

**FACTORS INFLUENCING UTILIZATION OF
VOLUNTARY COUNSELING AND TESTING SERVICES
AMONG KENYA PORTS AUTHORITY EMPLOYEES IN
MOMBASA, KENYA**

JANE WANGUI KARANJA

MASTER OF SCIENCE

(Public Health)

**JOMO KENYATTA UNIVERSITY OF
AGRICULTURE AND TECHNOLOGY**

2017

**Factors Influencing Utilization of Voluntary Counseling and Testing
Services among Kenya Ports Authority Employees in Mombasa,
Kenya**

Jane Wangui Karanja

**A Thesis Submitted in Partial fulfillment for the Degree of Master of
Science in Public Health in the Jomo Kenyatta University of
Agriculture and Technology**

2017

DECLARATION

This thesis is my original work and has not been presented for a degree award in any University

Signature.....Date.....

Jane Wangui Karanja

This thesis has been submitted for examination with our approval as University supervisors

Signature.....Date.....

Prof. Gideon M. Kikuvi, PhD

JKUAT, Kenya

Signature.....Date.....

Dr. Joseph B. Msanzu, PhD

TUM, Kenya

DEDICATION

This thesis is dedicated to my late parents Baba Joseph Kamau and Mama Dorothy Muthoni. Thank you for teaching me the value of discipline and hard work.

ACKNOWLEDGEMENT

First, I would like to thank you my Father God for your grace and mercy and for giving me strength to undertake this research. I am grateful to my employer Kenya Ports Authority for sponsoring and granting me permission to carry out research in the Authority. I am also indebted to Jomo Kenyatta University of Agriculture and Technology (JKUAT) in Mombasa for giving me an opportunity to train in the institution. My sincere appreciation goes to my supervisors, Prof. Gideon M. Kikuvu and Dr. Joseph B. Msanzu for their guidance, patience and encouragement during the preparation and writing of this thesis. I would like to thank my course coordinator Ms. Mary Kerich and my colleagues at JKUAT Mombasa, MPH class of September 2013, who have been my inspiration. I am also indebted to my fellow employees in the Medical department at the Kenya Ports Authority – Mombasa, particularly Rebecca Kamau, for encouraging me to ‘hang on’. My sincere appreciation to all the administrators in Kenya Maritime Authority and Kenya Ports Authority for assisting me during data collection. Last but not least, I salute all the employees in Kenya Ports Authority where I carried out the research, for accepting to be my respondents and for taking time out off their busy schedules to fill in the questionnaires.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	xii
LIST OF FIGURES	xiv
LIST OF APPENDICES	xv
ABBREVIATIONS AND ACRONYMS.....	xvi
ABSTRACT	xviii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background information	1
1.2 Statement of the Problem	6
1.3 Justification of the study	7
1.4 Objectives.....	8
1.4.1 Broad objective	8

1.4.2 Specific objectives.....	9
1.5 Research questions	9
1.6 Conceptual Framework	9
CHAPTER TWO.....	11
LITERATURE REVIEW.....	11
2.1 Socio-demographic characteristics and VCT	12
2.1.1 Age and VCT	12
2.1.2 Gender and VCT	14
2.1.3 Marital status and VCT	15
2.1.4 Education and VCT	17
2.1.5 Religion and VCT	18
2.2 Determinants of proportion taking up VCT Services (Motivational Factors)	20
2.2.1 Willingness to take an HIV test.....	20
2.2.2 Motivation to take an HIV test.....	21
2.2.3 Communication of HIV results	22
2.2.4 Accompanying of partner to VCT.....	23
2.2.5 Condom use.....	25

2.3 Knowledge, attitudes and practices associated with utilization of VCT services	27
2.3.1 Availability of ARVs	27
2.3.2 Confidentiality	28
2.3.3 Fear of positive results	30
2.3.4 Risk of HIV infection.....	31
2.3.5 Stigma and Discrimination.....	32
2.3.6 Disclosure of HIV status	34
CHAPTER THREE	37
MATERIALS AND METHODS	37
3.1 Study Site	37
3.2 Study design	38
3.3 Study Variable.....	39
3.3.1 Independent variables.....	39
3.3.2 Dependent Variable.....	39
3.4 Study population	39
3.4.1 The inclusion criteria.....	39

3.4.2 Exclusion criteria.....	39
3.5 Sample Size Determination	40
3.6 Sampling techniques	41
3.7 Data collections tools	43
3.8 Pre-Testing of data collection tools.....	43
3.8.1 Validity.....	43
3.8.2 Reliability	44
3.9 Data Collection.....	44
3.10 Data Management and analysis	45
3.11 Ethical Considerations.....	45
CHAPTER FOUR.....	47
RESULTS.....	47
4.1 Response Rate	47
4.2 Socio-demographic Characteristics of study respondents.....	47
4.2.1 Distribution of study respondents' by gender	47
4.2.2 Distribution of study respondents' by age.....	48

4.2.3 Distribution of study of marital status of respondents	49
4.2.4 Respondents' Level Education.....	49
4.2.5 Religion of respondents.....	50
4.2.6 Socio-demographic characteristics and VCT uptake	51
4.3 Proportion of the KPA employees who utilized VCT	52
4.3.1 Employees who had ever tested for HIV	52
4.3.2 Duration since last HIV Test.....	52
4.3.3 Frequency of HIV testing.....	53
4.3.4 Motivation for taking HIV test.....	54
4.3.5 Reasons for not taking HIV test.....	54
4.3.6 Facilities Utilized for HIV Testing	55
4.3.7 Feedback of HIV Test Results	56
4.3.8 Involvement of Partner in HIV Testing	56
4.3.9 Employers' Treatment of HIV Positive Employees.....	57
4.3.10 Risk Factors in HIV infection	58
4.3.11 Proportion of employees who utilized VCT services and VCT uptake	58
4.4 Factors associated with utilization of VCT services among KPA employees	59

4.4.1 Knowledge on VCT utilization and HIV/AIDS	59
4.4.2 Respondents' Action when found HIV positive	60
4.4.3 Respondents' Action when partner found HIV positive	61
4.4.4 Reaction if partner tested HIV positive.....	62
4.4.5 Reaction when workmate is found HIV positive	63
4.4.6 Disclosing HIV Status	64
4.4.7 Handling of HIV positive people	64
4.4.8 Observed Trends in HIV Testing at KPA Mombasa.....	65
4.4.9 Regression analysis	66
CHAPTER FIVE.....	67
DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.....	67
5.1 Discussion	67
5.1.1 Socio-demographic Characteristics of the KPA employees	67
5.1.2 Proportion of the KPA employees who utilized the VCT services.....	68
5.1.3 Knowledge, attitudes and practices associated with utilization of VCT services	71
5.1.4 Relationship between Variables	72
5.2 Conclusion.....	73

5.3 Recommendation.....	74
5.4 Areas for Further Research	75
REFERENCES	76
APPENDICES	97

LIST OF TABLES

Table 3.1: Number of respondents per division	42
Table 4.1: Proportion of respondents by Level of Education at KPA, 2015.....	50
Table 4.2: Proportion of respondents by religion at KPA, 2015.....	50
Table 4.3: Socio-demographic characteristics and VCT uptake at KPA, 2015.	51
Table 4.4: Duration from last HIV test in KPA, 2015.	53
Table 4.5: HIV test frequency at KPA, 2015.	53
Table 4.6: Respondents reasons for not taking HIV test, KPA 2015.....	55
Table 4.7: Involvement of Partner in HIV Testing in KPA, 2015.	57
Table 4.8: Employers' treatment of HIV positive employees in KPA, 2015.....	57
Table 4.9: Risk factors among employees in KPA, 2015.	58
Table 4.10: Proportion of employees who utilized VCT services and VCT uptake in KPA, 2015.....	59
Table 4.11: Knowledge on VCT utilization and HIV/AIDS in KPA, 2015.....	60
Table 4.12: Respondents' Action when found HIV positive in KPA, 2015.	61

Table 4.13: Respondents' Action when partner found HIV positive in KPA, 2015.....	62
Table 4.14: Handling of HIV positive people in KPA, 2015.....	65
Table 4.15: Observed Trends in HIV Testing at KPA Mombasa, 2015.	65
Table 4.16: Regression Coefficients	66

LIST OF FIGURES

Figure 1.1: Conceptual frame work	10
Figure 3.1: Map of Mombasa (Source: Google map, 2014)	38
Figure 4.1: Distribution of respondents by gender at KPA, 2015.....	47
Figure 4.2: Distribution of respondents by age at KPA, 2015.	48
Figure 4.3: Marital status of respondents at KPA, 2015.	49
Figure 4.4: Proportion of respondents who had tested for HIV in KPA, 2015.....	52
Figure 4.5: Motivation for taking HIV test by respondents in KPA, 2015.....	54
Figure 4.6: Facilities Utilized for HIV Testing in KPA, 2015.....	55
Figure 4.7: Proportion of respondents who received feedback of HIV test in KPA, 2015.	56
Figure 4.8: Reaction if partner tested HIV positive in KPA, 2015	63
Figure 4.9: Reaction when workmate is found HIV positive KPA, 2015.....	63
Figure 4.10: Disclosing HIV Status in KPA, 2015.	64

LIST OF APPENDICES

Appendix I: Participants Consent Form (English) Informed Consent for Employees at Kenya Ports Authority	97
Appendix 2: Participants Consent Form (Kiswahili)	99
Appendix 3: Questionnaire (English)	101
Appendix 4: Questionnaire (Kiswahili)	110
Appendix 5: Jkuat Approval Letter.....	118
Appendix 6: Kenya Maritime Authority Approval Letterb	119
Appendix 7: KPA Approval Letter	120
Appendix 8: Certificate of Ethical Approval	121
Appendix 9: Publication	122

ABBREVIATIONS AND ACRONYMS

AIDS	-	Acquired Immune Deficiency Syndrome
ARV	-	Anti- retroviral
ART	-	Anti-retroviral Therapy
CCC	-	Comprehensive Care Clinic
FGD	-	Focus Group Discussion
HIS	-	Health information system
HIV	-	Human Immuno Deficiency Virus
HIV RNA		Human Immunodeficiency Virus-Ribonucleic Acid
ILO	-	International Labour Organization
ITF	-	International Transport workers’ Federation
KAIS	-	Kenya AIDS Indicator Survey
KDHS		Kenya Demographic Health Survey
KMA	-	Kenya Maritime Authority
KNASP	-	Kenya National HIV and AIDS Strategic Plan
KPA	-	Kenya Ports Authority
LAPSSET	-	Lamu Port-Southern Sudan-Ethiopia Transport

Project

MSM	-	Men who have sex with men
NACC	-	National AIDS Control Council
NASCOP	-	National AIDS and STI Control Programme
OI	-	Opportunistic infections
PLHIV	-	People living with HIV and AIDS
PMTCT	-	Prevention of Mother to Child Transmission of HIV
SPSS	-	Statistical Package for Social Sciences
STI	-	Sexually Transmitted Infections
UNAID	-	The Joint United Nations Programme on HIV and AIDS
UNGASS	-	United Nation General Assembly Special Sessions
VCT	-	Voluntary Counseling and Testing
WHO	-	World Health Organization

ABSTRACT

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) remains a problem of public health importance worldwide. About 36.9 million people were living with HIV and AIDS by the end of 2014. The greatest burden of the epidemic with about 25.8 million people living with HIV was in Sub-Saharan Africa which also accounted for 66% of the global total of new HIV infections. In Kenya, HIV burden stands at approximately 1.6 million. Early access to testing and treatment would facilitate containing the pandemic by 2020 and end AIDS epidemic by 2030 (UNAIDS, 2014). Voluntary Counseling and Testing (VCT) aids stigma reduction and also allows for early uptake of services such as counseling for positive living, social support, legal advice and future planning. The objective of this study was to determine factors influencing utilization of voluntary counseling and testing services among Kenya Ports Authority employees in Mombasa. The study participants were drawn from the 8 divisions in KPA using probability proportion to size sampling method (PPS). Respondents within divisions were then randomly selected. Quantitative data was collected using pre-tested structured questionnaires which were administered to 385 respondents. Data was analyzed using the Statistical Package for Social Sciences Version 16 (SPSS 16). Descriptive statistic was used to analyze quantitative data. Marital status was significantly associated with VCT uptake among KPA employees ($p=0.015$). However there was no significant association between age, education and religion of the respondents and VCT uptake. Majority (91.2%) of the respondents reported having had an HIV test and the main reason was to know their status. However, only 24.4% respondents were tested for HIV in KPA VCT centre. Although many respondents took the HIV test more than once (68.8%), some declined due to no apparent reason, felt it not necessary, feared positive results or thought there was no cure for AIDS. However, those who were tested received feedback promptly (80%) and communicated the test results to their partners (74.9%), although majority did not accompany their partners (56.6%). Accompanying a partner ($p=0.017$) was significantly

associated with VCT uptake. The respondents agreed that ARVs improved immunity and prolonged life (85.4%) however majority felt uncomfortable being tested for HIV by someone they knew (63.4%). Fewer females (37.6%) disclosed their HIV results compared to males (62.4%) and more male (66.9%) than female (33.1%) respondents used condoms during sex. The study further indicated that there was a marginal relationship between VCT uptake and the aspect of being denied recruitment or promotion because of HIV status (odds ratio at 95% CI: 0.982, 2.886; $p=0.057$). Multiple regression analysis was conducted to determine the relationship between dependent and independent variables which showed that all the variables had positive level of significant ($p<0.05$). In conclusion, fewer employees reported to have ever been tested for HIV in KPA VCT in spite of less stigma and discrimination and VCT centres being at the workplace. More so, fewer employees preferred being tested by a person known to them while some declined the HIV test because of fear of positive HIV results. The main reasons for majority of employees not to accompany their partners to VCT were fear of being denied conjugal rights, being divorced or abandoned. This was also the main reason why fewer females than males reported having used condom during sex, in spite of benefits, and for more males disclosing their HIV status to their partners. Hence, new innovative methods need to be devised in order to motivate employees to utilize the VCT services in KPA. These include provision of VCT services for 24 hours, inclusion of external providers on rotational basis and initiation of programmes that will de-stigmatize HIV and AIDS at the workplace. Couple counseling should be encouraged so as to increase the level of HIV disclosure, especially among females. Females should be empowered so that they can negotiate for safer sex.

CHAPTER ONE

INTRODUCTION

1.1 Background information

Statistics on Human Immunodeficiency Virus (HIV) by Joint United Nations Programme on HIV and AIDS (UNAIDS) indicate that by end of 2014 approximately 36.9 million people were living with HIV that causes Acquired Immunodeficiency Syndrome (AIDS), up from 35 million from the preceding year (UNAIDS, 2015). In 2014, about 2 million people became newly infected with HIV and 1.5 million died of AIDS related causes worldwide (UNAIDS, 2015). Although HIV and AIDS was prevalent in all parts of the world, some areas were more afflicted than others (UNAIDS, 2012).

About half of the 35 million people who were living with the virus did not know their status therefore they were likely to pass the virus to others (UNAIDS, 2014). Early access to testing and treatment would facilitate containing the pandemic. Medical evidence showed that people under treatment were unlikely to pass on the virus to partners (UNAIDS, 2014). According to UNAIDS (2014), 25.8 million people were living with HIV in sub-Saharan Africa who accounted for 66% of the global total of new HIV infections. In 2012 alone, approximately 1.6 million people in the region became newly infected and approximately 1.2 million adults and children died of AIDS, thus accounting for 75 percent of the world's AIDS deaths in 2012 (UNAIDS, 2013).

South Africa had the highest number of AIDS infections in the world with a prevalence of 5.6 million, followed by Nigeria (3.3 million), and India (2.4 million).

Kenya is in the fourth position with a prevalence of 1.6 million of people living with HIV (UNAIDS, 2012). Heterosexual exposure is the primary mode of transmission in sub-Saharan Africa and accounts for 80% of new infections globally (UNAIDS, 2010). Where epidemics have matured, new infections among people in steady, long-term partnerships were often high (UNAIDS, 2010).

The first HIV case was diagnosed in Kenya in 1984 and the disease became a major cause of morbidity and mortality. In 2012, an estimated 1.6 million people were living with HIV, and approximately 57,000 people died from AIDS-related illnesses (UNAIDS, 2013). Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) strained the resources allocated to the health sector since there was an increasing number of persons seeking health services. By 2012, this had fallen to 6.1 percent due to the rapid scaling up of antiretroviral treatment (UNGASS, 2014). However, there were 1.1 million children orphaned by HIV and AIDS (UNAIDS, 2013).

Kenya has both a generalised HIV infection affecting all sections of society including children, women and men; and a concentrated epidemic among key populations who included sex workers and their clients, men having sex with men, and people who inject drugs among others (KAIS, 2012). There is also considerable variation in HIV

prevalence in Kenya, some regions being more affected than others. The KAIS of 2011 reported that Nyanza had the highest prevalence of 15.1% while North Eastern region had the lowest prevalence of 2.1% (KAIS, 2012).

