*, 13: 1-9.

Kurth, A.E., Cleland C.M., Chhun, N., Sidle J.E., Were, E., Naanyu, V., Emonyi, W., Macharia S.M., Sang, E. and Siika A.M. 2015. Accuracy and acceptability of oral fluid HIV self-testing in a general adult population in Kenya. *AIDS Behaviour*, 20: 870-879.

KwaZulu-Natal Department of Health. 2015. *EThekweni Health District Plan 2015-2016*. EThekweni: Government Printer.

KZN Department of Health. See KwaZulu-Natal Department of Health.

LoBiondo-Wood, G. and Haber, J. 2013. *Nursing research: methods and critical appraisal for evidence-based practice*. 8th ed. St Louis, MO: Mosby, Elsevier.

Makusha, T., Knight, L., Taegtmeyer, M., Tulloch, O., Davids, A., Lim, J., Peck, R. and van Rooyen, H. 2015. HIV self-testing could “revolutionize testing in South Africa, but it has got to be done properly”: perceptions of key stakeholders. *PLOS ONE*, 10(3): 1-10.

Madiba, S., Segobola, M. and Mokgatle, M. 2015. Assessing the acceptability and willingness to use HIV self-testing among student nurses in a private nursing college, Gauteng Province, South Africa. *World Journal of AIDS*, 5: 208-216.

Marlin, R.W., Young, S.D., Bristow, C.C., Wilson, G., Rodriguez, J., Ortiz, J., Mathew, R. and Klausner, J.D. 2014. Piloting an HIV self-test kit voucher program to raise sero-status awareness of high-risk African Americans, Los Angeles. *BioMed Central Public Health*, 14(1): 1-9.

Marley, G., Kang, D., Wilson, E.C., Huang, T., Qian, Y., Li, X., Tao, X., Wang, G. Xun H. and Ma, W. 2014. Introducing rapid oral-fluid HIV testing among high-risk populations in Shandong, China: feasibility and challenges. *BMC Public Health*.14: 1-14.

Mavedzenge, S.N., Baggaley, R. and Corbett, E.L. 2013. A review of self-testing for HIV: research and policy priorities in a new era of HIV prevention. *Clinical Infectious Diseases*, 57(1): 126-138.

Ministry of Health, Brazil. 2015. Global AIDS progress report -GARR (online). Brazil: Ministry of Health. (Online). Available: http://www.unaids.org/sites/default/files/country/documents/ce_ZA_Narrative_Report.pdf (Accessed 8 March 2016).

Ministry of Public Health and Sanitation, Kenya. 2008. Guidelines for HIV Testing and Counselling. Nairobi. (Online). Available: http://www.who.int/hiv/topics/vct/policy/KenyaGuidelines_Final2009.pdf (Accessed 10 March 2016).

Mkhwanazi, A. 2016. New HIV home test kits set to be a game changer. *Saturday Star*, 13 February 2016: 5. (Online). Available: <http://www.bing.com/search?q=saturday+star+south+africa&q=AS&pq=saturday+star&sc=8-> (Accessed 27 February 2016).

Mokgatle, M.M. and Madiba S. 2017. High acceptability of HIV self-testing among technical vocational education and training college students in Gauteng and North West Province: what are the implications for the scale up in South Africa? *PLOS ONE*, 12(1): 1-14.

Moule, P. and Goodman, M. 2014. *Nursing research: An introduction*. 2nd ed. Los Angeles: SAGE.

Mugo, P.M., Micheni, M. Shangala, J., Hussein, M.H., Graham, S.M., Rinke de Wit, T.F. and Sanders, E.J. 2017. Uptake and acceptability of oral testing among community pharmacy clients in Kenya: a feasibility study. *PLOS ONE*, 12(1):1-15.

National AIDS Commission, Malawi. 2015. *Providing leadership and coordinating the national to HIV/ AIDS response in Malawi* (online). Malawi: National AIDS Commission. (Online). Available: <http://www.aidsmalawi.org.mw/index.php?start=8> (Accessed 2 February 2016).

National AIDS Council, Zimbabwe. 2015. *Global AIDS Response Progress Report*. Zimbabwe: National AIDS Council. (Online). Available: http://www.unaids.org/sites/default/files/country/documents/ce_ZA_Narrative_Report.pdf (Accessed 10 March 2016).

Ng O.T., Angela L., Chow, A.L., Lee V.J., Mark I. C. Chen, M.I.C, Win, M.K., Tan H.H., Chua, A. and Leo Y.S. 2012. Accuracy and user-acceptability of HIV self-testing using an oral fluid-based HIV rapid test. *PLOS ONE*, 7(9): 1-9.

Nkuna, E., and Nyazema, N.Z. 2016. HIV self-testing, self-stigma and HAART treatment at the University of Limpopo: health sciences students' opinion and perspectives. *The Open AIDS Journal*, 10: 78-82.

Nyondo, L. 2016. HIV self-testing kit to reduce infections. *Zambia Daily Mail*. 13 April 2016: 1. (Online). Available: <http://www.bing.com/search?q=zambia+daily+mail&src=IE-TopResult&FORM=IETR02&pc=WCUG&conversationid> (Accessed: 01 May 2016).

Pal, K., Ngin C., Tuot S., Chhoun, P., Ly, C., Chhim S., Luong M.A., Brent Tatomir, B. and Yi, S. 2016. Acceptability study on HIV self-testing among transgender women, men who have sex with men, and female entertainment workers in Cambodia: a qualitative analysis. *PLOS ONE*, 11(11): 1-10.

Pant Pai, N.P., Behlim, T., Abrahams, L., Vadnais, C., Shivkumar, S., Pillay, S., Binder, A., Deli-Houssein, R., Engel, N., Joseph, L. and Dheda, K. 2013. Will an unsupervised self-testing strategy for HIV work in health care workers of South Africa? A cross sectional pilot feasibility study. *PLOS ONE*, 8(11): 1-10.

Pant Pai, N.P. 2014. Perspective on HIV self-testing in North America: a tale of two countries – US and Canada. *Retrovirology, Research and Treatment*, 6: 7-15.

Pant Pai, N.P., Bhargava, M., Joseph, L., Sharma, J., Pillay, S., Balram, B. and Tellier, P.P. 2014. Will an unsupervised self-testing strategy be feasible to operationalize in Canada? Results from a pilot study in students of a large Canadian university. *AIDS Research and Treatment*, 2014: 1-8.

Peate, I. 2015. HIV self-testing kits. *British Journal of Nursing*, 24(13): 663-663.

Perez, G.M., Cox V., Ellman T., Moore A., Patten G., Shroufi A., Stinson, K., Van Cutsem G. and Ibeto M. 2016. “I know that I do have HIV but nobody saw me”. Oral HIV self-testing in an informal settlement in South Africa. *PLOS ONE*, 11(4): 1-15.

Polit, D. F., Beck, C. T. 2008. *Nursing research: generating and assessing evidence for nursing practice*. 8th ed. Philadelphia: Lippincott Williams and Wilkins.