By 2012, over half (53%) of HIV-infected persons in Kenya did not know they were HIV infected because they had never been tested for HIV or had been tested but did not receive the results, or believed to be HIV-uninfected based on their last HIV test results (KAIS, 2012). This meant approximately 1,192,000 adult and adolescent Kenyans aged 15 to 64 years were living with HIV and an estimated 633,000 were unaware of their HIV status (KAIS, 2012). Levels of HIV testing have recently increased with 72% of adults aged 15 to 64 having been tested, a significant increase from 34% in 2007 (KAIS, 2012).

In Mombasa County, 175,021 clients attended Voluntary Counseling and Testing (VCT) and were counseled and tested; 88,977 were female while 86,044 were male (KAIS, 2012). Diagnosis of HIV cases through counseling and testing served as an entry to the treatment and prevention services necessary to improve life quality for persons infected, thus reducing transmission (WHO, 2012). Early initiation of Anti-retroviral Therapy (ART) has been shown to reduce HIV transmission efficiency categorically in clinical trial settings (Cohen *et al.*, 2011; Anglemyer *et al.*, 2011). Therefore, effective HIV testing strategies are noted as a critical strategy for the UNAIDS's goal of "getting to zero" and achieving an "AIDS free generation" (WHO, 2014).

Voluntary Counseling and Testing programmes are regarded as an important strategy in the management of the HIV and AIDS pandemic worldwide. VCT became one of the most effective and popular ways of diagnosing people who might have been exposed to the virus or who had been infected (NASCOP, 2010). The key word is 'voluntary' and people should not be coerced to test for HIV. VCT usually involves two counseling sessions: one prior to taking the test known as "pre-test counseling" and the other after the HIV test when the results are announced, often referred to as "post-test counseling" (NASCOP, 2010). Confidential dialogue play a pivotal role between client and care provider aiming at enabling the client to cope with stress and make proper personal decisions related to HIV and AIDS (UNAIDS/WHO 2004). VCT is an effective communication tool for preventing the HIV spread especially in communities where the epidemic is widespread. Voluntary Counseling and Testing allowed individuals to find out their own HIV status in order to re-evaluate their lives' or face the dire consequences of such risky life practices.

Clients who decided to take the HIV test had to give consent before the test could be administered. Informed consent played a critical role in the VCT process and it was important that the individual was aware of their right to refute any medical procedure, to be informed about it, and to concur to it (UNAIDS/WHO 2004). Informed consent for testing implied that the person being tested understood HIV testing procedures, the reasons for testing and the personal implications of testing before agreeing to be tested (NASCOP, 2010).

The VCT initiative was also important because it promoted and maintained behaviour change (Fonner *et al.*, 2012). It facilitated an early referral and support service, that is, access to antiretroviral therapy, linked with prevention of mother to child transmission (PMTCT), sexually transmitted infection (STI), and opportunistic infection (OI) services (NASCOP, 2010). VCT also aided in stigma reduction and also allowed for early uptake of services, for instance, counselling for positive living, social support, legal advice and future planning (NASCOP, 2011).

The target group of this study was the 6690 employees of Kenya Ports Authority (KPA) in Mombasa County which is the second largest port in Africa whose workers are mostly male. The study was based on the ITF (2011) report that most of the 34 million people living with HIV (PLHIV) around the world were workers, and transport was one of the most heavily affected sectors. Most port workers were non-mobile transport workers but came into daily contact with many mobile workers such as truckers, and seafarers, and thus increased the risk of contracting HIV.

Studies in some port cities such as Vancouver in Canada, Tema in Ghana, Mumbai in India and Mombasa in Kenya, were found to have higher prevalence rates of HIV than the national population (ITF, 2011). This necessitated KPA to embark on HIV education and eventually establishment of HIV and AIDS policy in 2009 (ITF, 2011). The policy was to guide in prevention, care and treatment and support for the infected and affected employees. However, there has been no documented research since the 1990s.

Fear of stigma and discrimination have been reported as the major impediment for VCT uptake, disclosure of the HIV status and commencement of ARVs (WHO, 2011). While stigma and discrimination related to HIV and AIDS was decreasing, the fundamental human rights of employees infected or affected by HIV was still being undermined; these employees were seen as part of the problem rather than the solution to the HIV problem (Aggleton *et al.*, 2005).

HIV testing in KPA is now simpler and it is performed on the spot unlike before where the employee could wait up to two weeks for the results. The availability and access to antiretroviral drugs for those employees who were eligible to receive them have added momentum to the utilization of VCT service (NASCOP, 2012). This study sought to gain insight and understanding concerning the benefits, as well as the challenges faced by employees in the utilization and/or non- utilization of the VCT services at the workplace. Thus, the study could assist the KPA management in investing more resources into VCT services so as to improve and retain the skills base, experience and expertise.

1.2 Statement of the Problem

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) have had a large impact on labour and productivity. The majority of people living with HIV are of the productive working age (15-49 years old). According ILO, approximately 36 million people who were engaged in income generating activities were

living with HIV by the year 2014. More worrying was the prediction that by 2020 approximately 36 African countries would encounter losses of between 10% and 30% or more in their workforce (ILO, 2004). According to HIV/AIDS and Port Workers (2013), there was a higher prevalence of HIV and AIDS among port workers around the world as compared with the general population. By mid 1990s approximate 27% of all employees in KPA were HIV positive and about 12 staff and/or dependants were dying each week (ITF, 2011). The KPA incurred costs in terms of treatment, lost qualified workers due to HIV and AIDS, increased absenteeism due to illness and attendance at funerals which reduced actual working hours, and thus reduced productivity (ITF, 2011). This led to the introduction of HIV education and eventually establishment of HIV and AIDS policy in 2009 (ITF, 2011), and VCT services. However, there is no documented study on how the port workers were utilizing the VCT services for the purposes of reducing the HIV and AIDS scourge.

1.3 Justification of the study

According to public sector workplace policy on HIV and AIDS, people affected most by HIV and AIDS were between 15 and 49 years old (Ministry of State for Public Service Public Sector, 2010). However there is no data utilization of the VCT services by port workers. The outcome of this study will be helpful in expanding and improving the services of VCT in KPA. In a broader scale this study may act as a guiding tool to other ports in the world to initiate and enhance VCT services at the workplace. This would enable reaping of benefits of early HIV testing by employees which include linkage to

HIV care and support services, thus improving quality of life and prolonging of life to the PLHIV (NASCOP, 2010). The employees would also prevent the spread of the disease through risk reduction and behavior change (Marks, 2005). There would also be a reduction of mother-to-child transmission since the female employees would know their HIV status early. If they were HIV positive, they would be commenced on ARVs early and thus prevent the transmission of the virus to their unborn babies (NASCOP, 2012). In addition, there would be reduction of stigma and discrimination in the workplace concerning HIV and AIDS in general, and especially towards PLHIV (Ministry of State for Public Service, Public Sector, 2010). This would be achieved in part through the implementation of HIV at workplace policy (Neema *et al.*, 2009). The employer would benefit from reduced hospitalization, which would in return reduce indirect costs by the employees (ITF, 2011).

1.4 Objectives

1.4.1 Broad objective

To determine factors affecting utilization of voluntary counseling and testing services among Kenya Ports Authority employees in Mombasa County.

1.4.2 Specific objectives

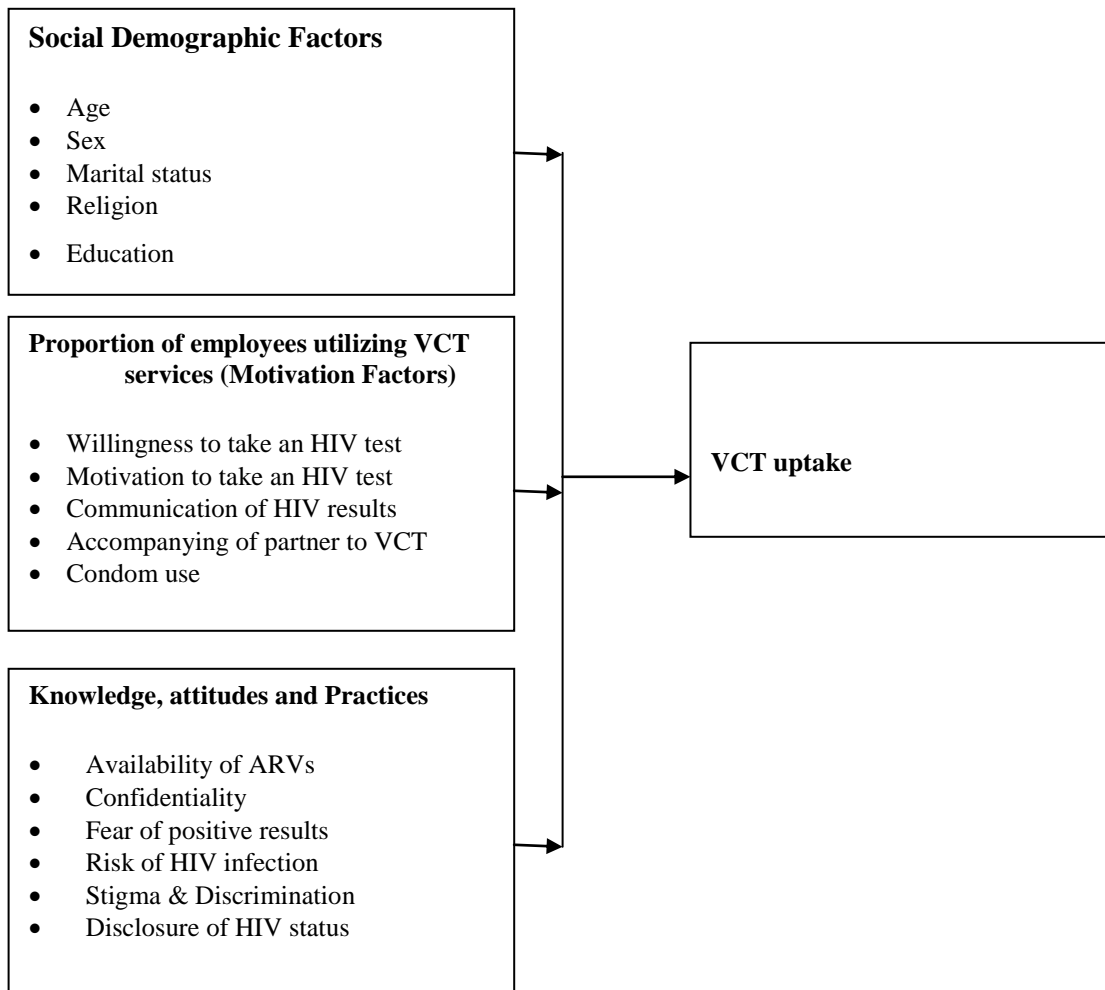
- i. To determine the socio-demographic characteristics of the KPA employees in Mombasa County in 2015.
- ii. To establish the proportion of KPA employees utilizing the VCT services in Mombasa County in 2015.
- iii. To determine knowledge, attitudes and practices associated with utilization of VCT services among KPA employees in Mombasa County in 2015.

1.5 Research questions

- i. What are the socio-demographic characteristics of the KPA employees in Mombasa County in 2015?
- ii. What is the proportion of KPA employees utilizing the VCT services in Mombasa County in 2015?
- iii. What are the knowledge, attitudes and practices associated with the utilization of VCT services among KPA employees in Mombasa County in 2015?

1.6 Conceptual Framework

Based on the literature review and the objectives of the study, the conceptual framework (Fig. 1.1) was developed to propose how different variables (independent) would influence the VCT uptake (dependent variable)



Independent variables

Dependent Variable

Source: Researcher (2016)

Figure 1.1: Conceptual frame work

CHAPTER TWO

LITERATURE REVIEW

Voluntary Counselling and Testing (VCT) for HIV is a process that is undertaken when a person wanted to find out if they were infected with HIV. It is an important tool for preventing the spread of HIV and also allows for an individual to find out their own HIV status in order to evaluate their behaviour and its consequences. VCT was identified by KNASP III as a cornerstone of Kenya's efforts to address HIV (NACC & NASCOP, 2012). Voluntary Counseling and Testing facilitated early referral to care and support services, including access to antiretroviral therapy and was an important linkage with Prevention of Mother to Child Transmission (PMTCT), Sexually Transmitted Infection (STI), and Opportunistic Infection (OI) services (NASCOP, 2012). It also assisted in stigma reduction and allowed for early uptake of services such as social support, legal advice, counselling for positive living and future planning (NASCOP, 2010).

Kenya declared HIV a national disaster in 1999 when only three voluntary counseling and testing sites were operating (NASCOP, 2011).

Voluntary Counseling and Testing centres rose to more than 1,000 in 2010 and 4,438 health facilities offered the services (NASCOP, 2011). In 2011, 65% of all health facilities, including more than 78% of public sector facilities, offered HIV counseling and testing services (NACC & NASCOP, 2012). HIV testing and counseling services are offered free of charge at all public health facilities (NACC & NASCOP, 2012). This

chapter reviewed the literature on factors influencing utilization of VCT services among Kenya Ports Authority employees Mombasa, Kenya which included socio-demographic characteristics of employees, proportion of KPA employees utilizing the VCT services and Factors associated with utilization of VCT services among KPA employees. It also focused on review on previous work related to the study and knowledge gaps.

2.1 Socio-demographic characteristics and VCT

2.1.1 Age and VCT

According to WHO (2013), VCT uptake among young people is significantly lower despite over 50% young people between age of 10-24 being affected by HIV globally. A sub-Saharan Africa survey done in 2005-2010 indicated that only 10% male and 15% female of ages 15-24 years knew their HIV status (WHO, 2013). The low response to VCT services among young people was reported to be associated with varied factors which included fear, anxiety and stress of knowing their HIV status (WHO, 2013). Similar findings were reported in a study done in Ethiopia among young people in 2010 (Gatta, 2011) where fear from anxiety and stress was found to influence VCT services uptake. In a study conducted in China Guizhou province, low VCT uptake was attributed to the perception of low risk of contracting HIV (Ma *et al.*, 2007). While studying VCT among secondary school students in Arusha, Tanzania, Sanga *et al.* (2015) observed that the rate of VCT services uptake increased with age. Higher VCT services uptake was found among respondents who were 18 years and above. This was attributed to increase

HIV education which made the respondents know the importance of testing for HIV. However, in another study by Sukari (2007) in the same country, utilization of VCT services decreased with age. The author argued that as age increases the young people become more sexually active and hence the fear of taking the HIV test. In order to increase utilization of VCT services by the youth, it is important to integrate VCT services or have outreach programs and increase the number of VCT centres that are youth friendly. Majority of adults above 50 years consider themselves to be at the low risk of HIV infection hence they do not take HIV test even though they are sexually active. Health care providers attributed the HIV symptoms among the elderly as normal aging process (Mutevedzi *et al.*, 2011) and there were no HIV preventive program for this age group (Ama *et al.*, 2012) which also has low level on knowledge on HIV transmission and prevention compared to those aged 25-49 years (Negin *et al.*, 2012). In Nigeria, Kalu *et al.* (2014) reported that HIV testing among males and females over the age of 50 years was low; they recommended that if HIV testing should be offered routinely it may increase linkage to care and treatment for those who will test HIV positive. On the contrary, Takele *et al.* (2015), reported that people who were older than 45 years were more likely to have been tested for HIV as opposed to the younger ones.

2.1.2 Gender and VCT

Gender is thought to be an important factor in VCT uptake. A study in four Asian countries indicated that men were tested for HIV when they had HIV related symptoms while the women were tested when their partners tested HIV positive (Paxton, 2005). Elsewhere, it was established that women were tested for HIV less frequently than men unless it was during the prenatal care (Obermeyer *et al.*, 2007). However, Greig *et al.* (2008) reported the contrary, women were accessing VCT services more than men even outside the PMTCT. A study by Snow *et al.* (2010) in Mpumalanga province, South Africa indicated that women accessing the PMTCT and VCT accounted for 72.7% compared to 27.3% men. Mindry *et al.* (2011) reported that in South Africa men seldom initiate discussions on HIV testing with their female partners and rely on their partners HIV test results to determine their own HIV status disregarding the issue of the serodiscordance.

In Lesotho Zerbe *et al.* (2012) reported that there was a better access for testing of women and strong fear for testing among men. The major barrier to testing among men was cited as poor access, stigma and confidentiality of the services (Bwambale *et al.*, 2008). Underutilization of HIV testing services by men significantly affected the health services (Peacock *et al.*, 2008). Since fewer men were taking the HIV test, women had to bear the burden of disclosing their HIV status to men with risk of stigma and abandonment (Greig *et al.*, 2008; Finnerty *et al.*, 2010). Men who might have contracted HIV from extramarital affair may be unlikely to disclose their status to their spouse

(Anglewicz *et al.*, 2011). Women who were between 18-29 years were much more likely to report partner violence than their counterparts who were HIV negative. Women also risked being blamed for bringing the infection in the home if they undergo HIV testing without notifying the partner (Maman *et al.*, 2001a).