Polit, D.F. and Beck, C.T. 2012. *Nursing research, generating and assessing evidence for nursing practice*. 9th ed. Philadelphia: Lippincott Williams and Wilkins.

Polit, D.F. and Beck C.T. 2014. *Essentials of nursing research appraising evidence for nursing practice*. 8th ed. Philadelphia: Lippincott Williams and Wilkins.

Prestage, G. Zablotska, I. Bavinton, B., Grulich, A., Keen, P., Murphy, D., Brown, G., Bradley, J., Holt, M. and Guy, R. 2016. Previous and future use of HIV self-testing: a survey of Australian gay and bisexual men. *Sexual Health*, 13, 55-62.

Richter, M.L., Venter, W.D.F. and Gray, A. 2012. Forum: enabling HIV self-testing in South Africa. *Southern African Journal of HIV Medicine*, 13(4): 186-187.

Rosengren, A.L., Huang, E., Daniels, J., Young S.D., Marlin R.W. and Klausner, J.D. 2016. Feasibility of using Grindr™ to distribute HIV self-test kits to men who have sex with men in Los Angeles, California. *Sexual Health*, 13: 389-392.

Sarkar, A., Mburu G., Shivkumar P.V., Sharma P., Campbell F., Behera J., Dargan, R., Mishra S.K. and Mehra S. 2016. Feasibility of supervised self-testing using an oral fluid-based HIV rapid testing method: a cross-sectional, mixed method study among pregnant women in rural India. *Journal of the International AIDS Society*, 19: 1-11.

Scott, P.A. 2014. Unsupervised self-testing as part public health screening for HIV in resource-poor environments: some ethical considerations. *AIDS Behaviour*, 18:438-444.

South Africa. Department of Health. 2011. *National Strategic Plan on HIV, STIs and TB, 2012-2016*. Pretoria: Government Printer.

South Africa. Department of Health. 2015. *National HIV Counselling and Testing Policy Guidelines*. Pretoria: Government Printer.

Statistics South Africa. 2011. *Census in brief*. Pretoria. Statistics South Africa.

Strauss, M., Rhodes, B. and George G. 2015. Qualitative analysis of the barriers and facilitators of HIV counselling and testing perceived by adolescents in South Africa. *MC Health Services Research*, 15: 1-12.

Szaflarski, M., Ritchey, P.N., Jacobson, C.J., Williams R.H., Grau A.B., Meganathan, K., Ellison C. and Tsevat J. 2013. Faith-based HIV prevention programs: findings from the Cincinnati Census of Religious congregations. *AIDS Behaviour*, 17(5):1839-1854.

United Nations Programme on HIV/AIDS (UNAIDS). 2014a. *The Gap Report* Geneva. (Online). Available: http://www.unaids.org/en/resources/documents/2014/20140716_UNAIDS_gap_report (Accessed 5 March 2016).

United Nations Programme on HIV/AIDS (UNAIDS). 2014b. 90-90-90: An ambitious treatment target to help end the AIDS epidemic. Geneva. (Online). Available: http://www.unaids.org/sites/default/files/media_asset/90-90-90_en_0.pdf (Accessed 23 February 2016).

Van Dyk, A.C. 2013a. *HIV and AIDS education, care and counselling: a multidisciplinary approach*. 5th ed. Cape Town: Pearson.

Van Dyk, A.C. 2013b. Self-testing as strategy to increase the uptake of HIV testing in South Africa. *African Journal of AIDS Research*, 12(1): 41-48.

Van Rooyen, H., Tulloch, O., Mukoma, W., Makusha, T., Chepuka, L., Knight, L.C., Peck, R.B., Lim, J.M., Muturi, N., Chirwa, E. and Taegtmeyer, M. 2015. What are the constraints and opportunities for HIVST scale-up in Africa? Evidence from Kenya, Malawi and South Africa, *Journal of the AIDS International Society*, 18: 1-10.

Williams, O.D., Dean, J.A., Harting K., Bath, K. and Gilks C.F. 2016. Implications of the on-line market for regulation and uptake of HIV self-testing in Australia, *AIDS Care*, 1-7. (Online). Available: <http://dx.doi.org/10.1080/09540121.2016.1200716> (Accessed 24 June 2016).

Witzel, T.C., Rodger A.J., Burns F.M., Rhodes, T. and Weatherburn, P. 2016. HIV self-testing among men who have sex with men (MSM) in the UK: a qualitative study of barriers and facilitators, intervention preferences and perceived impacts. *PLOS ONE*, 11(9): 1-13.

Wong, H.T.H., Tam, H.Y., Chan, D.P. and Lee, S.S. 2015. Usage and acceptability of HIV self-testing in men who have sex with men in Hong Kong. *AIDS Behavior*, 19: 505-515.

Wood, B.R., Ballenger, C. and Stekler, J.D. 2014. Arguments for and against HIV self-testing. *HIV/AIDS Research and Palliative Care*, (6): 117-126.

World Health Organization (WHO) 2013. *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Recommendations for a public health approach*. WHO: Geneva.

WHO / United Nations Programme on HIV/AIDS (UNAIDS). 2014. *A short technical update on self-testing for HIV*. Geneva. (Online). Available: http://www.who.int/hiv/pub/vct/self_test_tech_update/en/ (Accessed on 23 April 2016).

WHO. 2015. *Consolidated guidelines on HIV testing services 5Cs: Consent, Confidentiality, Counselling, Correct Results and Connection*. Geneva: WHO: Geneva.

WHO. 2016. *Guidelines on HIV testing services HIV self-testing and partner notification supplement to consolidated guidelines on HIV testing services*. Geneva: WHO.

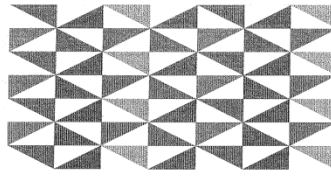
Yan, H., Yang, H., Raymond, H.F., Li, J. Shi, J.L., Huan, X. and Wei, C. 2015. Experiences and correlates of HIV self-testing among men who have sex with men in Jiangsu Province, China. *AIDS Behaviour*, 19:485-491.

Young, S.D., Klausner, J., Fynn, R. and Bolan R. 2013. Electronic vending machines for dispensing rapid HIV self-testing kits: a case study. *AIDS Care: Psychological and Socio-Medical Aspects of AIDS/HIV*. (Online). Available: DOI: <http://dx.doi.org/10.1080/09540121.2013.808732> (Accessed 20 February 2016).

Young, S.D., Daniels, J., Chiu, C.J., Bolan, R.K., Flynn, R.P., Kwok, J. and Klausner, J.D. 2014. Acceptability of using electronic vending machines to deliver oral rapid HIV self-testing kits: a qualitative study. *PLOS ONE*, 9(7): 1-6.

APPENDICES

Appendix 1: DUT Ethics clearance



Institutional Research Ethics Committee
Faculty of Health Sciences
Room MS 49, Mansfield School Site
Gate 8, Ritson Campus
Durban University of Technology
P O Box 1334, Durban, South Africa, 4001
Tel: 031 373 2900
Fax: 031 373 2407
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics
www.dut.ac.za

17 November 2016

IREC Reference Number: **REC 109/16**

Ms S D Gumede
P O Box 981
Nagina
3604

Dear Ms Gumede

Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal

The Institutional Research Ethics Committee acknowledges receipt of your notification regarding the piloting of your data collection tool.

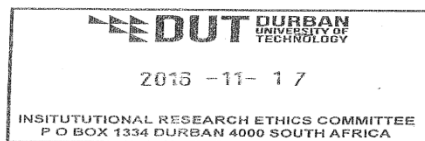
Kindly ensure that participants used for the pilot study are not part of the main study.

In addition, the IREC acknowledges receipt of your gatekeeper permission letter.

Please note that **FULL APPROVAL** is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,

Chairperson: IREC



Appendix 2a: Letter of permission to the eThekwini District Manager

P.O. Box 981
Nagina
3604

The District Manager
EThekwini Health District
Private Bag X54318
Durban
4000

Dear Sir

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is '*Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekwini District, KwaZulu-Natal*'. The study aims to assess health care users' knowledge, attitudes and perceptions towards HIV self-testing at Addington, R.K. Khan and Prince Mshiyeni Memorial Hospital Gateway Clinics.

A quantitative, non-experimental descriptive design will be used to determine knowledge, attitudes and perceptions of adult health care users towards HIV self-testing at the selected facilities. Self-administered questionnaires will be used to collect data. 442 participants will be randomly selected and proportionately spread across the three facilities. Confidentiality and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is hereby requested to conduct the study at Addington, R.K. Khan and Prince Mshiyeni Memorial Hospitals' Gateway clinics. Ethical approval to conduct the study will be obtained from the Durban University of Technology Institutional Research Ethics Committee. The researcher will ensure that service delivery is not interrupted during data collection process by collecting data during tea and lunch breaks. A copy of the summary of the research proposal is enclosed. Your support and permission to conduct the study in your facility will be appreciated. Please do not hesitate to contact Prof MN Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms S.D. Gumede (Master's student)
Email: sdgumede@gmail.com
Tel: 031-327 2068
Cell: 082 535 1916

Appendix 2b: Approval letter from the eThekwini District Manager



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address : 83 King Cetshwayo Highway, Mayville, Durban, 4001
Postal Address: P Bag X54318, Durban 4000
Tel: 031 - 2405308 Fax: 031 2405555 Email: somaroo@ukzn.ac.za

DIRECTORATE:

eThekwini District Office

20 October 2016

Dear Ms Gumede

Re: Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekwini District, KwaZulu-Natal.

I have pleasure in informing you that your application to conduct research in eThekwini district has been approved at the following health care facilities:

- i. Addington Hospital's Gateway clinic
- ii. Prince Mshiyeni Hospital's Gateway clinic
- iii. R.K.Khan Hospital's Gateway clinic

Please note the following:

- i. All research activities must be conducted in a manner that does not interrupt clinical care at the health care facility,
- ii. logistical details must be arranged with the CEO/medical manager /operational manager of the facility,
- iii. this research project should only commence after final approval by the KwaZulu-Natal Health Research and Knowledge Unit, and full ethical approval, has been granted, and
- iv. a report of your findings should be forwarded to the eThekwini district office on completion of your project.

Yours sincerely



H Somaroo (Dr)
Public Health Medicine Specialist

Appendix 3a: Letter of permission to the KZN Department of Health

P.O. Box 981
Nagina
3604

Dr Elizabeth Lutge
Health KwaZulu-Natal Department of Health
Health Research and Knowledge Management Secretariat
330 Langalibalele Street
Natalia Building
Pietermaritzburg
3200

Dear Dr Lutge

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is *'Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal'*. The study aims to assess health care users' knowledge, attitudes and perceptions towards HIV self-testing at Addington, R.K. Khan and Prince Mshiyeni Memorial Hospital Gateway Clinics.

A quantitative, non-experimental descriptive design will be used to determine knowledge, attitudes and perceptions of adult health care users towards HIV self-testing at the selected facilities. Self-administered questionnaires will be used to collect data. 442 participants will be randomly selected and proportionately spread across the three facilities. Confidentiality and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is hereby requested to conduct the study at Addington, R.K. Khan and Prince Mshiyeni Memorial Hospitals' Gateway clinics. Ethical approval to conduct the study will be obtained from the Durban University of Technology Institutional Research Ethics Committee. The researcher will ensure that service delivery is not interrupted during data collection process by collecting data during tea and lunch breaks. A copy of the summary of the research proposal is enclosed. Your support and permission to conduct the study in your facility will be appreciated. Please do not hesitate to contact Prof MN Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms S.D. Gumede (Master's student)
Email: sdgumede@gmail.com
Tel: 031-327 2068
Cell: 082 535 1916

Appendix 3b: Approval letter from the KZN Department of Health



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

330 Longabaile street,
Private Bag X9051 PMB, 3200
Tel: 033 395 3189/3189/3123 Fax: 033 394 3762
Email: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:

Health Research & Knowledge
Management (HRKM)

Reference: HRKM375/16
KZ_2016RP30_456

10 November 2016

Dear Ms S D Gumede

(Durban University of Technology)

Subject: Approval of a Research Proposal

1. The research proposal titled 'Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal' was reviewed by the KwaZulu-Natal Department of Health (KZN-DoH).

The proposal is hereby **approved** for research to be undertaken at the Gateway Clinics of Addington, RK Khan & Prince Mshiyeni Memorial Hospitals.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Ms G Khumalo on 033-395 3189.

Yours Sincerely

Dr E Lutge

Chairperson, Health Research Committee

Date: 10/11/16

Fighting Disease, Fighting Poverty, Giving Hope

Appendix 4a: Letter of permission to the CEO of Hospital A

P.O. Box 981

Nagina

3604

The Chief Executive Officer

XXXXXX Hospital

XXXX

XXXX

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is '*Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal*'. The study aims to assess health care users' knowledge, attitudes and perceptions towards HIV self-testing.

A quantitative, non-experimental descriptive design will be used to determine knowledge, attitudes and perceptions of adult health care users towards HIV self-testing at the selected facilities. Self-administered questionnaires will be used to collect data. 442 participants will be randomly selected and proportionately spread across the three facilities where the study will be conducted. Confidentiality and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is hereby requested to conduct the study at your Gateway clinic. Ethical approval to conduct the study will be obtained from the Durban University of Technology Institutional Research Ethics Committee. The researcher will ensure that service delivery is not interrupted during data

collection process by collecting data during tea and lunch breaks. A copy of the summary of the research proposal is enclosed. Your support and permission to conduct the study in your facility will be appreciated. Please do not hesitate to contact Prof MN Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms S.D. Gumede (Master's student)
Email: sdgumede@gmail.com
Tel: 031-327 2068
Cell: 082 535 1916

Appendix 4b: Approval letter from the CEO of Hospital A



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

ADDINGTON HOSPITAL
OFFICE OF THE HOSPITAL MANAGER
Postal Address: P.O. Box 977, DURBAN, 4000
Physical Address: 16 Erskine Terrace, South Beach
Tel.: (031) 327-2970, Fax.: (031) 368-3300
Email.: reshma.boodhai@kznhealth.gov.za
www.kznhealth.gov.za

AD/9/2/3/R

Enquiries: Dr M Ndlangisa
Extension: 2970/2568

7th December 2016

Principal Investigator:
➤ Ms S D Gumede

PERMISSION TO CONDUCT RESEARCH AT ADDINGTON HOSPITAL:
"KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF HEALTH CARE USERS
TOWARDS HIV SELF-TESTING AT SELECTED GATEWAY CLINICS AT ETHEKWINI
DISTRICT, KWAZULU-NATAL"

I have pleasure in informing you that permission has been granted to you by Addington Hospital Management to conduct the above research.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this office is informed before you commence your research.
4. Addington Hospital will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to Addington Hospital.