In a study 2010 conducted in Kenya and Uganda clients preferred provider initiated HIV testing for diagnostic purposes because if they chose VCT it amounted to accepting being unfaithful (Hardon *et al.*, 2011). Men in most African countries are the key decision makers and also control resources that might be significant in HIV prevention and care hence improving men utilization of VCT may directly or indirectly influence women VCT utilization since most women will need the partner's consent to attend VCT (Demissie *et al.*, 2009).

2.1.3 Marital status and VCT

According to Glynn (2001), marital status was a risk factor for HIV infection and thus individuals who were married were more likely to be tested for HIV than the single ones and married individuals also readily accepted the VCT services compared to singles (Matovu *et al.*, 2005). On the contrary, a study done in Ethiopia found that unmarried teachers were more likely to visit VCT centre than married, widowed, divorced or separated ones. This could be because of their perceived risk of contracting HIV or fear of the likelihood of being HIV positive (Takele *et al.*, 2015).

In Africa; married women are still subjected to the husbands' authority and hence had to seek permission from their partner in order to avoid potential consequences in case they have to disclose a positive HIV test result (Orubuloye *et al.*, 1993; Keogh *et al.*, 1994). According to Emusu *et al.* (2009), women who tested HIV positive were forced to leave their homes by their HIV negative husband thus the importance of counseling concerning violence during pre- and post HIV testing cannot be overemphasized. On the other hand women who tested HIV negative reported that their husband deliberately tried to infect them by raping them so that they can later accuse the women of having infected them (Emusu *et al.*, 2009). However, a 2010 study in Zimbabwe found that men felt couple testing encouraged them to take the HIV test (Skovdal *et al.*, 2011) but most programs focused mainly on individuals thus making couple testing a challenge. The gender norm which suggests that real men do not get sick should be addressed in order to increase VCT uptake among men (Barker *et al.*, 2010b). In China, it was established that a couple living together had high chance of visiting VCT as opposed to those who were not (Rou *et al.*, 2009). This could be attributed to the psychological support that they offer to each other. A study on the role of men in PMTCT in Botswana indicated that men did not support women being tested without their permission (Kebaabetswe *et al.*, 2003).

In Kenya, accompanying a partner to VCT centre was found to increase the chances of *boda boda* operators (commercial cyclist) being tested for HIV (Odhiambo *et al.*, 2012). This could be attributed to the psychological support that they offer to each other. It was

established that women who were widowed, single or separated used VCT services less frequently even though they had a high HIV prevalence ranging from 17% to 21% (NASCO, 2008). Couples were at a high risk of contracting HIV if they did not know their own HIV status or that of their partner and still engaged in unprotected sex. Many couples also lack adequate knowledge on HIV/AIDS and they are unaware of discordance. HIV/AIDS awareness and testing campaign should be emphasized more on married couples (Omanje *et al.*, 2015).

2.1.4 Education and VCT

Thierman (2006) and Thior (2007) found that VCT services acceptance was higher in Zambian and Botswana pregnant women without any formal education. They argued that educated women may perceive themselves to be at lower risk of being infected by HIV, hence low VCT uptake. The uneducated ones felt less knowledgeable in deciding whether to take the test and will tend to rely on the healthcare providers. Another study in Nigeria revealed that higher education was associated with low uptake of VCT (Elcannem & Gbedegesin, 2004). On the contrary, a study done in Uganda indicated that women who had higher education were more likely to accept VCT (Fabiani *et al.*, 2003), in agreement with a study done in Mwanza - Tanzania which indicated that VCT uptake increased with the level of education (Wringe *et al.*, 2008). This was because the individuals were more knowledgeable on VCT and HIV hence more confident to take the HIV test and also had adequate skills on prevention of HIV.

2.1.5 Religion and VCT

In the mind of many people HIV virus is associated with a behaviour that is condemned by the religion as it has been equated to ‘a curse’ and those who live with it were viewed as ‘sinners’ (FHI, 2005). A study done among 246 black Africans living in London indicted that their religious beliefs did not prevent them from being tested for HIV or being commenced on antiretroviral (Fakoya, 2012). However, there was no association between HIV testing or the use of ARVs and the strength of religious identity and beliefs. Fakoya (2012) found that the belief that the respondents who disclosed their HIV status will be stigmatized and discriminated was 40% and was slightly more predominant among the respondents who attended the services more frequently.

Religious beliefs significantly shape individuals' outlooks on living with HIV and have been cited by PLHIV as major strategies for coping with HIV/AIDS (Makoae *et al.*, 2008). Also studies conducted in USA found that PLHIV used religion to cope up with their illness (Cotton *et al.*, 2006) and increase in religiousness was linked to slower disease progression (Ironson *et al.*, 2006). Most denominations and the government are now advocating mandatory pre-marital HIV testing. For instance in Nigeria, the Anglican Church was demanding for mandatory pre-marital HIV testing before the members wed in the church as it would contain the spread of the disease (Minchakpu, 2004). However, the study conducted by Uneke *et al.* (2007) showed a fairly high prevalence rate of HIV among couples intending to marry and thus justification for some religious organization to ask for mandatory pre-marital HIV testing. Some religious

leaders believed that insisting on mandatory pre-marital HIV testing was their genuine way of protecting those who were HIV negative from being infected (Luginaah *et al.*, 2005) but they ignored the fact that the intending couples may be in their window period.

Countries such as Bahrain, Guinea, the United Arab Emirates and Saudi Arabia have passed laws and policies mandating pre-marital HIV testing (Burns, 2010). However, a study on VCT testing and uptake among youth in Ethiopia, indicated that frequency of religious service attendance was significantly associated with low VCT uptake. The respondents who attended the religious service everyday were 0.627 times less likely to utilize VCT compared with others (Anteneh *et al.*, 2013). On the contrary, a study on VCT showed that religion had a great influence on the uptake of VCT in Tanzania (Mgoshha *et al.* 2009). In another study, they found that the proportion of Catholics using the VCT services was lower compared to other denominations. This could be attributed to the stand of the church on services offered at VCT, for instance condom and contraceptives (Mgoshha *et al.* 2009). In a study by Nyuzaghl *et al.* (2011), Christian women in Ghana were one and half times more likely to accept VCT than their Muslim counterparts. These results may have been attributed to the fact that Ghanaian population is mainly Christian and majority of the respondents were Christians.

2.2 Determinants of proportion taking up VCT Services (Motivational Factors)

2.2.1 Willingness to take an HIV test

According to UNAIDS (2014), the AIDS epidemic is expected to come to an end by 2030. This can be achieved if HIV testing is accessed by all. In Kenya, the levels of HIV testing has recently increased to 72% of adults aged 15 to 64 having been tested (KAIS, 2012). However, this is far less than the UNAIDS set "90-90-90" targets; aiming to diagnose 90% of all HIV positive people, provide antiretroviral therapy for 90% of those diagnosed and achieve undetectable HIV RNA for 90% of those on treatment by 2020.

Over half (53%) of HIV-infected persons in Kenya still do not know they are HIV infected because they had never been tested for HIV or had been tested but did not receive the results, or believed to be HIV-uninfected based on their last HIV test results (KAIS, 2012). The KHDS (2014) reports that over 53% women were tested in 2014 and received the results compared to men who were at 45%. To increase the level of testing in order to meet those set targets especially among men and special populations, concerted effort is needed and if possible provide free testing services in all facilities.

In Niigeria, Uzochukwu *et al.* (2011) found that over half of the respondents were unwilling to pay for the services inspite of knowing the benefits. Self-testing, for instance oral fluids test, should also be encouraged since the test is relatively convenient, noninvasive, has high cultural acceptance and maintains a high degree of accuracy (Gottfried *et al.*, 2006). The test will not only reduce the cost in terms of personnel, time

spent at a VCT facility but also increase confidentiality and empower the user (Corbett, 2007). However, this method of testing has not been widely accepted because there are concerns that an individual who test HIV positive may not access confirmatory test and may miss out care and support which were crucial (Pant *et al.*, 2013). There was also a concern that the kit might be used to test the potential partner before sexual intercourse and this may lead to violence if the partner declines to take the test. However more research is this unintended use is needed.

Despite the importance of VCT, no one should be subjected to the test without consent (HIV Act, 2006). In six African countries, more than two thirds of respondents indicated that they would take HIV test but those who were eventually tested were about 15% (Glick, 2005).

2.2.2 Motivation to take an HIV test

Studies by Haukoos *et al.* (2005) and Nglazi *et al.* (2012) showed that offering financial incentives, for instance providing transport to the testing centre, was found to be a motivating factor in taking the HIV test. Downing *et al.* (2001) reported that accessibility of the VCT centre was a motivating factor among the drug users in US because the site was readily available and the users did not need to travel far. Similarly, availability of HIV results after the test motivated the client to take the HIV test. For instance, rapid HIV screening test yielded results within half an hour (Downing *et al.*, 2001). However, if the result was positive, a confirmatory test like Western Blot could

be used. The client could also be motivated to test by the service provider visiting the familiar sites where the client lives or works and providing the services there (Bond *et al.*, 2005).

Offering counseling before and after testing allowed the client to make informed decisions and enhance behaviour change. It also helped the client to cope with the positive results. Other testing options, for instance oral fluid testing, could be provided if the client had blood withdrawal related phobias (Lauby *et al.*, 2006). Access to ART within the same facility would motivate an individual to take the test since the privacy and confidentiality will be maintained. Okiriamu (2013) established that marriage, family planning, insurance, plan for the future, protecting the partner, protecting the child, sickness and social belonging were some of the motivating factors of getting tested for HIV. Kleinman *et al.* (1978), reported that ‘important others’, for instance sexual partners, friends and relatives, played a role in motivating an individual to take the HIV test.

2.2.3 Communication of HIV results

There is inadequate information about how HIV results were communicated to the clients. Deciding to take the HIV test can be stressful and occasionally traumatic experience especially the period between the test and communication of the results (Vannotti *et al.*, 1994). The requesting clinician is the best person to inform the client of the result.

Providing the results of an HIV test, however, involves more than simply telling the patient that he or she was or was not infected. According to CDC (2006), education and counseling should be provided for both negative and positive results and in addition those who test HIV positive should be provided with emotional support. Those who test positive for HIV should be linked to counseling and treatment, and networks of peers could be activated to provide psychosocial support, encourage healthy living, and advocate for preventing transmission of the virus to others (Wamyenze *et al.*, 2013).

The best practice was to provide the HIV results face to face since this was the only way valuable post-test counseling can be offered (Devroeya *et al.*, 2001). However, positive and negative results can be conveyed on phone but the same counseling, education and support should be offered as in face to face delivery of results (Devroeya *et al.*, 2001). The CDC (2006) proposed that positive results should never be delivered by mail. However, health providers may have insufficient training due to limited resources or have heavy workloads and may not find time or space for counseling (Obermeyer, 2006).

2.2.4 Accompanying of partner to VCT

According to Achando (2010), heterosexual couple attending VCT together and eventual knowledge of partner's HIV status is low even though they represent the largest risk group for HIV in sub-Saharan Africa, with greater than 60% of new infections being transmitted within stable serodiscordant. If couple test and receive the HIV results

together, it can increase safer sex behaviour, support and timely uptake and adherence to ART (Unge *et al.*, 2010). On the other hand, failure to disclose can prevent access to treatment and care and to PMTCT interventions, hence a barrier to adherence (Duff, 2010). Despite the benefits, couples should not be coerced to take the test. Health workers should support the decisions of partners to test together irrespective of the length or stability of their relationship and the services offered. It should be all inclusive and nonjudgmental in order to encourage many couple to test for HIV. According to a study carried out in Nigeria, some religious groups insisted on pre-marital HIV testing because they believed “there was no need to continue marriage with somebody who already had a death sentence” (Arulogun *et al.*, 2010). Mandatory testing, besides being a human rights violation, may not lead to any positive outcomes in HIV prevention or treatment. Although the majority of the respondents consented to HIV testing because they were eager to know the status of their spouse, partner violence, fear of stigma and discrimination were cited as major barrier to testing (Achando, 2010).

The importance of couple counseling cannot be overemphasized this is because the majority of men and women in stable relationships are unaware of their partner’s status, and many people with an HIV-positive partner were not aware of their own status, thus transmission can frequently occur between partners (Kaiser *et al.*, 2011). Certainly, couples who receive counseling and support together may cope better with HIV infection and may strengthen communication within relationships than those who did not (Bunnell *et al.*, 2005).

2.2.5 Condom use

When used consistently and correctly, latex condoms are 98-99% effective in preventing HIV transmission, other sexually transmitted infections (STIs) and unintended pregnancies (WHO, 2002). Global modelling analysis estimated that condom use has prevented 50 million new infection since the onset of epidemic (Stover, 2014). Two rigorous studies of discordant couples indicated that HIV is very rarely transmitted when condom wear is always practiced. Majority of the countries with a high prevalence rate of HIV continue to depend on donor support for condoms. In Sub-Saharan Africa, only about 10 condoms were available to males between 15-64 years and approximately one female condom per eight female in 2013.

HIV preventive programs have to ensure availability of quality condom for those who need them and a supply of water-based lubricant to minimize condom failure during sexual intercourse, especially due to anal and vaginal dryness (WHO, 2012). The Kenyan government started actively promoting condom use in 2001 and distribution has increased ever since (NACC, 2010). However, one report from rural northern Kenya indicated that men could not access condoms due to shortage and had to wash and then re-use them or use plastic bags. This was partly because of inaccessible roads and also because condom were made available to government health centres which were fewer and far apart (IRIN, 2011). Kenya Demographic Health Survey (2014), indicated that only 40% of women and 43% of men who had two or more partners in the last one year, reported to have used condom last time they had sexual intercourse. According to Carey

(1999), condoms tested in the laboratory were completely impermeable to micro-organisms as small as viruses. Research also indicated condom break during vaginal sexual intercourse was less than 2% (CDC, 1999) and less than 4% during anal intercourse (Grady, 1994). In the research conducted by Worth (1989), people were not consistent in condom use even though they claimed to be; among 40%-70% of those who alleged to have used condoms, 100% were not wearing a condom in every sexual intercourse. In another study on condom use, women reported 100% condom usage during sex but it was found only 25% maintained 100% condom use (Gafos, 2010). According to the feminist researchers, many women especially those who have been in long time relationships do not have the power to negotiate for safer sex since most men often resist the use of the condom; it may be taken as a sign of lack of trust, love, closeness and fidelity (Higgins *et al.*, 2010). In Uganda, as HIV/AIDS epidemic matures, the spread is mainly through regular sexual partnership with discordant couples (Serwadda *et al.*, 1995; Nuwaha *et al.*, 1999) who use condoms inconsistently, either because they perceive themselves to be safe or because of the need to have children. Hence, there is need to promote condom usage alongside VCT uptake as a matter of urgency (Nuwaha *et al.*, 1999; Nuwaha, 2000).

Other studies done in Ethiopia and Kenya showed an increase in number of individuals having unprotected sex following HIV testing (Caroline *et al.*, 2010; Beliyu, 2011).

Low condom use could be attributed to the low awareness of possibility of being infected in future after initially having tested HIV negative. In a serodiscordant couple, a

partner who was HIV negative could be protected and remain HIV negative by consistently practicing safer sex using male and female condoms. The annual risk of transmission of HIV from an infected partner to an uninfected partner can be reduced from 20–25% to 3–7% in programmes where condom use is recommended for prevention (Dunkle, 2008).

2.3 Knowledge, attitudes and practices associated with utilization of VCT services

2.3.1 Availability of ARVs

According to UNAIDS (2014) by 2020, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy. UNAIDS (2015) reported that 15.8 million people living with HIV were accessing antiretroviral therapy (ART) globally, up from 13.6 million in June 2014, including people in resource-poor countries. Progress has been made in preventing mother-to-child transmission of HIV and keeping mothers alive. Seventy three percent (73%) of the estimated 1.5 million pregnant women living with HIV globally were accessing antiretroviral therapy to avoid transmission of HIV to their children; new HIV infections among children was reduced by 58% from 2000 to 2014 (UNAIDS, 2014). Some 86% of people living with HIV who know their status in Sub-Saharan Africa are receiving antiretroviral therapy, and nearly 76% of them have achieved viral suppression (UNAIDS, 2014). In Kenya, only 6,000 people were accessing ART in 2003 but in 2013 the number rose to 596,000 adults and 60,000 children, being equivalent to 42% adults and 31% children (NACC, 2014). Death from

AIDS-related illnesses dropped by 32% between 2009 and 2013 and HIV prevalence peaked at 10.5% in 1996, and had fallen to 6% by 2013 mainly due to the rapid scaling up of antiretroviral treatment (ART) (UNAIDS, 2014).