DR M NDLANGISA
HOSPITAL MANAGER
ADDINGTON HOSPITAL

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

Appendix 5a: Letter of permission to the CEO of Hospital B

P.O. Box 981

Nagina

3604

The Chief Executive Officer

XXXXXX Hospital

XXXX

XXXX

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is '*Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal*'. The study aims to assess health care users' knowledge, attitudes and perceptions towards HIV self-testing.

A quantitative, non-experimental descriptive design will be used to determine knowledge, attitudes and perceptions of adult health care users towards HIV self-testing at the selected facilities. Self-administered questionnaires will be used to collect data. 442 participants will be randomly selected and proportionately spread across the three facilities where the study will be conducted. Confidentiality and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is hereby requested to conduct the study at your Gateway clinic. Ethical approval to conduct the study will be obtained from the Durban University of Technology Institutional Research Ethics Committee. The researcher will ensure that service delivery is not interrupted during data

collection process by collecting data during tea and lunch breaks. A copy of the summary of the research proposal is enclosed. Your support and permission to conduct the study in your facility will be appreciated. Please do not hesitate to contact Prof MN Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms S.D. Gumede (Master's student)
Email: sdgumede@gmail.com
Tel: 031-327 2068
Cell: 082 535 1916

Appendix 5b: Approval letter from the CEO of Hospital B



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

R.K KHAN HOSPITAL

Postal Address: Private Bag X004, Chatsworth, 4030
Physical Address: 336 R. K. Khan Circle, Croftdene,
Chatsworth, 4030
Tel.: 031-459 6001
Fax: 031-401 1247
Email: reena.ramcharan@kznhealth.gov.za

OFFICE OF THE CEO

ENQUIRIES: DR P.S. SUBBAN

30 November 2016

Ms S.D. Gumede
P.O. Box 981
NAGINA
3604

Dear Madam

RE: PERMISSION TO CONDUCT A STUDY : "KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIV-SELF-TESTING AT SELECTED GATEWAY CLINICS AT ETHEKWINI DISTRICT, KZN"

Permission is granted to conduct your study at this institution.

Please note the following:-

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Institution with regards to this research.
2. Please ensure this office is informed before you commence your research.
3. You will be expected to provide feedback on your findings to this Institution.

Kindly liaise with Sr P. Manivasen, Operational Manager for PHC on Tel No. 03-4596337.

Yours faithfully

HOSPITAL CEO

Appendix 6a: Letter of permission to the to the CEO of Hospital C

P.O. Box 981

Nagina

3604

The Chief Executive Officer

XXXXXX Hospital

XXXX

XXXX

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A STUDY

I am a student registered for a Master's Degree in Nursing at the Durban University of Technology. The topic of my study is '*Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal*'. The study aims to assess health care users' knowledge, attitudes and perceptions towards HIV self-testing.

A quantitative, non-experimental descriptive design will be used to determine knowledge, attitudes and perceptions of adult health care users towards HIV self-testing at the selected facilities. Self-administered questionnaires will be used to collect data. 442 participants will be randomly selected and proportionately spread across the three facilities where the study will be conducted. Confidentiality and anonymity of institution will be maintained at all times. Feedback will be given on completion of the study.

Permission is hereby requested to conduct the study at your Gateway clinic. Ethical approval to conduct the study will be obtained from the Durban University of Technology Institutional Research Ethics Committee. The researcher will ensure that service delivery is not interrupted during data

collection process by collecting data during tea and lunch breaks. A copy of the summary of the research proposal is enclosed. Your support and permission to conduct the study in your facility will be appreciated. Please do not hesitate to contact Prof MN Sibiya, my supervisor if you have questions. Her telephone number is 031-373 2606. Her email address is nokuthulas@dut.ac.za.

Yours sincerely

.....
Ms S.D. Gumede (Master's student)
Email: sdgumede@gmail.com
Tel: 031-327 2068
Cell: 082 535 1916

Appendix 6b: Approval letter from the CEO of Hospital C



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE: Senior Medical Manager

Mangosuthu Highway, Private Bag X 07
MOBENI
Tel: 031 907 8317/8304 Fax: 031 906 1044 Email: myint.aung@kznhealth.gov.za
www.kznhealth.gov.za

Prince Mshiyeni Memorial
Hospital

Enquiry: Dr M AUNG
Ref No: 35/RESH/2106
Date: 18/11/2016

TO: Ms. Sibongiseni Daphney Gumede

RE: LETTER OF APPROVAL TO CONDUCT RESEARCH AT PMMH

Dear researcher;

I have pleasure to inform you that PMMH has approved to conduct research on
"Knowledge, attitudes and perceptions of health care users towards HIV self-testing
at selected Gateway Clinics at eThekweni District, KwaZulu-" Natal" in our institution.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. Please ensure this office is informed before you commence your research.
3. The institution will not provide any resources for this research.
4. You will be expected to provide feedback on your findings to the institution.

Thank you.

MYINT AUNG

Senior Medical Manager & specialist in Family Medicine
MBBS, DO(SA), PGDip in HIV (Natal), M.Med.Fam.Med (natal)
Tel: 031 9078317
Fax: 031 906 1044
myint.aung@kznhealth.gov.za

Appendix 7a: Letter of information in English



Warm greetings. Thank you for agreeing to participate in this study.

Title of the Research Study: Knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal

Principal Investigator/s/researcher: Ms S.D. Gumede, B Cur.

Supervisor: Prof. M.N. Sibiya (D Tech: Nursing)

Brief Introduction and Purpose of the Study: The use of wider and diverse HIV Counselling and Testing approaches have been identified as potential for ensuring that people know their HIV status and one of them is HIV self-testing. HIV self-testing refers to any form of testing where a person collects her or his sample which could be saliva or blood drops and does a rapid and simple laboratory test. This makes the person to be the first and only one to know the results. It is argued that self- testing could scale up the uptake of HIV testing at a low cost with a high impact while users are empowered. The study aims to assess knowledge, attitudes and perceptions of health care users towards HIV self-testing at selected Gateway Clinics at eThekweni District, KwaZulu-Natal.