Antiretrovirals can motivate individuals to be tested for HIV, support the prevention of mother to child transmission, and help break down barriers of isolation, despair, stigma and discrimination (Piot *et al.*, 2001). Adherence to ART can be influenced by a number of factors, including the patient's social situation and clinical condition; the prescribed regimen; and the patient-provider relationship (Schneider *et al.*, 2004). According to the study conducted by Wakibi *et al.* (2011) in 2009, 336,980 patients accessed HAART and adherence reported varied from 48% in Kibera (Nairobi), 56.8% in Eldoret and 64% in Mombasa.

2.3.2 Confidentiality

The confidentiality of a person's HIV status is important because it means that personal information is private and it cannot be shared without consent. People with HIV and AIDS face discrimination when other people find out they have HIV. People will only get tested for HIV, if they know their HIV status will be kept private. According to the qualitative exploration study on the importance of confidentiality, accessibility and quality of service study by Njau *et al.* (2014), most respondents preferred HIV testing in a large sized hospital compared to a home-based one because it provided a greater degree of anonymity and the staff were perceived to provide more accurate results

because they tested many people. Some respondents felt they might be forced to disclose their HIV status if they took the HIV test at home since most relationships were not faithful (Njau *et al.*, 2014)). Most respondents also preferred older female counselors to younger ones because they felt that they were more experienced and will not divulge their information. Respondents preferred counselors who did not reside within the vicinity of the hospital because of fear that they might breach confidentiality. Turan (2008) established that women in Kenya would prefer to deliver at home rather than in the health facility in order to avoid being forced to take HIV test without informed consent or divulging their HIV results. A survey done in Botswana among 1,268 respondents in 2004, indicated that majority were in favour of routine testing but 43% believed that routine testing will deter people from visiting the health facility for fear of testing (Weiser *et al.*, 2003).

In the US reporting of AIDS cases included patients name and other identifying information although this has not been the trend (Gostin *et al.*, 1999). This is mainly because the benefits to the public health of this reporting were perceived to outweigh the risk to individuals (Lippincott *et al.*, 2000). However, CDC (1999), has recommended anonymous testing, in which name reporting is not possible, continue to be offered because HIV carries the risk of discrimination if confidentiality was breached.

In Kenya, national guidelines for HIV testing has shifted from anonymous to confidential HIV testing since this shift will improve the service provider's ability to provide enhanced care to the client (NASCOP, 2010). A study done by Odhiambo *et al.*

(2013) on *Boda boda* operators, found out that operators who were confident that their HIV test results will be kept confidential were more likely to be tested at the VCT than those who thought otherwise. This finding was contradicted by the study by Bwambale *et al.*, (2008) which reported that confidentiality of the test results was not significant in taking the HIV test.

2.3.3 Fear of positive results

Fear of knowing test result played a role in VCT interest and has been documented as a barrier among risk populations in the US (Kellerman *et al.*, 2002). A survey done in Indonesia among drug users in Bali province indicated that 55% of the respondents avoided taking the HIV test because of fear of positive results (Ford *et al.*, 2004). Another qualitative study carried in risk population confirmed that fear of knowing the test result was indeed a barrier to taking the HIV test (Sawitri *et al.*, 2006). Ford (2005) showed that respondents feared HIV positive results because there was no effective cure for AIDS and that nothing could be done if an individual tested HIV positive. According to the study by Orkis, (2008), respondents were not worried about their health and implication of the HIV positive results but about the reactions of their partners, family members and community at large.

2.3.4 Risk of HIV infection

Perception of not being at risk persists as a barrier to testing in the US, despite self-report of high-risk behaviors (Kellerman *et al.*, 2002). This is the same for the less developed countries. For instance, tuberculosis patients in Tamil Nadu, India declined HIV screening since they felt there were no risk behavior while some drug users in the US did not take the HIV test because they did not perceive themselves at risk (Downing *et al.*, 2001). According to KAIS (2012), over half (53%) of HIV-infected persons in Kenya do not know they are HIV infected. This usually because they do not realize that they are at risk (Liddicoat *et al.*, 2006) while others avoid testing because they are worried about the possibility of a positive test result. In sub-Saharan Africa, a large proportion of new HIV infections occur within stable relationships (Biraro *et al.*, 2013).

Several studies have found out that over 80% of married couples are not aware of their own or their partner's HIV status (Kaiser, 2011). Over 80% of all unprotected sex acts in Kenya, Uganda and Malawi by HIV-infected persons occur with spouses or cohabitating partners (Bunnell *et al.*, 2008; Anand *et al.*, 2009). According to the study by Chepngeno (2013), majority of older people did not consider themselves at risk of infection; women cited being sexually inactive while men with one or faithful sexual partner perceived minimal risk of HIV infection. Older people willing to be tested for HIV had a decreased likelihood of perceived risk compared with those unwilling to be tested.

2.3.5 Stigma and Discrimination

HIV-related stigma and discrimination refers to prejudice, negative attitudes and abuse directed at people living with HIV and AIDS. Over 50% of men and women in 35% of countries where data was available were reported having discriminatory attitudes towards people living with HIV (UNAIDS, 2015). This created a major barrier to preventing further infection, alleviating impact and providing adequate care, support and treatment. Fear of stigma and discrimination was cited as the main reason why people were reluctant to take HIV test, disclose their status and commence on ARVs WHO (2011). According to UNAIDS (2005), stigma can lead to discrimination and other violations of human rights; this has denied PLHIV their basic rights which include health-care, work, education, and freedom of movement. Women were affected most because of their vulnerability in the society and some have lost property and been divorced because of their HIV status. Stigma and discrimination has been extended to partners and children of those living with an HIV positive individual even when they were not infected themselves. In a study by Johnson (2012), only about two-thirds of PLHIV disclosed their HIV status to the members of their family for fear of stigma and discrimination and about half of these participants had experienced stigmatization from their spouse. One study found out that the respondents who reported high level of stigma were over four times more likely to report poor access to care (Sayles *et al.*, 2009) and this in turn increased global HIV and the number of AIDS-related deaths. People living with HIV and AIDS (PLHIV) can have internalized stigma, lowered self-esteem

depression and some may feel stigmatized by healthcare providers, thus they may not participate in programmes to prevent mother-to-child transmission of HIV (Garumma *et al.*, 2012). Studies have also indicated that healthcare providers also delay in accessing healthcare services because of the fear of stigma and discrimination (Dieleman *et al.*, 2007).

In order to develop necessary anti-stigma strategies and programs it is important to understand the magnitude and the underlying causes of stigma and discrimination among the healthcare worker (Cameron, 2007). According to Yahaya *et al.* (2010), some of the reasons for low utilization of VCT in Kwara state of Nigeria were found not only to be stigma and discrimination but also poverty and ignorance.

At the workplace, an employee living with HIV may suffer stigma from colleagues and employers for instance social isolation and ridicule or being discriminated for instance termination or refusal of employment. Stigma and discrimination are often directed towards the key affected populations such as men who have sex with men (MSM), people who inject drugs and sex workers. This is mainly because people disapprove of their behaviours (UNAIDS, 2012).

In sub-Saharan Africa, HIV stigma is mainly associated with infidelity and sex work since heterosexual is the main mode of infection (stigma research, 2004). However, in 2014, 64% of countries had some form of legislation in place to protect people living with HIV from discrimination (UNAIDS, 2015). According to the studies done in South

Africa, Indonesia, Tanzania, Botswana, Ethiopia, Ghana, India, Uganda, Thailand and Zimbabwe, stigma against HIV was found to be the main reason why people were reluctant to be tested for HIV, disclose their HIV status or take ARVs (Herek *et al.*, 2003; Kalichman *et al.*, 2003; Ford *et al.*, 2004). This was also found in healthcare settings where the healthcare workers may stigmatize the patients for instance by using excessive precaution or withholding the appropriate care (Foreman *et al.*, 2003; Paxton *et al.*, 2005).

2.3.6 Disclosure of HIV status

Disclosure of HIV status is now encouraged because PLHIV are now living longer as a way of reducing sexual risk behaviour and transmission of the virus, decrease stigma and discrimination, and increase access to ART and better treatment outcome. This is because of improved adherence and support since HIV is now regarded as a chronic illness (Farquhar *et al.*, 2000; Miller *et al.*, 2007). For instance, disclosing to significant others would provide emotional and psychological support to PLHIV while disclosure to sexual partner could also lead to partner taking the HIV test (Deribe *et al.*, 2008). Despite all the benefits of disclosure some PLHIV may decide either not to disclose or disclose partially or to publicly declare their HIV status (Maman *et al.*, 2004). However there were potential risk of disclosure especially to women such as divorce, abandonment, stigma and discrimination, loss of custody of children and property (Kebede *et al.*, 2005). According to study carried in Mityana district in Uganda (2009),

only 43% of PLHIV who attended post-test counseling disclosed their HIV status (Kadowa *et al.*, 2009).

In sub-Saharan Africa the rate of disclosure among pregnant women attending the antenatal care was lowest (16.7% to 32%) (Maman *et al.*, 2004). Most studies in Africa on disclosure have focused mainly on disclosure of HIV status to spouses and sex partners, especially among women (Rice *et al.*, 2009) and fewer on disclosure of others in the social network. According to WHO (2003), approximately 52% of PLHIV disclosed their status to their sexual partners in Africa. In Uganda, King *et al.* (2008) reported disclosure to sexual partners to be even higher (62%). Although there was limited data on disclosure to other members of the network, for instance family, children and friends, the rates were much lower than those of disclosure to the sexual partners.

In South Africa, Visser *et al.* (2008) revealed that 20% of women disclosed their HIV status to their parents while 23% disclosed to other members of the family. However, disclosure to children and neighbours was lower - 6% and 7% respectively (Deribe *et al.*, 2008). Men and women differ with whom they disclose to their HIV status for instance a study done in Uganda revealed that men were more likely to disclose to their sexual partners while women were more likely to disclose to their sisters (King *et al.*, 2008).

In Kenya men were more likely to disclose to their wives while women were likely to disclose to family members (Miller *et al.*, 2007). However, it was also noted that women were more likely to disclose if they were provided with support; they were also more likely to disclose to female network members whom they believe to be HIV positive (Rice, 2009). Communication skills and communication patterns were found to be important determinant in disclosure and people who had good communication skills were more likely to disclose (Sowell *et al.*, 2003).

Another study also indicated that people on ART were more likely to disclose because they had already undergone pre-ART counseling; moreover people in low income countries are commenced on ART when they already have obvious signs of AIDS (Maman *et al.*, 2003). The rate of disclosure increased among the people attending the HIV clinic with the number of times the health care provider discussed issues of disclosure (Maman *et al.*, 2003). ‘Beneficial disclosure’ has been discussed in many African countries whereby the healthcare provider is allowed to disclose partner HIV status to the other partner (NASCOP, 2004; Jack, 2007).

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Site

The study was conducted at Kenya Ports Authority (KPA) which is a sea port comprising of Kilindini Harbour and Port Reitz on the Eastern side of the Mombasa Island and the Old Port and Port Tudor north of the Mombasa Island (Figure 3.1). KPA is a state corporation established by an Act of Parliament on 20th January 1978 after the demise of the East African Harbours Corporation. The KPA serves not only our Kenya but the neighbouring land-locked countries such as Uganda, Rwanda and Burundi. In June-July 2015 when the study was undertaken, KPA had a workforce of 6690 from 8 divisions and 32 departments.

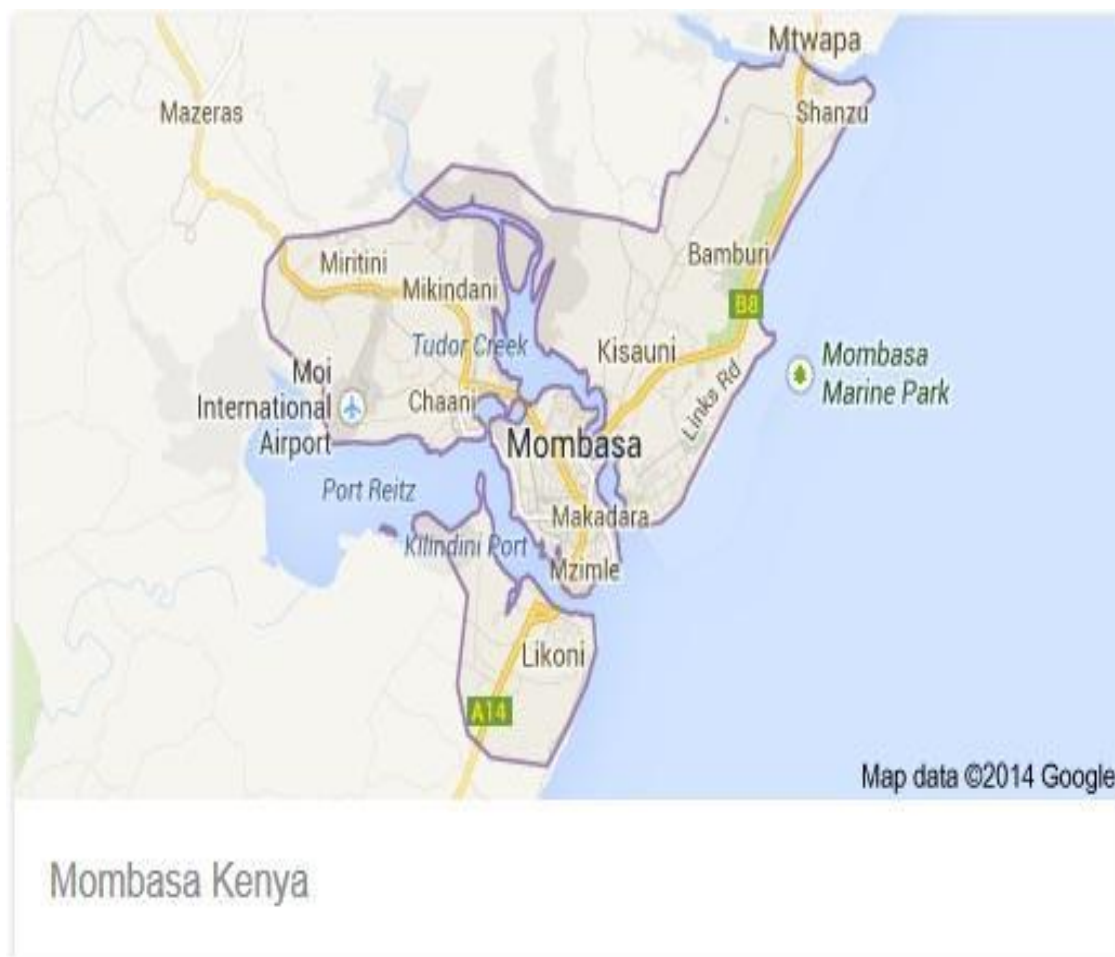


Figure 3.1: Map of Mombasa (Source: Google map, 2014)

3.2 Study design

A descriptive cross-sectional study design using quantitative method was employed.

3.3 Study Variable

3.3.1 Independent variables

The independent variables were age, sex, marital status, education, religion. willingness to take an HIV test, motivation to take an HIV test, accompanying of partner to VCT, communication of HIV results, condom use, disclosure of HIV status, availability of ARVs, confidentiality, fear of positive results, risk of HIV infection, stigma and discrimination

3.3.2 Dependent Variable

The dependent variable was VCT utilization level amongst KPA employees.

3.4 Study population

The study population was KPA employees working in Mombasa at the time of the study.

3.4.1 The inclusion criteria

The study included all employees working in the KPA Mombasa at the time, who consented to participate and were willing to participate in the study.

3.4.2 Exclusion criteria

Employees who declined to participate in the study either before or during the study process, those who were on leave and those who were not willing to participate.

3.5 Sample Size Determination

There being no previous study on how the port workers were utilizing the VCT services a prevalence value of 50% was used to determine the sample size. According to Mugenda *et al.* (2003) a larger sample sizes give more reliable results with greater precision and power. The sample size was calculated using Cochran (1977) method.

Thus,

$$n = \frac{Z^2 (p) (1-p)}{d^2}$$

Where:

n = minimum sample size required

Z = Z score corresponding to the level of confidence with which it is desired to be sure that the true population lies within +/- % points of the sample estimate (95% = 1.96).

p = expected population proportion (default = 50%)

d = maximum tolerable error = 5%

q = 1.00 – 0.50 = 0.50

Since there was no similar study in the target group and study area, to obtain a conservative estimate of the required, a sample size to be used was based on equal proportion where $p = q = 0.5$ (Daniel, 1999 & Lwanga *et al.*, 1991).