Outline of the Procedures: You are kindly requested to answer the questions in the questionnaire. The questionnaire should take approximately 30-35 minutes to complete. I am available to clarify should there be a need but will not assist in answering questions in any way. You can choose to answer either in isiZulu and English. A sealed box is provided for completed questionnaires and no questionnaires may be taken away. Kindly fold and place completed questionnaire in the sealed box provided. At the end of the session I will personally take the away the box.

Risks or Discomforts to the Participant: There are no known risks or discomfort that could possibly result from the study.

Benefits: Findings of the study and recommendations will be communicated to Gateway clinics that participated in the study. Recommendations will be made to the relevant health authorities about findings of the study. Results of the study will also be published in journals and the researcher will present in conferences.

Reason/s why the Participant May Be Withdrawn from the Study: You may withdraw from the study at any stage if for any reason you don't want to participate anymore in the study. There will be no adverse consequences should you choose to withdraw from the study.

Remuneration: There will be no remuneration for participating in the study.

Costs of the Study: There will no costs involved by participating in the study.

Confidentiality: Confidentiality will be maintained throughout the study. Your name will not appear in the questionnaire and any other research documents. Questionnaires will be collected in a sealed box at the end of each session. Consent forms will be kept separate from questionnaires. Codes will be used to identify data collected in questionnaires. All collected data will be handled by the researcher only and will be kept under lock and key for five years and thereafter will be destroyed by shredding.

Research-related Injury: The study does not have a potential to cause any injury or harm.

Persons to Contact in the Event of Any Problems or Queries:

Please contact the researcher Ms SD Gumede (Tel no. 031-327 2068), my supervisor, Prof Sibiya (Tel no. 031-373-2606) or the Institutional Research Ethics Administrator on 031-373 2900. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031-373 2577 or moyos@dut.ac.za

Appendix 7b: Consent in English



Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Ms S.D. Gumede about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: 109/16.
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	Date	Time	Signature /
Right Thumbprint			

I, Sibongiseni Gumede (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Sibongiseni Daphney Gumede

Full Name of Researcher	Date	Signature
--------------------------------	-------------	------------------

Full Name of Witness (If applicable) Date

Signature

Full Name of Legal Guardian (If applicable) Date

Signature

Appendix 8a: Letter of information in isiZulu



Siyabingelela. Siyabonga ukuba ube yingxenye yalolucwaningo.

Isihloko socwaningo: Ulwazi, imizwa nemibono yabasebenzisi bezempilo mayelana nendlela yokuzihlolela igciwane lengculaza emitholampilo esezibhedlela ezikhethekile eThekwini, KwaZulu-Natal.

Umcwani: Ms S.D. Gumede, B Cur.

Owengamele ucwaningo: Solwazi M.N. Sibiya (D Tech: Nursing)

Kafushane mayelana nenjongo yalolucwaningo: Ukusetshenziswa kwezindlela ezehlukene zokuhlola igciwane lengculazi kuletha ithemba lokuqiniseka ukuthi wonke umuntu uyazazi ukuthi unalo noma akanalo yini igciwane lengculaza, enye yalezindlela ukuzihlolela wena igciwane lengculazi. Ngaloluhlelo kusho ukuthi umuntu uzithatha igazi noma uketshezi olusemlonyeni azihlole yena ngendlela elula. Kuqala yena ukwazi ngomphumela futhi kube uyena yedwa owaziyo. Kunemibono yokuthi loluhlelo lungandisa inani labantu abahlola igciwane lengculazi ngenani eliphansi kodwa imiphumela ibe mihle. Inhloso yalolucwaningo ukuhlola ulwazi, imizwa nemibono yabasebenzisi bezempilo mayelana nendlela yokuzihlolela igciwane lengculaza emitholampilo esezibhedlela ezikhethekile eThekwini, KwaZulu-Natal.

Uhlelo lokuyokwenzeka: Uyacelwa ukuba uphendule imibuzo ebuziwe kuhlu lwemibuzo. Ukuphendula imibuzo kungathatha imizuzu engamashumi amathathu kuya kwengamashumi amathathu nahlanu. Ngikhona ukucacisa uma kunesidingo, kodwa angeke ngikusize ukuphendula imibuzo. Ungakhetha ukuphendula ngesiZulu noma isiNgisi. Ibhokisi elivaliwe uma usuqedile ukuphendula imibuzo ihlinzekiwe. Awuvunyelwe ukuhamba nohlu lwemibuzo uye ekhaya. Sicela ugoqe iphepha lemibuzo ulifake ebhokisini elibekiwe. Ibhokisi ngizolithatha mina mathupha ekupheleni kocwaningo kosuku.

Ukungaphatheki kahle kwabayingxenye yocwaningo: Abukho ubungozi nokungaphatheki kahle okungadalwa ukuba yingxenye yocwaningo.

Imivuzo: Imiphumelela nezincomo zocwaningo ziyodluliselwa emitholampilo eyingxeny yalolucwaningo. Izincomo ziyokwedluliselwa kwabaphethe ezempilo. Umcwaningi uyoba yingxeny yemihlangano yabezempilo lapho eyokwethula khona imiphumela nezincomo zocwaningo.

Izizathu ezingenza labo abayingxeny yocwaningo bengabe besaqhubeka nocwaningo: Uvumelekile noma yinini ukuphuma ungabi yingxeny yocwaningo uma ufisa ukwenze njalo.

Inkokhelo: Ayikho inkokhelo etholakayo ngokuba yingxeny yocwaningo.

Izindleko zocwaningo: abayingxeny yocwaningo abalindelkile ukuthi bakhokhe ukuze babe yingxeny.

Ukugcinwa kwemfihlo: Konke kuyogcinwa kuyimfihlo ngesikhathi socwaningo. Angeke livezwe igama lakho kuhlu lwemibuzo nakweminye imibhalo yocwaningo. Uhlu lwemibuzo luyogoqwa ebhokisini elivaliwe ekupheleni kocwaningo losuku. Isivumelwano sokuba yingxeny yocwaningo ayiyukugcinwa kanye nohlu lwemibuzo. Igama lakho ngeke libe khona lapho sekucaciswa ulwazi oluqoqwe kuhlu lwemibuzo. Lonke ulwazi oluqoqiwe luyosetshenziswa umcwaningi kuphela futhi luyokhiyelwa iminyaka emihlanu, emva kwalokho uhlu lwemibuzo luyoshabalaliswa ngokufakwa emshinini ocucuza amaphepha.

Ukulimala okungenzeka ngenxa yocwaningo: Akukho ukulimala okungenzeka kuloluhlobo locwaningo.