Hence,

Therefore,

$$n = \frac{(1.96)^2 \times (0.5 \times 0.5)}{(0.05)^2}$$
$$n = 385$$

3.6 Sampling techniques

Probability Proportional to Size (PPS) sampling was employed in selection of research respondents. A list of all employees in KPA Mombasa was sought from General Manager - Human Resource and Administration Manager; this formed the researcher's sampling frame as indicated in Table 3.1. The list was arranged according to the 8 divisions and a target population of 6690 employees. A calculated sample size of 385 was proportionately distributed to each of the 8 divisions depending on the population of employees as indicated in the Table 3.1. Respondents within each department were then randomly selected. This sampling technique was used because population of employees in various departments varied in size; this reduced the standard error and bias by

increasing the likelihood that a department with many employees would be chosen over the department with fewer employees.

Table 3.1: Number of respondents per division

S/N	Division	No. of employees	Calculation	Sample size
1.	Managing Director's offices	386	$386/6690 \times 385$	22
2.	General Manager Board and Legal Services	45	$45/6690 \times 385$	03
3.	General Manager Human Resources and Administration	515	$515/6690 \times 385$	30
4.	General Manager Operations	3998	$3998/6690 \times 385$	230
5.	General Manager Engineering Services	905	$905/6690 \times 385$	52
6.	General Manager Finance	307	$307/6690 \times 385$	18
7.	General Manager Corporate Services	140	$140/6690 \times 385$	08
8.	General Manager Infrastructure Development	394	$394/669 \times 385$	22
	Total	6690		385

3.7 Data collections tools

Data was collected using a structured questionnaire and close-ended questions were asked which allowed for a specific type of response. The questionnaire was prepared in English and then translated in Kiswahili and back in English in order to check for consistency. The questionnaire was in both English (Appendix II) and Kiswahili (Appendix III) since not all employees were conversant with English.

3.8 Pre-Testing of data collection tools

The questionnaire was pre-tested on employees of Kenya Maritime Authority who were not involved in the study but also in the transport industry like KPA, before the actual data collection to ensure the validity and reliability of the data. The result was used to review the tool and the items which were not clear were rephrased while irrelevant ones were removed. According to Kline (2005), the information gathered would assist the researcher to determine whether it was worthy to conduct the research to a large population. Feedback also allowed the researcher to know the time it would take a respondent to answer question items.

3.8.1 Validity

In this study the validity of the instrument was established by having objective questions included in the questionnaires and pretesting the questionnaire with Kenya Maritime Authority employees since they were not participating in the study. Cooper and

Schindler (2003) stated that pre-testing the data collection instruments through a pilot study help in detecting ambiguous, awkward, or offensive questions and use of appropriate technique. Questions not understood were corrected to include a wider variety of options for the informants. Thus pre-testing feedback enabled the instrument to be revised. The questionnaire was also revised by my supervisor.

3.8.2 Reliability

The reliability of the instrument was established through test-retest procedure and the test was carried out on employees of Kenya Maritime Authority who were not part of the study. The questionnaire was administered at two different times to check for consistency in response. The results yielded were relatively the same.

3.9 Data Collection

Data was collected using structured questionnaires which were administered by the researcher during working hours, and through the administrators for the employees who were on night shift. Majority of the administrators had either Bachelor's degree or were pursuing Master's degree and had a wealthy experience on research, hence it was easy for them to follow instructions given to them by the researcher. However, they were first trained on how to administer the questionnaires, maintain confidentiality and observe medical ethics during data collection. The data was obtained through drop and pick whereby the questionnaires were administered to the respondents and then collected on or before end of one week. The administrators and the researcher collected

questionnaires and checked for completeness, accuracy, clarity, and consistency throughout the data collection period.

3.10 Data Management and analysis

The questionnaires that had been adequately completed were first edited to eliminate any errors before analysis was done. Data generated from the questionnaires was coded and analyzed using the Statistical Package for Social Sciences Version 16 (SPSS 16). Descriptive statistics was used to analyze qualitative and quantitative data while multiple regression was used to analyse the relationship between the dependent and independent variables. Summaries were presented using pie charts, bar graphs and frequency tables. Data was kept in a computer with a secure password and backups secured with flash disc and Google drive internet folder.

3.11 Ethical Considerations

Ethical approval was obtained from the Ethical Review Committee at Pwani University (Appendix IX). A consent form (Appendix I and II) designed by the researcher was read to all respondents for their consent to take part in the study before the beginning of the study to enable them understand the objective of the study. The researcher disclosed fully the nature and the scope of the study to respondents before they provided their informed consent verbally. The respondents were informed that the participation was on voluntary basis and that they were free to withdraw from the study at any time without giving notice and they were not to be penalized. Confidentiality and privacy was

achieved by maintaining very strict controls over access to the respondents' information. No respondent was forced to reveal information to the researcher that they did not wish to reveal (Sieber, 2009). Safeguarding this information was a key part of the relationship of trust and respect that existed between the researcher and the respondent. No information was divulged to unauthorized persons without permission of the respondent.

During data collection, the researcher took several steps to ensure the confidentiality of the respondent' information which included use of codes to label data instead of using names. This was especially important to protect the respondent if the published data included other identifiers such as age, gender, community affiliations, or place of residence. The researcher was careful not to publish enough information by which respondent could be identified. The respondents were also assured that the information provided was to be used only for research purpose. The researcher did not withhold any information or offer inaccurate information so as to influence the respondents who would have otherwise declined participation in the study to participate (Corey *et al.*, 1993). Permission to conduct this study was obtained from Jomo Kenyatta University of Agriculture and Technology (Appendix IV), Kenya Maritime Authority (Appendix VI) and Kenya Ports Authority (Appendix VII),

CHAPTER FOUR

RESULTS

4.1 Response Rate

A total of 385 questionnaires were administered and 295 (76.6 %) were returned.

4.2 Socio-demographic Characteristics of study respondents

4.2.1 Distribution of study respondents' by gender

Majority (60.3%) of the respondents interviewed were male (Figure 4.1).

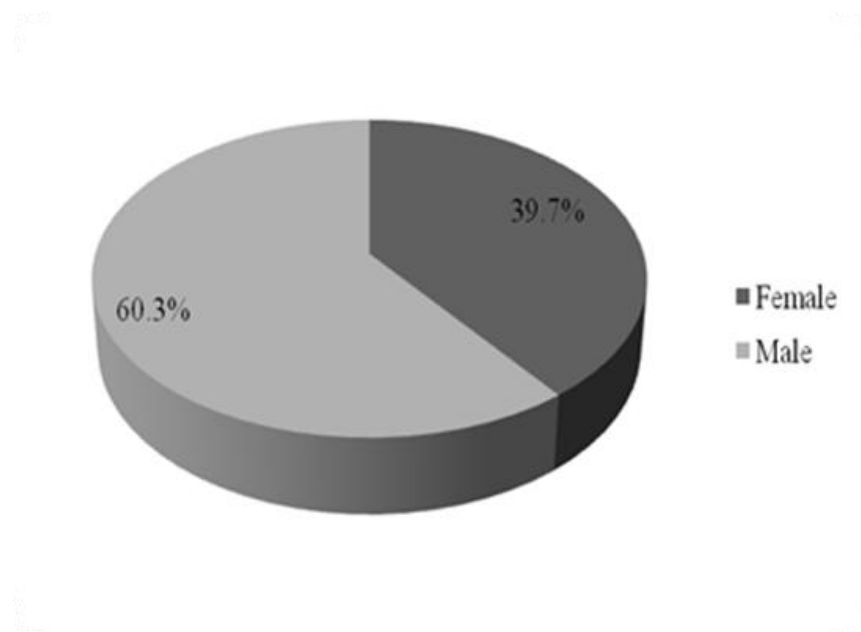


Figure 4.1: Distribution of respondents by gender at KPA, 2015.

4.2.2 Distribution of study respondents' by age

Most (40%) of the respondents were aged between 40 - 49 years as indicated in Figure

4.2.

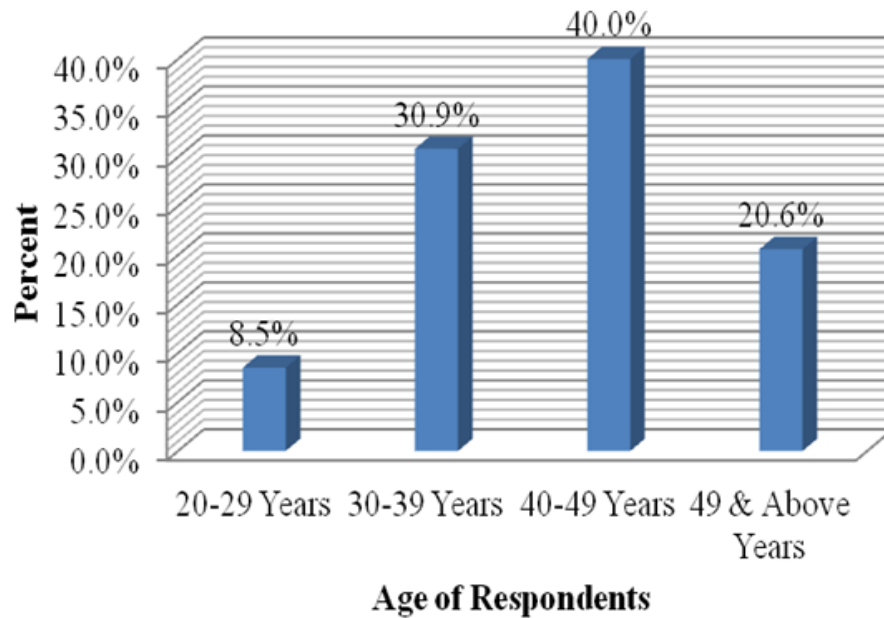


Figure 4.2: Distribution of respondents by age at KPA, 2015.

4.2.3 Distribution of study of marital status of respondents

Majority of the responders (75.6%) were married as indicated in Figure 4.3.

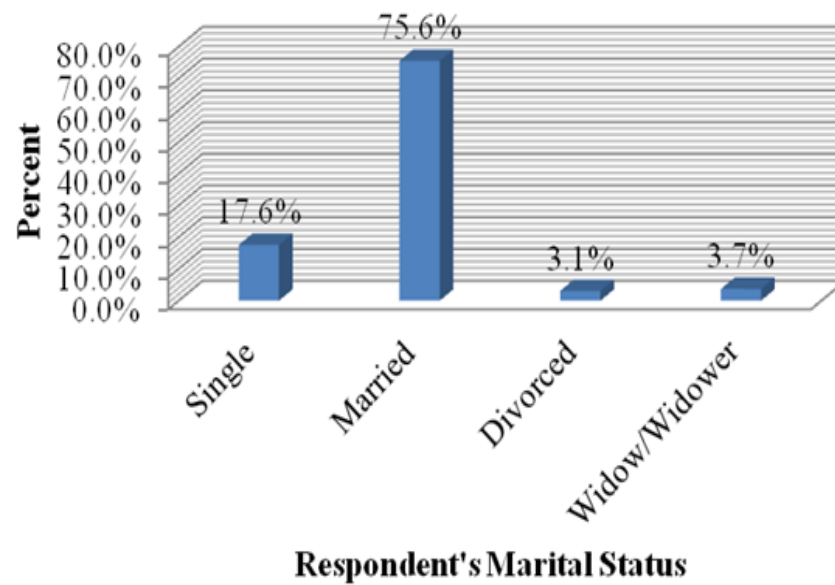


Figure 4.3: Marital status of respondents at KPA, 2015.

4.2.4 Respondents' Level Education

The results indicated that most of the respondents (36.9%) had attained secondary education (Table 4.1).

Table 4.1: Proportion of respondents by Level of Education at KPA, 2015.

Education Level	Frequency	Percent (%)
Primary	21	7.1
Secondary	109	36.9
Middle level	106	35.9
University	59	20.1
Total	295	100

4.2.5 Religion of respondents

Majority of the respondents were Christian (75.9%) as shown in Table 4.2.

Table 4.2: Proportion of respondents by religion at KPA, 2015.

Religion	Frequency	Percent (%)
Muslim	56	18.9
Christian	224	75.9
Others	15	5.2
Total	295	100

4.2.6 Socio-demographic characteristics and VCT uptake

Marital status was significantly associated with VCT uptake among KPA employees $p=0.015$. However there was no significant association between age, education and religion of the respondents and VCT uptake ($p>0.05$) as indicated in Table 4.3.

Table 4.3: Socio-demographic characteristics and VCT uptake at KPA, 2015.

Socio-demographic characteristics	Frequency		Significance level
	Female	Male	p-Value
Age			
20-29	08	17	0.874
30-39	37	54	
40-49	47	71	
49& Above	25	36	
Marital status			
Single	28	24	0.015
Married	77	146	
Divorced	05	04	
Widow/Widower	07	04	
Education			
Primary	08	13	0.295
Secondary	40	70	
Middle level education	50	57	
University education	19	38	
Religion			
Muslim	21	36	0.370
Christian	88	136	
Others	08	06	

4.3 Proportion of the KPA employees who utilized VCT

4.3.1 Employees who had ever tested for HIV

Majority (91.2%) of the respondents reported having had an HIV test (Figure 4.4).

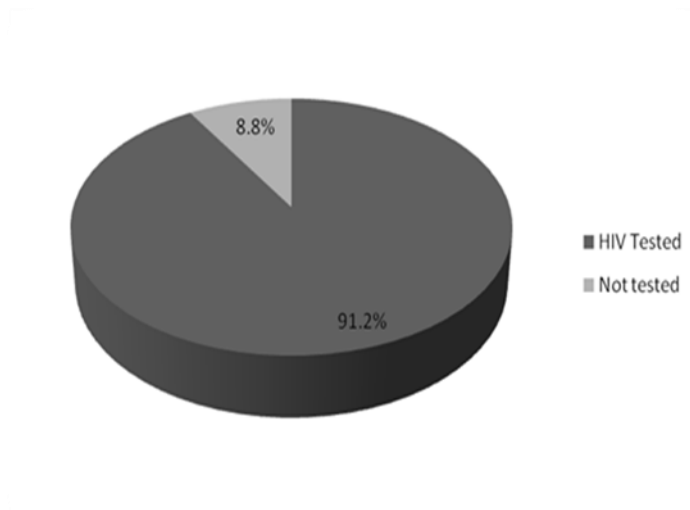


Figure 4.4: Proportion of respondents who had tested for HIV in KPA, 2015.

4.3.2 Duration since last HIV Test

Most (31.9%) of the respondents were tested more than one year ago as shown in Table 4.4.

Table 4.4: Duration from last HIV test in KPA, 2015.

Duration from last test	Frequency(n)	Percent (%)	Cum. (%)
Less than 3 months ago	56	20.8	20.8
3-6 months ago	64	23.8	44.6
6 months – 1 year	40	14.9	59.5
More than 1 year	86	31.9	91.4
Cannot remember	23	8.6	100
Total	269	100	

4.3.3 Frequency of HIV testing

More than 60% of the respondents had gone for the HIV test for more than once as indicated in Table 4.5.

Table 4.5: HIV test frequency at KPA, 2015.

Number of Times tested	Frequency (n)	Percentage (%)
Not at all	27	9.2
Once	65	22.0
More than once	203	68.8
Total	295	100

4.3.4 Motivation for taking HIV test

Figure 4.5 shows that majority or the respondents (61.7%) got motivated by interest in knowing their HIV status.

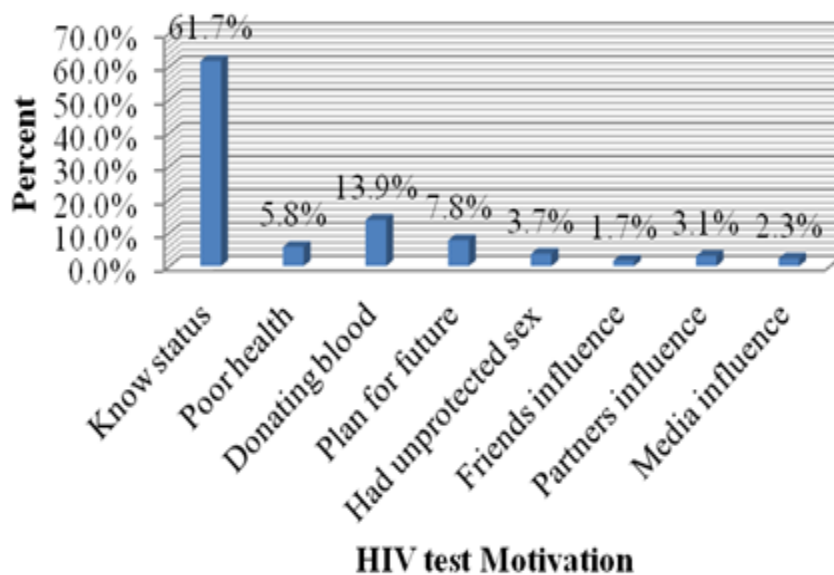


Figure 4.5: Motivation for taking HIV test by respondents in KPA, 2015.

4.3.5 Reasons for not taking HIV test

The results indicated that 46.2% did not have an answer as to why they have not been tested for HIV (Table 4.6).

Table 4.6: Respondents reasons for not taking HIV test, KPA 2015.

Response	Frequency (n)	Percent (%)	Cumulative (%)
No cure for HIV	2	7.7	7.7
Fear of positive results	5	19.2	26.9
It is not necessary	6	23.1	50.0
My partner was unwilling	1	3.8	53.8
No answer	12	46.2	100
Total	26	100	

4.3.6 Facilities Utilized for HIV Testing

Facilities utilized for HIV testing are in figure 4.6. Majority of employees (54.2%) sought for VCT services outside KPA.

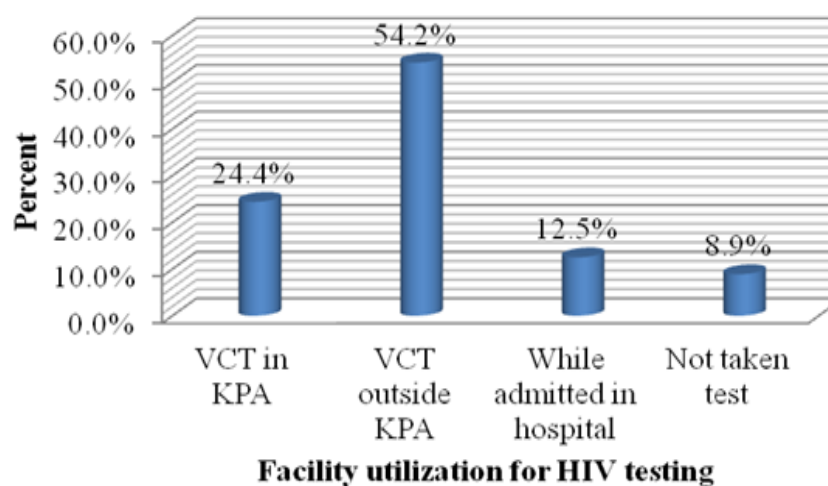


Figure 4.6: Facilities Utilized for HIV Testing in KPA, 2015.

4.3.7 Feedback of HIV Test Results

Figure 4.7 indicates that about 89% of the respondents had their HIV results communicated back to them.

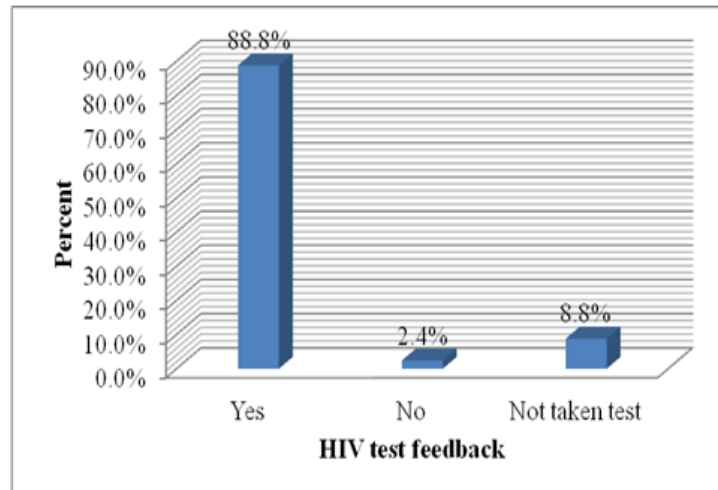


Figure 4.7: Proportion of respondents who received feedback of HIV test in KPA, 2015.

4.3.8 Involvement of Partner in HIV Testing

Table 4.7 shows that only 34.6% of the respondents accompanied their partners to VCT for HIV testing, however 74.9% of the respondents communicated the HIV results to their partners.

Table 4.7: Involvement of Partner in HIV Testing in KPA, 2015.

	Response (%)		
	Yes	No	Not tested
Involvement of partner			
Partner accompanying to VCT	34.6	56.6	8.8
Result communicated to partner	74.9	16.3	8.8
Anything changed in their life	57.3	33.9	8.8

4.3.9 Employers' Treatment of HIV Positive Employees

Majority (68.1%) of the employees indicated that the employer provided ARVs for those who tested HIV positive (Table 4.8).

Table 4.8: Employers' treatment of HIV positive employees in KPA, 2015.

	Response	
	Frequency (n)	Percentage (%)
Employers' Treatment		
Start them on ARV's	201	68.1
Do not care	03	1.0
Give them offs and light duties	20	6.8
Do not know	71	24.1
Total	295	100

4.3.10 Risk Factors in HIV infection

Most of the respondents (78.3%) indicated multiple partners could predispose them to HIV infection while 95.9% knew the importance of condom (Table 4.9).

Table 4.9: Risk factors among employees in KPA, 2015.

Variables	Response (%)	
	Yes	No
Risk of HIV infection	49.5	50.5
Multiple partners predisposes to HIV	78.3	21.7
Cure for AIDS	12.5	87.5
Can a healthy looking person have HIV	93.2	8.8

4.3.11 Proportion of employees who utilized VCT services and VCT uptake

Majority (91.2%) of the respondents reported ever had taken an HIV test.

Accompanying a partner was significantly associated with VCT utilization ($p=0.017$) as indicated in Table 4:10.

Table 4.10: Proportion of employees who utilized VCT services and VCT uptake in KPA, 2015.

Variable		VCT	Percentage	Odds ratio	p-Value
(Factor)	Response	Utilization	no. of response	(95% CI)	
Proportion of respondents ever had an HIV test	1.YES	269	91.2	1.076	0.859
	2. NO	26	8.8	(0.476, 2.432)	
Frequency of VCT	1.Once	65	24.2	1.12	0.698
	2. More than once	204	75.8	(0.63,1.00)	
Place where	1. At KPA	72	26.8	0.742	0.283
VCT test was done	2.Outside KPA	160	61.8	(0.430, 1.280)	
	3.While admitted	37	13.8		
Partner accom-panied	Hospital 1.YES	102	37.9	1.872	0.017
	2. NO	167	62.2	(1.116, 3.139)	
Change in life style after test	1.YES	169	62.8	1.433	0.159
	2. NO	100	37.2	(0.868, 2.367)	
Condom use	1.YES	222	75.25	1.975	0.039
	2. NO	73	24.75	(1.069, 3.762)	

4.4 Factors associated with utilization of VCT services among KPA employees

4.4.1 Knowledge on VCT utilization and HIV/AIDS

The results shown in Table 4.11 indicate that only 36.6% were comfortable being tested for HIV by someone they knew.

Table 4.11: Knowledge on VCT utilization and HIV/AIDS in KPA, 2015.

Variables	Response (%)	
	Yes	No
Take the HIV test even when faithful	86.8	13.2
Comfortable if tested by someone known to you	36.6	63.4
Whether adequate information about HIV infection was being provided during testing	85.1	14.9
Whether VCT sessions are private session	87.8	12.2
Whether ARVS improve immunity	85.4	14.6
Whether one knows someone living with HIV at your workplace	84.7	15.3
Whether those living with HIV/AIDS are on ARVs	85.4	14.6

4.4.2 Respondents' Action when found HIV positive

Majority of the respondents (58%) indicated that they will take ARVs once they test

HIV positive as shown in table 4.12.

Table 4.12: Respondents' Action when found HIV positive in KPA, 2015.

Action	Response	
	Frequency (n)	Percentage (%)
Stop having sex	19	6.4
Avoid pregnancy	7	2.4
Avoid marriage	2	1.0
Get divorce	3	1.0
Use condom	54	18.3
Commit suicide	4	1.4
Start on ARV's	171	58.0
Beg God for forgiveness	35	11.5
Total	295	100

4.4.3 Respondents' Action when partner found HIV positive

Table 4.13 shows that 28.1% would take care of partner who tests HIV positive

Table 4.13: Respondents' Action when partner found HIV positive in KPA, 2015.

Reaction	Response	
	Frequency (n)	Percentage (%)
Stop having sex	23	7.8
Avoid pregnancy	05	1.7
Avoid marriage	06	2.0
Ask for divorce	09	3.1
Use condoms	77	26.1
Go for HIV test	83	28.1
Take care of partner	83	28.1
Stop having any contact	09	3.1
Total	295	100

4.4.4 Reaction if partner tested HIV positive

Majority of the respondent (72.5%) indicated that they will be unhappy as shown in figure 4.8.

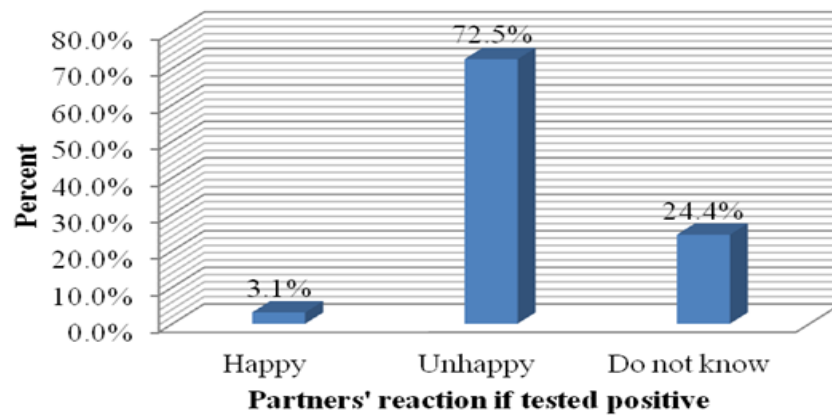


Figure 4.8: Reaction if partner tested HIV positive in KPA, 2015

4.4.5 Reaction when workmate is found HIV positive

Figure 4.9 shows that 51.9% will be unhappy.

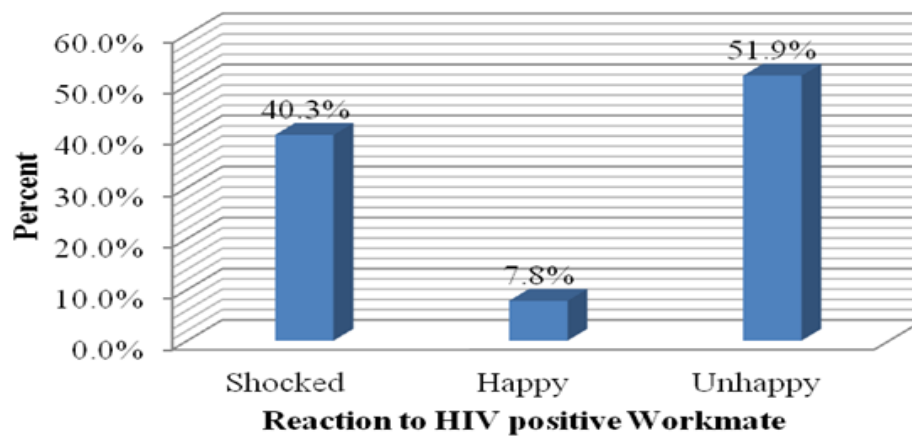


Figure 4.9: Reaction when workmate is found HIV positive KPA, 2015.

4.4.6 Disclosing HIV Status

Figure 4.10 show that 54.2% of the respondents indicated that they will disclose their positive HIV statuses to others that is people who are not colleagues or in management position.

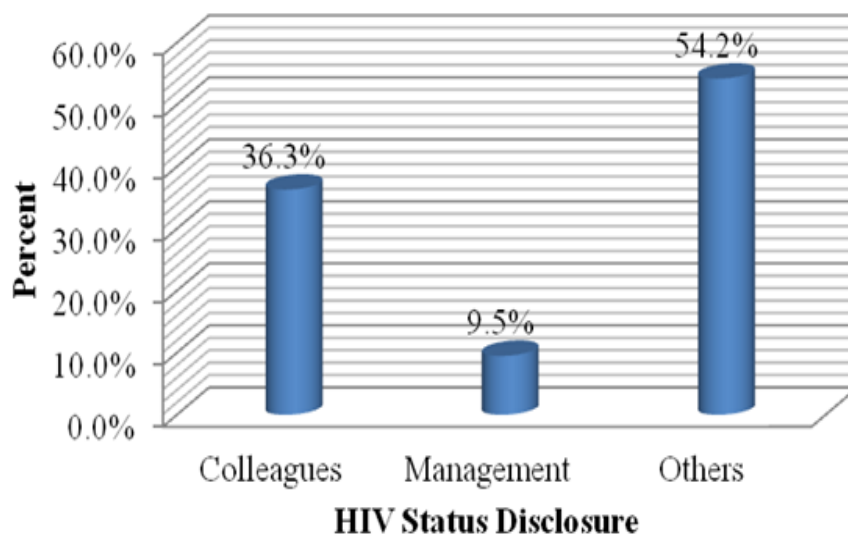


Figure 4.10: Disclosing HIV Status in KPA, 2015.

4.4.7 Handling of HIV positive people

Table 4.14 shows that according to the respondents, AIDS patients should not be isolated (92.9%).

Table 4.14: Handling of HIV positive people in KPA, 2015.

Variable	Response (%)		
	Yes	No	Don't know
Isolation of AIDS patients	4.4	92.9	2.7
Eating together with an AIDS patient	90.1	4.1	5.8
Presence of HIV/AIDS workplace program	76.6	3.7	19.7
Denial of an employee to be recruited due HIV	3.7	61.4	34.9
Screening of employees for HIV before hiring	28.5	45.4	26.1
Employer recognition of the rights	75.9	3.1	21.0

4.4.8 Observed Trends in HIV Testing at KPA Mombasa

Table 4.15 shows more female (54.2%) than male (45.8%) respondents disclosed their HIV status.

Table 4.15: Observed Trends in HIV Testing at KPA Mombasa, 2015.

Variable	Response (%)	
	Female	Male
Ever had HIV test	40.5	59.5
Never had HIV test	42.3	57.7
VCT test in KPA	45.8	54.2
VCT test outside KPA	36.3	63.7
Result communicated to partner	37.6	62.4
Result not communicated to partner	54.2	45.8
Ever used condom	33.1	66.9

4.4.9 Regression analysis

The researcher conducted a multiple regression analysis so as to determine the relationship between the dependent and independent variables. The regression model was developed to represent the dependent (VCT uptake) and independent variables (socio-demographic characteristics, proportion of employees utilizing VCT services and knowledge, attitudes and practices associated with utilization of VCT services).

Table 4.16: Regression Coefficients

Factor	Unstandardized Coefficients		Standardized Coefficients		Sig.level
	B	Std. Error	Beta	T	
(Constant)	0.316	0.192		1.649	0.100
socio-demographic characteristics	0.301	0.023	0.489	12.896	0.009
Proportion of employees utilizing VCT services	0.270	0.022	0.449	12.149	0.011
Knowledge, attitudes and practices associated with utilization of VCT services	0.324	0.039	0.323	8.416	0.004

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Socio-demographic Characteristics of the KPA employees

More males participated in the study compared to females. This was expected because majority of the employees in KPA were male. The study indicated that majority of the employees were married, Christians and had secondary education.

In most African countries men control resources which may be important in HIV prevention and care and they are the main decision makers hence by men utilizing the VCT they may influence women directly or indirectly in utilizing the service (Demissie *et al.*, 2009). Education may also influence the utilization of VCT. For instance, the study done in Mwanza, Tanzania indicated that VCT uptake increased with the level of education (Wringe *et al.*, 2008). This was because the individuals were more knowledgeable on VCT and HIV hence more confident to take the HIV test and also had adequate skills on prevention of HIV. Religious beliefs significantly shaped individuals' outlook on living with HIV and have been cited by PLHIV as major strategies for coping with HIV/AIDS (Makoae *et al.*, 2008). In this study, marital status was significantly associated

with VCT uptake ($p=0.015$) but there was no significant association between age, education and religion and VCT uptake ($p>0.05$).

5.1.2 Proportion of the KPA employees who utilized the VCT services

Over ninety percent (91.2%) of the respondents reported to have ever been tested for HIV and were mostly male. However, only 24.4% respondents reported to have been tested for HIV in KPA VCT centres despite of the proximity to workplace. According to Durojaiye *et al.*, (2013) fear of stigma from co-workers and employers, such as social isolation and ridicule, or experience discriminatory practices, such as denial of promotion would deter the employee from visiting the VCT at their workplace. The study also found out that the respondents who were accompanied by their partners to VCT were only 34.6%. The main reason was fear of being denied sex (7.8%), divorced (3.1%) and being abandoned (3.1%). However there was a significant relationship between accompanying a partner and VCT uptake ($p= 0.017$).

In the study, more than sixty eight percent (68.8%) of the respondents re-tested for HIV. They also acknowledged that having many partners (78.3%) will predispose them to HIV (54.3%), hence the importance of re-testing. This was important because KPA employees interact on daily basis with other port users from all over the world. According to HIV/AIDS and Port Workers (2013), there was a higher HIV prevalence among port workers than in the general population. There

is need for people to be tested at least once and those at high risk of infection, for instance those engaging in unprotected sex, having many partners, men having sex with men (MSM) and those injecting drugs and sharing needles should get tested for HIV more often (CDC, 2010).