Ongathintana nabo uma unemibuzo noma kukhona ofuna ukuchazelwa ngakho mayelana nalolucwaningo:

Umcwaningi Nksz SD Gumede (inombolo yocingo. 031-327 2068), Uwengamele ucwaningo, Solwazi Sibiya (inombolo yocingo. 031-3732606) noma Institutional Research Ethics Administrator on 031-373 2900. Izikhalazo zingabikwa kuMqondisi Womnyango wocwaningo, Solwazi S Moyo on 031 373 2577 or moyos@dut.ac.za

Appendix 8b: Consent in isiZulu



Isitatimende sesivumelwano sokuba yingxenye yocwaningo :

- Ngiyaqinisekisa ukuthi ngazisiwe ngumcwaningi, S.D. Gumede ngobunjalo ukuphathwa, inzuzo nokungaba yingozi ngalolucwaningo- inombolo ye Research Ethics Clearance : 109/16.
- Ngiyitholile, ngayifunda ngaqonda ngokubhalwe ngenhla (Encwadini yolwazi) maqondana nocwaningo.
- Ngiyazi ukuthi imiphumela yocwaningo neminingwane yami mayelana nobulili, ubudala, usuku lokuzalwa, iziqalo zamagama ami nesifo esingiphethe angeke kuvezwe kumbiko wocwaningo.
- Ngenxa yezidingo zocwaningo, ngiyavuma ukuthi ulwazi oluqoqwe ngumcwaningi kulolucwaningo angalusebenzisa nge computer.
- Ngingayihoxisa imvume nokuba yingxenye yokuba yingxenye yalolucwaningo ngaphandle kokucwaswa.
- Ngibe nethuba elanele ukubuza imibuzo ngakho ke ngiyavuma ukuthi ngikulungele ukuba yingxenye yalolucwaningo.
- Ngiyaqonda ukuthi ngiyokwaziswa ngokusha okutholakele kulolucwaningo ngenxa yokuzimbandakanya kwami nalo.

Igama eliphelele loyingxenye yocwaningo **Usuku**

Isikhathi

Sayina/ Isithupha sangasokudla

Mina Sibongiseni Gumede ngiyaqinisekisa ukuthi lona obhalwe ngasenhla oyingxenye yocwaningo wazisiwe ngobunjalo, ukuphatha nokungaba yingozi obuphathelene nalolu- cwaningo.

Igama lomcwaningi

Usuku

Sayina

Igama lofakazi
(Uma kusesidingo)

Usuku

Sayina

Igama eliphelele longamele ingane ngokomthetho **Usuku** **Sayina**
(Uma kunesidingo)

Appendix 9: Request and approval to use the questionnaire

Dear Sibongiseni,

You are very welcome to use the questionnaire. If you reference it, it is fine.
Kind regards and good luck with your Masters.

Prof Alta van Dyk
Department of Psychology
Unisa
Tel: +27 12 4298514

From: Gumede Sibongiseni [Sibongiseni.Gumede2@kznhealth.gov.za]
Sent: 18 February 2016 07:02
To: Van Dyk, Alta
Subject: REQUEST FOR PERMISSION TO USE SURVEY QUESTIONNAIRE

Good morning Prof

My name is Sibongiseni Gumede a lecturer at a KwaZulu-Natal Nursing College and currently doing Master's degree through the Durban University of Technology. I humbly request your permission to use and adapt your questionnaire in my study. My topic is "Adult Health Care Users" knowledge, attitudes and perceptions of HIV self-testing at selected Gateway clinics at eThekweni Health District.

Hoping my request will meet your favourable consideration.

Thank you

Mrs. Sibongiseni Daphney Gumede

Appendix 10a: Questionnaire in English

- Please select ONE answer for each question by using 'X'.
- Please do not write your name on the questionnaire.

SECTION 1: PERSONAL INFORMATION

1.1 Gender

Male	
Female	
Other	
Prefer not to say	

1.2 Age

Please Indicate your age	
Prefer not to say	

1.3 Home language

IsiZulu	
English	
IsiXhosa	
Afrikaans	
Northern Sotho	
IsiNdebele	
Setswana	
Xitsonga	
Sesotho	
Tshivenda	
SiSwati	
Other (please specify):	

1.4 Religious affiliation

Christian	
Hindu	
Muslim	
Nazareth	
Other (Please specify): _____	

1.5 Highest educational level

Some or all primary school	
Some or all high school	
Post-school education	

1.6 Marital status

Single	
Partnered	
Widowed	
Married	
Divorced/ separated	

1.7 Residence

Rural area	
Urban area	
Township	
Informal settlement	
Peri-urban	

1.8 Occupation

At school	
Post-school education	
Working	
Unemployed	

SECTION 2: HEALTH CARE USERS' KNOWLEDGE OF HIV SELF-TEST

Indicate whether you agree, disagree or are not sure with regard to each of the following statements:

Statement	Agree	Disagree	Not sure
2.1 I have heard about HIV self-testing.			
2.2 I have seen an HIV self-testing kit.			
2.3 I have used an HIV self-testing kit.			
2.4 I have read about HIV self-testing.			
2.5 It is legal to use HIV self-test kits in South Africa.			
2.6 HIV self-testing kits are available in Government clinics/hospitals.			
2.7 HIV self-testing kits are available from private pharmacies			
2.8 HIV self-testing kits are available on the internet.			
2.9 HIV self-testing is done using blood.			
2.10 HIV self- testing is done using fluid from the mouth.			
2.11 HIV self-testing can be done at home.			
2.12 HIV self-testing is done at the clinic or hospital.			
2.13 A person can perform the test on herself or himself.			
2.14 A health worker performs the HIV self-test.			

Statement	Agree	Disagree	Not sure
2.15 It takes about 20-40 minutes to get results from the HIV self-test.			
2.16 The test can be negative if the HIV infection is less than three months old.			
2.17 A person needs to re-test after three months if the test is HIV negative.			
2.18 A person needs to go to the health care provider if the HIV test is positive.			
2.19 It is painful to perform an HIV self-test.			
2.20 There is a telephone hotline to call should the test be positive.			
2.21 A person needs to be counselled by the HIV counsellor at a clinic before taking the HIV self-test.			
2.22. A person needs to be counselled by the HIV counsellor after taking the HIV self-test.			
2.23. A person needs to sign a consent form before HIV self-testing.			

SECTION 3: ATTITUDES OF HEALTH CARE USERS TOWARDS HIV SELF-TESTING AND LINKAGE TO CARE

Indicate your disagreement /agreement with the following statements:

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
3.1 HIV self-testing is a good idea.					
3.2 I can be able to do an HIV self-test at home.					
3.3 I think I would find the HIV self-testing procedure difficult to do perform.					
3.4 I would prefer to self-test alone.					
3.5 I would prefer to self-test at the health facility.					
3.6 I would prefer to self-test with partner.					
3.7 I would prefer to self-test and read the results myself.					

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
3.8 I would like to get telephone counselling before the testing.					
3.9 I would like face to face HIV counselling before having the test.					
3.10 I would like to get telephonic HIV counselling after the test.					
3.11 I would seek help from the clinic should the test be positive.					
3.12 I would like to have face to face HIV counselling after the test.					
3.13 It is important to get counselling after the test.					
3.14 It is important to follow up an HIV positive result at the clinic.					
3.15 HIV self-testing kits should be made readily available to people.					
3.16 HIV self-testing kits should be available in the shops and on the internet.					
3.17 HIV self- testing kits should be made available in pharmacies only.					
3.18 HIV self-testing kits should be made available in clinics only.					

SECTION 4: ATTITUDES OF HEALTH CARE USERS TOWARDS HIV POSITIVE STATUS DISCLOSURE

Indicate your disagreement/agreement with the following statements:

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
4.1 An HIV positive test should be a total secret.					
4.2 HIV positive person should tell the sex partner only.					
4.3 HIV positive people should inform all significant					
4.4 HIV positive people should talk openly about it.					

SECTION 5: PERCEPTIONS OF HEALTH CARE USERS TOWARDS HIV SELF-TESTING

Indicate your disagreement/agreement that the following statements are advantages/disadvantages gained from HIV self-testing:

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
5.1. Privacy is ensured.					
5.2 Less time is spent at the clinic or hospital.					
5.3 More people can know their HIV status.					
5.4 People who are scared to go to clinics can test at home.					
5.5 People can get ARV's before they get any sicker.					
5.6 There could be less transmission of HIV to other people if people knew their HIV status.					
5.7 People could get tested more frequently.					
5.8 People could read/interpret results incorrectly.					

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
5.9 People may not be able to read and understand the instructions properly.					
5.10 People could intentionally infect others if not counselled before the test.					
5.11 Children and workers could be tested against their will.					
5.12 Family members could be tested against their will, which could result in abuse.					
5.13 People could blame others should they test positive.					
5.14 Should a person who has not received counselling test positive; he/she may try to commit suicide.					
5.15 If not properly regulated by the Government, unreliable HIV self-testing test kits could be sold thus giving wrong results.					

Thank you for participating in this study

Appendix 10b: Questionnaire in isiZulu

- Sicela ukhombise impendulo yakho ngokufaka uphawu X maqondana nebhokisi olikhethayo. Khetha impendulo EYODWA kuphela kumbuzo ngamunye.
- Sicela ungalibhali igama lakho ohlwini lwemibuzo.

ISIGABA 1: IMIBUZO MAYELANA NAWU

1.1 Ubulili

Owesilisa	
Owesifazane	
Okunye	
Ngikhetha ukungadaluli ubulili bami	

1.2 Ubudala

Yisho iminyaka yakho	
Ngikhetha ukungadaluli iminyaka yami	

1.3 Ulimi lwasekhaya

IsiZulu	
IsiNgisi	
IsiXhosa	
IsiBhunu	
IsiSuthu sase Ntshonalanga	
IsiNdebele	
iSetswana	
Xitsonga	
Sesotho	
Tshivenda	
SiSwati	
Okunye (Sicela ubalule):	

1.4 Inkolo

NgumKristu	
Hindu	
Muslim	
Nazareth	
Okunye (Sicela ubalule): _____	

1.5 Izinga lemfundo

Kancane noma wonke amabanga aphansi	
Kancane noma wonke amazinga aphakathi	
Imfundo ephakeme	

1.6 Ushadile

Angishadile	
Nginomlingani	
Ngashonelwa engangishade naye	
Ngishadile	
Ngehlukanisile ngokomthetho/ sihlala ngokwehlukana	

1.7 Ukuhlala

Emaphandleni	
Edolobheni	
Elokishini	
Emijondolo	
Emaphethelweni edolobha	

1.8 Ukusebenza

Ngiyafunda esikoleni	
Ngiyafunda emazingeni aphakeme	
Ngiyasesebenza	
Angisebenzi	

ISIGABA 2: ULWAZI MAYELANA NENDLELA YOKUZHLOLELA IGCIWANE LENGCULAZI

Khombisa noma uyavuma, awuvumi noma awunasiqiniseko kulezitatimende ezilandelayo:

Isitatimende	Ngiyavuma	Ngiyaphika	Anginasiqiniseko
2.1 Ngike ngezwa ngendlela yokuzihlolela igciwane lengculazi.			
2.2 Ngike ngazibona izinsiza zokuzihlolela igciwane lengculazi.			
2.3 Ngike ngazisebenzisa izinsiza zokuzihlolela igciwane lengculazi.			
2.4 Ngike ngafunda ngokuzihlolela igciwane lengculazi.			
2.5 Kusemthethweni ukusebenzisa izinsiza zokuzikuhlolela igciwane lengculazi eMzansi Africa.			
2.6 Izinsiza zokuzihlolela igciwane lengculazi ziyatholakala emitholampilo nasezibhedlela zikahulumeni.			
2.7 Izinsiza zokuhlolela igciwane lengculazi zitholakala emakhemisi azimele.			
2.8 Izinsiza zokuhlolela igciwane lengculazi zitholakala ku internet.			
2.9 Kusetshenziswa igazi ukuzihlolela igciwane lengculazi.			
2.10 Ukuhlolela igciwane lengculazi kwenziwa ngokuthatha uketshezi lwasemlonyeni.			

Isitatimende	Ngiyavuma	Ngiyaphika	Anginasiqiniseko
2.11 Ukuzihlolela igciwane lengculazi kwenziwa ekhaya.			
2.12 Ukuzihlolela igciwane lengculazi kwenziwa emtholampilo noma esibhedlela.			
2.13 Umuntu angakwazi ukuzihlolela igciwane lengculazi ngokwakhe.			
2.14 Umsebenzi wezempilo nguyena ohlola umuntu ngohlelo lokuzihlolela yena.			
2.15 Kuthatha imizuzu engama 20 kuya ku 40 ukuthola imiphumela yokuzihlolela igciwane lengculazi.			
2.16 Umphumela ungekhombise ukuba negciwane lengculazi uma etheleleke ezinyangeni ezingaphansi kwezintathu.			
2.17 Kudingeka umuntu aphinde azihlole emva kwezinyanga ezintathu uma umphumela ukhombisa ukungabi negciwane lengculazi.			
2.18 Kudingekile ukuthi umuntu abonane nomsebenzi wezempilo uma umphumela ukhombisa ukuba negciwane lengculazi.			
2.19 Kubuhlungu ukuzihlolela igciwane lengculazi.			
2.20 Ikhona inombolo esheshayo ongafonela kuyona uma umphumela ukhombisa ukuthi likhona igciwane lengculazi.			
2.21 Kudingekile ukuthi umuntu elulekwe ngumaluleki wasemtholampilo ngaphambi kokuzihlolela igciwane lengculazi.			
2.22. Kudingekile ukuthi elulekwe ngumaluleki wasemtholampilo ngemuva kokuzihlolela igciwane lengculazi.			

Isitatimende	Ngiyavuma	Ngiyaphika	Anginasiqiniseko
2.23. Kudingeka umuntu asayine imvume ngaphambi kokuzihlolela igciwane lengculazi.			