Majority (61.7%) of the respondents in this study were motivated to take the HIV test so as to know their status. This was in agreement with the study conducted among 520 fishermen at Dunga, Usoma and Asat beaches indicated that majority of the fishermen (58.8%) utilized VCT because they wanted to plan for the future (Okiriamu *et al.*, 2013). However, it was not in line with the findings of study conducted in Shenyang, China where 75.2% of the respondents indicated that recent knowledge on HIV motivated them to take the HIV test (Zhou *et al.*, 2009).

The main reasons cited for declining the HIV test were: the test being considered not necessary, fear of positive results which contributed to 88.5%. This is unlike results of a routine opt-out HIV testing study carried out in an urban community health centre in Bronx, New York where out of 319 eligible patients, 105 (35%) took HIV test with the commonest reason for declining the test being perceived low risk (54.4%) and self-reported HIV testing done previously (45.1%)(Cunningham *et al.*, 2009). Failure to take the test would pose more risks as was reported in a study conducted at George Washington University Hospital Emergency department where patients who declined to take the HIV

test were found to be almost three times more likely to be HIV positive than those who took the he HIV test (ICAAC, 2009).

Over 80% of the respondents in the study reported having been given the results verbally face to face at the VCT centre. This was more favourable unlike other methods of communicating the results. According to the study conducted in Brussels, Belgium between 1996 and 1999 which concluded by emphasizing that only in a face to face conversation can the service provider offer effective post counseling to the client (Devroeya *et al.*, 2001), although results were mostly conveyed by phone (41.9%) especially to the anxious clients.

More than ninety five percent (95%) knew the importance of condoms in HIV prevention and 74.9% acknowledged having used them. Condom use among male was higher (66.9%) than female (33.1%) respondents; 59.5% of female compared to 40.5% male respondents expressed to have never used condoms. This was largely because 75.6% of the respondents were married. According to Agha (1998), condom use was significantly associated with extra marital sexual activity and women were likely to be stigmatized and viewed negatively for suggesting condom use, and in some instances led to instability or dissolution of relationships (Soskolne, *et al.*, 1991). Married men on the other hand were much more likely than married women to engage in extramarital sex, and among males such activity was often socially and culturally condoned (Smith, 2010). According to the study conducted by Walusaga *et al.* (2012), men (48.1%)

reported to have used condom consistently during sex compared to female (31.8%).

5.1.3 Knowledge, attitudes and practices associated with utilization of VCT services

The study found out that the respondents (86.8%) would take the HIV test even when they were faithful to their partner but they were uncomfortable being tested by someone they knew (63.4%). However, they were in agreement that the VCT services offered were private (87.8%) and that adequate information was provided during testing (85.1%). According to the study by Njau *et al.* (2014), respondents indicated that they will go for HIV testing to a centre very far from where they reside where no one knew them. This was because of the stigma attached to HIV which was associated with promiscuity, homosexuality and intravenous drug use (Judgeo *et al.*, 2014).

More male respondents (45.8%) than females (54.2%) communicated their HIV results to their partners. This is because the respondents feared mainly being divorced (3.1%), denied conjugal rights (7.8%) and being denied any contact with the partner (3.1%). However, according to Kalichman *et al.* (2003), fear of discrimination, abandonment, depression and loss of economic support and disruption of family relationship might make the females not to disclose their HIV status to their partner. Majority of the respondents (58%) indicated that they will take ARVs once they test HIV positive and that AIDS patients should not be

isolated (92.9%). This was mainly attributed of the pre-post test counseling offered during VCT, hence the importance of counseling.

5.1.4 Relationship between Variables

Multiple regression analysis was conducted so as to determine the relationship between the dependent variable (VCT uptake) and the three independent variables. The findings showed that taking all other independent variables at zero, a unit increase in socio-demographic characteristics will lead to a 0.301 increase in VCT uptake; a unit increase in proportion of employees utilizing VCT services will lead to a 0.270 increase in VCT uptake and a unit increase in knowledge, attitudes and practices associated with utilization of VCT services will lead to a 0.324 increase in VCT uptake among Kenya Ports Authority employees in Mombasa.

This implied that knowledge, attitudes and practices associated with utilization of VCT services contributed most to the VCT uptake, followed by socio-demographic characteristics while proportion of employees utilizing VCT services contributed the least to the testing uptake among Kenya Ports Authority employees in Mombasa. Further, the results also indicated that at 95% level of confidence, all the variables had positive level of significant ($p < 0.05$) as follows: socio-demographic characteristics ($p = 0.009$); proportion of employees utilizing VCT services ($p = 0.011$), and factors associated with utilization of VCT services

($p=0.004$). In the regression model, $R(B)$ was given as 0.794 which was an estimate of the expected increase in VCT uptake.

5.2 Conclusion

The study indicated that majority of the employees were married, christians and had secondary education. Marital status was significantly associated with VCT uptake.

Over ninety percent (91.2%) of the respondents who were mostly male reported having had an HIV test but majority preferred VCT outside KPA in spite of proximity of KPA VCT and less stigma and discrimination at workplace. However, some employees declined to take the HIV test and majority of them considered it not important; some feared positive HIV results. The study also found out that fewer employees were accompanied by their spouses to the VCT centre with the main reasons being fear of being denied conjugal rights, being divorced or abandoned. However, there was a significant relationship between being accompanied to VCT and VCT uptake.

Only (68.8%) respondents retested for HIV and majority admitted that having many partners will predispose them to HIV. The respondents were motivated to take the HIV test so that they may know their HIV status. Many respondents reported having received their HIV results verbally face to face at the VCT centre. More

male than female respondents used condoms despite adequate information being provided for during VCT session.

Although majority of the respondents would take HIV test even though they were faithful to their partners, only a few (36.6%) were willing to be tested by a person known to them despite the VCT sessions being private. More than half of the respondents indicated that they would take ARVs but majority indicated that they would be unhappy if their partner tested HIV positive. More female than male respondents did not disclose their HIV status because they feared being denied conjugal rights, divorced or any contact with their partner. However, majority of the respondents indicated that the AIDS patients should not be isolated. The regression model revealed that all the three variables studied had a positive level of significant.

5.3 Recommendation

Despite the high level of VCT service utilization among Kenya Ports Authority employees, only 24.4% reported having been tested for HIV in KPA VCT centres. KPA has to come with new methods of motivating people to utilize VCT services. This includes provision of 24 hours VCT services since the KPA offers 24 hours service to port users. Also, KPA should outsource the services of VCT staff on rotational basis in order to motivate employees who were uncomfortable being tested by someone they know to test for HIV in KPA VCT

centres. There is also need for programmes that will de-stigmatize HIV/AIDS, thus motivate the employees to attend the KPA VCT centre without fear of being seen or offered service by someone they know. Couple counseling and testing should be encouraged among the employees since attending VCT centre with the partner and receiving the results will increase the level of disclosure, especially among females. Women should be empowered to negotiate for safer sex with partners by teaching them assertive skills and promoting the correct, consistent use of both male and female condoms and provide them with adequate comprehensive knowledge on HIV/ AIDS, including comprehensive sexual education.

5.4 Areas for Further Research

There is need for further research to determine underlying factors influencing utilization of VCT services within KPA in other regions and other associated factors.

REFERENCES

- Achando, J. O. (2010), Factors influencing couples' HIV counselling and testing uptake in Kisumu city. Kisumu: Kenya.
- Aggleton, P., Wood, K., Malcom, A., & Parker, R. (2005). *HIV-related stigma, discrimination & Human rights violations: case studies of successful programme*. Geneva: Joint United Nations Programme on HIV/AIDS.
- Ama, N.O., Ngome, E. (2012). Healthcare providers' perceptions of the sexual and reproductive health needs (including family planning) of elderly women from selected sites in Botswana. *World Journal of AIDS*, 2, 143-158.
- Anand, A., Shiraishic, R.W., Bunnell, R.E., Jacobs, K., & Solehdinc, N. (2009). Knowledge of HIV status, sexual risk behaviors and contraceptive need among people living with HIV in Kenya and Malawi. *AIDS*, 23, 1565–1573.
- Anglemyer, A., Rutherford, G.W., Baggaley, R.C., Egger, M., & Siegfried, N. (2011). Antiretroviral therapy for prevention of HIV transmission in HIV-discordant couples. *Cochrane Database Syst Rev*, 8, CD009153.
- Anglewicz, P. & Chintsanya, J. (2011). Disclosure of HIV Status between Spouses in Rural Malawi. *AIDS Care*, 23(8), 998-1005.
- Anteneh, D., Bezatu, M., Haji, K., & Wanzahun, G. (2013). *Factors Contributing to Voluntary Counseling and Testing Uptake among Youth in Colleges*. Harar: UNAIDS.
- Ayenew, A., Leykun, A., Colebunders, R., & Deribew, A. (2010). *Predictors of HIV testing* among patients with Tuberculosis in north-west Ethiopia: A case–control Study. *PLoS One*, 5(3), e9702.

- Barker, G., Ricardo, C., Nascimento, M., Olukoya, A., & Santos, C. (2010b). Questioning Gender Norms with Men to Improve Health Outcomes: Evidence of Impact. *Global Public Health*, 5(5), 539-553.
- Beliyou, A.H. (2011). *Promoting HIV testing and safe sexual behavior: evidence from a field experiment in Ethiopia*. Job Market Paper Department of Economics, Columbia: Columbia University.
- Biraro, S., Ruzagira, E., Kamali, A., Whitworth, J., Grosskurth, H., & Weiss, H.A. (2013). *HIV-1 transmission within marriage in rural Uganda: a longitudinal study*. Southwestern Uganda: UNAIDS.
- Bond, L., Lauby, J., & Batson, H. (2005). HIV testing and role of individual and structural level barriers and facilitators. *AIDS Care*, 17, 125-140.
- Bryman, A., & Bell, E. (2003). *Business Research Methods*. Oxford: Oxford University Press.
- Bunnell, R.E. (2005). Living with discordance: knowledge, challenges, and prevention strategies of HIV-discordant couples in Uganda. *AIDS Care*, 17(8), 999–1012.
- Bunnell, R., Opio, A., Musinguzi, J., Kirungi, W., & Ekwaru, P. (2008). HIV transmission risk behavior among HIV-infected adults in Uganda: results of a nationally representative survey. *AIDS*, 22, 617–624.
- Burns, K. (2010). Mandatory premarital testing: A gender analysis. Paper presented at 2010 AIDS conference. Vienna: Austria.

- Bwambale, F.M., Ssali, S.N., Byaruhanga, S., Kalyango, J.N., Karamagi, C.A. (2008). Voluntary HIV counselling and testing among men in rural western Uganda. Implications for HIV prevention. *BMC Public Health*; 8, 263.
- Centers for Disease Control and Prevention (CDC). (2010). The role of STD detection and treatment in HIV prevention–CDC fact sheet.
- Chepngeno, G. (2013). *Perception of vulnerability to HIV infection among older people in Nairobi, a need for intervention*. Nairobi: KEMRI.
- Coates, T. J., Richter, L., & Caceres, C. (2008). Behavioural strategies to reduce HIV transmission: how to make them work better. *Lancet*, 372(9639), 669–684.
- Cochran, W.G. (1977). *Sampling Techniques*, (3rd edition). New York: John Wiley and Sons.
- Cohen, M.S., Chen, Y.Q., McCauley, M., Gamble, T., Hosseinipour, M.C., Kumarasamy, N., ...& Makhema, J. (2011). *Prevention of HIV-1 infection with early antiretroviral therapy*. NY: John Wiley and Sons.
- Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods* (8th edition). USA: McGraw-Hill.
- Corbett, E.L. (2007). *Health worker access to HIV/TB prevention, treatment and care services in Africa: situational analysis and mapping of routine and current best practices*. London: London School of Hygiene and Tropical Medicine.
- Corey, G., Corey, M.S., & Callanan, P. (1993). *Issues and Ethics in the helping Profession* Pacific Grove. New York: John Wiley and Sons

- Cotton, S., Puchalski, C.M., Sherman, S.N., Mrus, J.M., Peterman, A.H., Feinberg, J., ... & Tsevat, J. (2006). Spirituality and religion in patients with HIV/AIDS. *J Gen Intern Med*, 6(3), 34- 60.
- Daniel, W.W. (1999). *Biostatistics: A Foundation for Analysis in the Health Sciences*. (7th edition). New York: John Wiley and Sons.
- Day, J., Miyamura, K., Grant, A., Leeuw, A., Munsamy, J., Baggaley, R. & Churchyard, G.J. (2003). *Attitudes to HIV VCT among mineworkers in South Africa: will availability of antiretroviral therapy encourage testing?*. Kwa zulu Natal: AIDS Care.
- Demissie, A., Deribew, A., & Abera, M. (2009). *Determinants of acceptance of voluntary HIV testing among antenatal clinic attendees at Dil Chora Hospital*. Dire Dawa East: UNAIDS.
- Deribe, K., Woldemichael, K., Wondafrash, M., Haile, A., & Amberbir, A. (2008). *Disclosure experience and associated factors among HIV positive men and women clinical service*. Southwest: UNAIDS.
- Duff, P. (2010). Barriers to accessing highly active antiretroviral therapy by HIV-positive women attending an antenatal clinic in a regional hospital in western Uganda. *Journal of the International AIDS Society*, 5(2).
- Dunkle, K.L. (2008). New heterosexually transmitted HIV infections in married or cohabiting couples in urban Zambia and Rwanda: an analysis of survey and clinical data. *The Lancet*, 371(9631), 2183–2191.
- Durojaiye, M., Turan, J., Kwen, Z., Oyaro, P., & Nyblade, L. (2013). *Measuring HIV-related Stigma and Discrimination among Health Workers*. Nyanza Province: UNAIDS.

- Downing, M., Knight, K., Reiss, T.H., Vernon, K., Mulia, N., Ferreboeuf, M. ... & Vu, C. (2001). *Drug users talk about HIV testing: motivating and deterring risk factors. AIDS Care, 13*, 561–77.
- Edelman, C.L., & Mandle, C.L. (1995). *Health promotion throughout the life span*. St Louis: Mosby.
- Elcannem, E. & Gbdegesin, A. (2004). VCT for HIV: A study on the Acceptability by Nigerian Women Attending Antenatal Clinics. *African Journal of Reproductive Health, 8*(2), 91-100.
- Emusu, D., Ivankova, N., Jolly, P.R., Kirby, R., Foushee, H., Wabwire-Mangen, F., Katongole, D., & Ehri, J. (2009). *Experience of Sexual Violence among Women in HIV*. NJ: WHO.
- Fabiani, M., Ayella, E.O. & Nattibi, B. (2003). *Factors Influencing Acceptance of VCT among pregnant women in North Uganda*. *Antiretroviral Therapy, 8*(supp 1).
- Fakoya, I. (2012). *Religion and HIV diagnosis among Africans living in London*. *HIV Med.*, DOI: 10.1111/j.1468-1293.2012.01031x, 2012.
- FHI (2005). *Religious leaders respond to HIV/AIDS*. New York: Family health International.
- Finnerty, E., Kostenko, N., Tripathi, V., & King, E. (2010). *Case Study of HIV Testing Programs for Pregnant Women in Ukraine*. New York, NY: WHO.
- Fonner, V.A., Denison, J., Kennedy, C.E., O'Reilly, K., & Sweat, M. (2012). Voluntary counseling and testing (VCT) for changing HIV-related risk behavior in developing countries. *Cochrane Database of Systematic Reviews, 9*.

- Ford, K., Wirawan, D.N., Sumantera, G.M., Sawitri, A.A., & Stahre, M. (2004). *Voluntary HIV testing, disclosure, and stigma among injection drug users*. Bali: UNAIDS.
- Foreman, M., Lyra, P., & Breinbauer, C. (2003). *Understanding and Responding to HIV/AIDS-Related Stigma and Stigma and Discrimination in the Health Sector*. Washington: WHO.
- Gafos, M. (2010). *How many women really achieve consistent condom use over the course of a year? Evidence from rural KwaZulu-Natal*. 2010 International Microbicides Conference, Pittsburgh, abstract 193, 2010.
- Gatta, A.A. (2011). *Knowledge and attitudes towards Voluntary HIV Counseling and Testing services amongst adolescent high school students*. Addis Ababa: UNAIDS.
- George, G. (2006). *Workplace ART programmes: why do companies invest in them and are they working?*, *African Journal of AIDS Research*, 5(2), 179-188.
- German Development Service (GDS). (2001). *The HIV/AIDS Global Epidemic. Global Network of People Living with HIV*. Sigma and discrimination at work: findings from the People Living with HIV Stigma Index. Amsterdam: GDS.
- Gillespie, S., & Kadiyala, S. (2007). *Is poverty or wealth driving HIV transmission?* Zambia: AIDS.
- Glynn, J., Carael, M., & Auvert, B. (2001) *Why do young women have a much higher prevalence of HIV than young men? A study in Kisumu, Kenya and Ndola, Zambia*. Nairobi: NCC.