ISIGABA 3: IMIZWA NEMIBONO MAYELANA NENDLELA YOKUZHLOLELA IGCIWANE LENGCULAZI KANYE NOKUXHUMANA NABEZEMPILO

Khombisa ukungavumelani/ukuvumelana kwakho nalezitatimende izelandelayo:

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angiphiki angivumi	Ngiyavuma	Impela ngiyavuma
3.1 Kuwumqondo omuhle ukuzihlolela igciwane					
3.2 Ngingakwazi ukuzihlolela mina igciwane lengculazi ekhaya.					
3.3 Ngicabanga ngingaba nobunzima bokuzihlolela ngokwami igciwane lengculazi.					
3.4 Ngingancamela ukuzihlola ngingedwa.					
3.5 Ngingancamela ukuzihlola ngisesikhungweni sezempilo.					
3.6 Ngingancamela ukuzihlolela nginomlingani					
3.7 Ngingancamela ukuzihlola ngizifundele mina umphumela.					

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angiphiki angivumi	Ngiyavuma	Impela ngiyavuma
3.8 Ngingathanda ukwelulekwa ngocingo ngaphambi kokuzihlola.					
3.9 Ngingathanda ukubonana nomaluleki ngaphambi kokuzihlola.					
3.10 Ngingathanda ukwelulekwa ngocingo ngemuva kokuzihlola.					
3.11 Ngingalucela usizo emtholampilo uma umphumela uveza ukuthi nginegciwane lengculazi.					
3.12 Ngingathanda ukubonana nomeluleki emva kokuzihlola.					
3.13 Kubalulekile ukwelulekwa emuva kokuzihlola.					
3.14 Kubalulekile ukulandelela ngokuya emtholampilo emva komphumela okhombisa ukuba negciwane lengculazi.					
3.15 Izinsiza zokuzihlola igciwane lengculazi kumele zitholakale kalula.					

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angiphiki angivumi	Ngiyavuma	Impela ngiyavuma
3.16 Izinsiza zokuzihlolela igciwane lengculazi kumele zitholakale ezitolo naku internet.					
3.17 Izinsiza zokuzihlolela igciwane lengculazi kumele zitholakale kosokhemisi kuphela.					
3.18 Izinsiza zokuzihlolela igciwane lengculazi kumele zitholakale emitholampilo kuphela.					

ISIGABA 4: IMIZWA NGOKUVULELEKA NGEMIPHUMELA EKHOMBISA UKUBA NEGCIWANE LENGCULAZI

Khombisa ukungavumelani/ukuvumelana kwakho nalezitatimende izelandelayo:

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angivumi Angiphiki	Ngiyavuma	Impela ngiyavuma
4.1 Imiphumela ekhombisa ukuba negciwane lengculazi kumele ibe yimfihlo.					
4.2 Umuntu onegciwane lengculazi kumele amtshale lowo anobudlelwano naye ngokocansi.					
4.3 Abantu abanegciwane lengculazi kumele babatshele labo asondelene nabo.					

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angivumi Angiphiki	Ngiyavuma	Impela ngiyavuma
4.4 Abantu abanegciwane lengculazi kumele bakhululeke ngokukhuluma ngako.					

ISIGABA 5: IMIBONO NGOKUHLA NOKUNGEKUHLE NGOKUZHLOLELA IGCIWANE LENGCULAZI

Khombisa ukungavumelani/ukuvumelana kwakho nalezitatimende izilandelayo ngokuhle nokungekuhle okungenzeka ngokuzihlolela igciwane lengculazi:

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angiphiki Angivumi	Ngiyavuma	Impela ngiyavuma
5.1 Kunesiqiniseko sokugcinwa kwemfihlo.					
5.2 Sincane isikhathi esichitheka emtholampilo noma esibhedlela.					
5.3 Bangingi abantu abangazazi ukuthi banalo noma abanalo igciwane lengculazi.					
5.4 Abantu abesabayo ukuya emtholampilo bangazihlola ekhaya.					
5.5 Abantu bangakwazi ukuthola imishanguzo yengculazi bengakaguli kakhulu.					

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angiphiki Angivumi	Ngiyavuma	Impela ngiyavuma
5.6 Bancane abantu abangatheleleka uma bezazi ukuthi banalo noma abanalo yini igciwane lengculazi.					
5.7 Abantu bangakwazi ukuzihlola bepindelela.					
5.8 Kungenzeka abantu bangayifundi kahle noma bangayihumushi kahle imiphumela.					
5.9 Kungenzeka abantu bangayifundi noma bangayiqondi kahle imiyalelo.					
5.10 Abantu bangathelela abanye ngegciwane lengculazi ngenhloso uma bengelulekwanga kahle.					
5.11 Izingane nabasebenzi bangahlolwa ngaphandle kwe yabo.					

Isitatimende	Impela ngiyaphika	Ngiyaphika	Angiphiki Angivumi	Ngiyavuma	Impela ngiyavuma
5.12 Amalunga omndeni angahlolwa ngaphandle kwentando yabo okungaholela ekutheni bahlukumezeke.					
5.13 Abantu bangasola abanye uma bezithola benegciwane lengculazi.					
5.14 Uma umuntu engakutholanga ukwelulekwa angazama ukuzibulala uma umphumela uthi unegciwane lengculazi.					
5.15 Uma uhulumeni engalawuli kahle, kungadayiswa izinsiza zokuzihlolela ezingathembekile ezinganikeza imiphumela engeyona.					

Siyabonga ukuba yingxenye yalolucwaningo

Appendix 11: Letter from the Statistician

Gill Hendry B.Sc. (Hons), M.Sc. (Wits), PhD (UKZN)
Mathematical and Statistical Services

Cell: 083 300 9896
email : hendryfam@telkomsa.net

26 April 2016

To whom it may concern

Please be advised that I will be assisting Ms S.D. Gumede (student number 21644760) who is presently studying for a Master of Health Sciences in Nursing with the statistical aspects of her study.

Yours sincerely

Gill Hendry (Dr)

Appendix 12: Certificate from the professional editor

DR RICHARD STEELE

BA, HDE, MTech(Hom)

HOMEOPATH

Registration No. A07309 HM

Practice No. 0807524

Freelance academic editor

Associate member: Professional Editors'

Guild, South Africa

110 Cato Road

Glenwood, Durban 4001

031-201-6508/082-928-6208

Fax 031-201-4989

Postal: P.O. Box 30043, Mayville 4058

Email: rsteele@telkomsa.net

EDITING CERTIFICATE

Re: Sibongiseni Daphney Gumedé

**Master's dissertation: KNOWLEDGE, ATTITUDES AND PERCEPTIONS OF
HEALTH CARE USERS TOWARDS HIV SELF-TESTING AT SELECTED
GATEWAY CLINICS AT ETHEKWINI DISTRICT, KWAZULU-NATAL**

I confirm that I have edited this dissertation and the references for clarity, language and layout. I am a freelance editor specialising in proofreading and editing academic documents. My original tertiary degree which I obtained at the University of Cape Town was a B.A. with English as a major and I went on to complete an H.D.E. (P.G.) Sec. with English as my teaching subject. I obtained a distinction for my M.Tech. dissertation in the Department of Homeopathy at Technikon Natal in 1999 (now the Durban University of Technology). During my 13 years as a part-time lecturer in the Department of Homoeopathy at the Durban University of Technology I supervised numerous Master's degree dissertations.

Dr Richard Steele

05 May 2017

electronic