- Gostin, L. O., Ward, J.W., & Baker, A. C. (1997). *National HIV case reporting for the United States*. A defining moment in the hospital of the epidemic. *N Engl J Med*, 3(20), 34-1.
- Gottfried, T.D., Mink, R.W., & Phanuphak, P. (2006). Calypte AWARE HIV-1/2 OMT antibody test using oral fluid: special challenges of rapid HIV testing in the developing world. *Expert Rev Mol Diagn*, 6.
- Grady, W.R. (1994). Condom breakage and slippage among men in the United States. *Family Planning Perspectives*, 26, 107-112.
- Greig, A., Peacock, D., Jewkes, R., & Msimang, S. (2008). Gender and AIDS: Time to Act. *AIDS*, 22(Supplement 2).
- Hardon, A., Kageha, E., J. Kinsman, J., Kyaddondo, D., Wanyenze, R., & Obermeyer, C. (2011). *Dynamics of Care, Situations of Choice: HIV Tests in Times of ART*. Medical Anthropology.
- Haukoos, J.S., Witt, M.D., Coil, C.J., & Lewis, R.J. (2005). *The effect of financial incentives on adherence with outpatient human immunodeficiency virus testing referrals from the emergency department*. South Africa, Johannesburg: Acad Emerg Med.
- Herek, G.M., Capitanio, J.P., & Widaman, K.F. (2003). Stigma, social risk, and health policy: public attitudes toward HIV surveillance policies and the social construction of illness. *Health Psychol*, 7(4).
- HIV/AIDS and port workers, (2013). *A resource pack for unions*. Geneva: UNAIDS.

- Holmes, C.N., Preko, P.O., Bolds, R., Baidoo, J. & Jolly, P.E. (2008). Acceptance of Voluntary Counseling Testing and Treatment for HIV Among pregnant women in Kumasi, Ghana. *Ghana Medical Journal*, 42(1), 8-15.
- ILO. (2004). *HIV/AIDS and work: global estimates, impact and response*. Geneva: ILO.
- ILO. (2005). *ILO Programme on HIV/AIDS and the world of work*. Geneva: ILO.
- Ironson, G., Stuetzle, R., & Fletcher, M.A. (2006). An increase in Religiousness/spirituality occurs after HIV diagnosis and predicts slower disease progression over 4 years in people with HIV. *J Gen Intern Med*, 7(3) 43-61..
- ITF (2011). *HIV/AIDS, ports and port workers*. Geneva: ITF.
- Judgeo, N., & Moalusi, K. P. (2014). *My secret: The social meaning of HIV/AIDS stigma*. Sahara J: WHO.
- Kabiru, C.W., Luke, N., Izugbara, C.O., & Zulu, E.M. (2010). *The correlates of HIV testing and impacts on sexual behavior: evidence from a life history study of young people in Kisumu, Kenya*. Nairobi: BMC Public Health.
- Kadowa, I., & Nuwaha, F. (2009). *Factors influencing disclosure of HIV positive status in Mityana district of Uganda*. Kampala: Africa Health Science.
- Johnson, O.E. (2012). *Social impact of HIV/AIDS on clients attending a teaching hospital in Southern Nigeria*. Nigeria: Sahara.
- KAIS, (2012). *Preliminary Report*. Nairobi: KAIS.
- Kalichman, S. & Simbaya, J. (2007). *HIV testing attitudes, AIDS stigma, and voluntary HIV counselling and testing in a black township*. Cape Town: UNAIDS.

- Kaiser, R. (2011). Factors associated with HIV infection in married or cohabitating couples in Kenya: Results from a nationally representative study. *PLoS One*, 5(2), 32 .
- Kalichman, S.C., & Simbayi, L. (2003). *HIV testing attitudes, AIDS stigma, and voluntary HIV counselling and testing in a black township*. Cape Town: UNAIDS.
- Kebaabetswe, P., Bukonda, N.K.Z., Ntseane, D., Thior, I. (2003). *Male involvement in the prevention of mother to child transmission of HIV program in Botswana. First national HIV/AIDS/STI/other related infectious diseases research conference 2003*; Gaborone: WHO.
- Kellerman, S., Lehman, J., Lansky, A., Stevens, M., Hecht, F., Bindman, A., & Wortley, M. (2002). HIV testing within at-risk populations in the United States and the reasons for seeking or avoiding HIV Testing. *J Acquir Immune Defic Syndr*. 6(2) 80-87.
- KEMRI (2001). *AIDS Update*. October-December Vol.4. No. 004. Nairobi: Kemri.
- Kenya Space (2008). *HIV in Kenya*. Retrieved from:Kenyaspace.com.
- KPA (2014-15). *Kenya Ports Authority Handbook*. Nairobi: Land and Marine Publication Ltd.
- Keogh, P., Allen, S., Almedal, C., & Temahagili, B. (1994). *The social impact of HIV infection on women*. Kigali: UNADS.
- King, R., Katuntu, D., & Lifshay, J. (2008). *Processes and outcomes of HIV serostatus disclosure to sexual partners among people living with HIV in Uganda*. Kampala: AIDS Behav.

- Kline, T.J. B. (2005). *Psychological Testing: A practical Approach to Design and evaluate*. New Delhi: Sage Publication.
- Kleinman, A., Eisenberg, L., & Good, B. (1978). *Culture Illness and care: Clinical lessons from anthropological and cross-cultural research*. MA: Ann Intern Med.
- Kumarasamy, N., Cohen, M.S., Chen, Y. Q., McCauley, M., Gamble, T., & Hosseinipour, M.C. (2011). Prevention of HIV-1 infection with early antiretroviral therapy. *NEngl J Med*, 2(2), 36 -52.
- Lauby, J., Bond, L., Eroglu, D., & Batson, H. (2006). Decision balance, perceived risk and HIV testing practices. *AIDS and Behaviour*, 4(2), 36- 42.
- Liddicoat, R.V., Losina, E., Kang, M., Freedberg, K.A., & Walensky, R.P. (2006). *Refusing HIV testing in an urgent care setting: results from the "Think HIV" program*. Kinsasa: AIDS Patient Care STDS.
- Long, E.F., Mandalia, R., Mandalia, S., Alistar, S. S., Beck, E. J., & Brandeau M.L. (2014). *Expanded HIV testing in low-prevalence, high-income countries: a cost-effectiveness analysis for the United Kingdom*.
- Luginaah, I.N., Yiridoe, E.K., & Taabazuing, M.M. (2005). *From mandatory to voluntary testing; balancing human rights, religions and cultural values, and HIV/AIDS prevention in Ghana*. Ghana: Soc Sci Med.
- Lwanga, S.K & Lemeshow, S. (1991). *Sample Size Determination in Health Studies: A Practical Manual*. Geneva: World Health Organization.

- Ma, W., Detelsb, R., Fengb, Y., Wua, Z., & Shenc, L. (2007). *Acceptance of and barriers to voluntary HIV counselling and testing among adults*. Guizhou province: WHO.
- Makoe, L.N., Greeff, M., Phetlhu, R.D., Uys, L.R., Naidoo, J.R., Kohi, T.W., ... & Holzemer, W.L. (2008). Coping with HIV-related stigma in five African countries. *J Assoc Nurses in AIDS Care*, 6(2), 83- 92.
- Maman, S., Mbwapo, J., Hogan, N., Kilonzo, G., & Sweat, M. (2001). *Women's Barriers to HIV-1 Testing and Disclosure: Challenges for HIV-1 Voluntary Counseling and Testing*. Arusha: AIDS Care.
- Maman, S., & Medley, A.A. (2004). *Gender dimensions of HIV Status Disclosure to Sexual Partners: Rates, Barriers and Outcomes*. Geneva: WHO.
- Marks, G., Mansergh, G., Crepaz, N., Murphy, S., & Miller, L.C. (2005). *Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: implications for HIV prevention programs*. California: JAIDS.
- Matovu, J.K., & Makumbi, F.E. (2007). Expanding access to voluntary HIV counseling and testing in sub-Saharan Africa: alternative approaches for improving uptake, 2001-2007. *Tropical Medicine and International Health*, 5(3), 37-41.
- Mgosh, C., Kweka, E., Mahande, A., Barongo, L.R., Shekalaghe, S., Nkya, H.M., Lowassa, A., & Mahande, M.J. (2009). *Evaluation of uptake and attitude to voluntary counseling and testing among health care professional students*. Kilimanjaro: UNAIDS.

- Minchakpu. O. (2004). *Nigerian Anglican Church makes HIV test mandatory for couples*. Nigeria: Ecumenical news International.
- Mindry, D., Maman, S., Chirowodza, A., Muravha, T., van Rooyen, H., & Coates, T. (2011). *Looking to the Future: South African Men and Women Negotiating HIV Risk and Relationship Intimacy*. Pretoria: Culture, Health & Sexuality.
- Ministry of Health (2001). *AIDS in Kenya background, projections, impact, interventions, policy. (Six edition)*. Nairobi: MoH.
- Ministry of Health. (2014). *Kenya HIV estimates 2014*. NASCOP/NACC. Nairobi: MoH.
- Ministry of state for public service public sector (2010). *Public sector workplace policy on HIV and AIDS*. Nairobi: NAIDS.
- Miller, A.N., & Rubin, D.L. (2007). *Factors leading to self-disclosure of positive HIV diagnosis*. Nairobi: NAIDS.
- Moyer, E. (2014). *Peer mentors, mobile phone and pills: collective monitoring and adherence in Kenyatta National Hospital's HIV treatment programme*. New York: Anthropol. Med.
- Mugenda, O., & Mugenda, A. (2003). *Research methods. Quantitative and Qualitative approaches*. Nairobi: ACTS.
- Mugisha, E., Rensburg, G.H., & Potgieter. E. (2010). Factors influencing utilization of voluntary counseling and testing service in Kasenyi fishing community in Uganda. *JANAC*, 21, 107-109.
- Musheke, M., Ntalasha, H., Gari, S., McKenzie, O., Bond, V., Martin-Hiber, A., & Merten, S. (2013). *A systemic review of qualitative findings on factors*

enabling and deterring uptake of HIV testing in Sub-Saharan Africa. Ivory Coast: BMC Public Health.

Mutevedzi, P. C., & Newell, M. L. (2011). A missing piece in the puzzle: HIV in mature adults in Sub-Saharan Africa. *Future Virol*, 6.

Mwaura, E. (2009) *HIV/AIDS prevention strategies in Kenya. A critical review.* Nairobi: NACC.

NACC (2007).*Kenya national HIV/AIDS strategic plan.* Nairobi: NACC.

NASCOP (2005). *Guidelines for antiretroviral drug therapy in Kenya.* Nairobi: NASCOP.

NASCOP (2008) *Guidelines for HIV Testing and Counselling in Kenya.* Nairobi: NASCOP.

NASCOP. (2010).*Guidelines for HIV Testing and Counselling in Kenya.* Nairobi: NASCOP.

NASCOP/ Ministry of Public Health and Sanitation, Kenya. (2010). *National guidelines for HIV testing and counseling in Kenya* (2nd ed). Nairobi: NASCOP.

NASCOP. (2011). *Guidelines for Antiretroviral Therapy in Kenya.* Nairobi: NASCOP.

NASCOP (2012).*Achieving Universal Access to Knowledge of HIV Status.* The Kenya HTC Report 2011.Nairobi: NASCOP.

NASCOP (2011-2012). *Kenya, county HIV service delivery profiles.* Nairobi: NASCOP.

NASCOP, (2012). *Guidelines for prevention of mother to child transmission (PMTCT) of HIV/AIDS in Kenya fourth edition.* Nairobi: NASCOP.

NASCOP (2012). *Kenya AIDS Indicator Survey 2012*. Nairobi: NASCOP.

NACC & NASCOP (2012). *Kenya AIDS Epidemic update 2011*. Nairobi: NACC and NASCOP.

Neema, S. & Koster, W. (2009). *Implementation and effects of HIV and AIDS workplace policies in Ugandan non-governmental organizations involved in the STOP AIDS NOW! Project* 'Managing HIV and AIDS in the workplace in Uganda. Kampala: NACC and NASCOP

Negin, J., Nemser, B., Cumming, R., Lelera, E., & Ben, A. Y. (2012). *HIV attitudes, awareness and testing among older adults in Africa*. Cameroon: AIDS behave.

Nglazi, M.D., van Schaik, N., Kranzer, K., Lawn, S.D., Wood, R., & Bekker, L.G. (2012). *An incentivized HIV counseling and testing program targeting hard-to-reach unemployed men*. Cape Town: WHO.

Niyukuri, B. (2012). *Addressing the HIV and AIDS stigma: a pastoral approach for church leaders in Khayelitsha*. Cape Town: WHO.

Njau, B., Ostermann, J., Brown, D., Mühlbacher, A., Reddy, E., & Thielman, N. (2014). *HIV testing preferences in Tanzania: a qualitative exploration of the importance of confidentiality, accessibility, and quality of service*. Arusha: Karolinska Institutet.

Nuwaha, F., Faxelid, E., & Hojer, B. (1999). *Predictors for condom use among patients with sexually transmitted diseases in Uganda*. Kampala: Sex Transm.

Nuwaha, F. (2000). *Department of public health sciences, Division of International Health (IHCAR)*, Stockholm: Karolinska Institutet.

- Nyuzaghl, J., Ohene, S.A., & Odoi-Agyarko, K. (2011). *Acceptability of routine offer of HIV testing (Opt-out Approach) among women in the Wa municipality*. *Ghana Medical Journal*, 6(2), 25 -31.
- Obermeyer, C.M. (2006). The Utilization of Testing and Counseling for HIV; A Review of the Social and Behavioral Evidence. *Am J Public Health*, 8(3), 76 – 82.
- Obermeyer, C., & Osborn, M. (2007). The utilization of testing and counseling for HIV: A review of the social and behavioural evidence. *American Journal of Public Health*. 6(2), 45.
- Odhiambo, F. B., Kikuvi, G., Omolo, J., & Wanzala, P. (2012). *Factors Associated With Uptake of Voluntary Counselling and Testing Services among Boda Boda Operators in Ndhiwa Constituency, Western Kenya*. Kisumu: UNAIDS/WHO.
- Ogoia, D., Ikuabe, P., Ebuanyi, I., Harry, T., Inatimi, O., & Chukwueke, O. (2015). *Types and predictors of partner reactions to HIV status disclosure among HIV-infected adult Nigerians in a tertiary hospital in the Niger Delta*. Niger Delta: Afr Health Sci.
- Oguntibeju, O.O. (2012). *Quality of life of people living with HIV and AIDS and antiretroviral therapy*. HIV/AIDS. Auckland, NZ: UNAIDS/WHO.
- Omanje, T.S., Bosire, S., & Mwenda, S. (2015). *Knowledge and Perceptions of HIV/AIDS among Married Couples in Kenya*. Nairobi: UNAIDS/WHO.
- Orubuloye, I.O., Caldwell, J., & Caldwell, P. (1993). *African women's control over their sexuality in an era of AIDS: A study of the Yoruba of Nigeria*. Yoruba: Soc Sci Med.

- Pant, P.N., Sharma, J., & Shivkumar, S. (2013). *Supervised and Unsupervised Self-Testing for HIV in High- and Low-Risk Populations: A Systematic Review*. Weiser SD, editor. *PLoS Medicine*, 5(2), 21. 32.
- Pinsky, L., & Douglas, P. H. (2009). *The essential AIDS fact book*. New York: UNAIDS.
- Paxton, S. (2005). *AIDS-related discrimination in Asia*. Asia: AIDS Care.
- Peacock, D., Redpath, J., Weston, M., Evans, K., Daub, A., & Greig, A. (2008). *Literature Review on Men, Health and HIV and AIDS in South Africa*. Johannesburg: UNAIDS/WHO..
- Piot, P., & Coll-Seck, A. M. (2001). *International response to HIV/AIDS epidemic planning for Success*. Geneva: World health organization.
- Rice, E., Comulada, S., Green, S., Arnold, E.M., & Rotheram-Borus, M.J. (2009). *Differential disclosure across social network ties among women living with HIV*. AIDS Behaviour. Geneva: UNAIDS/WHO.
- Rou, K., Guan, J., Wu, Z.L., Rotheram, M.J., Detels, R., Wen, Y., Lin, C., & Cao, H. (2009). Demographic and Behavioural Factors Associated With HIV Testing in China. *Journal Acquired Immune Deficiency Syndrome*. 8(3).
- Sanga, Z., Kapanda, G., Msuya, S., & Mwangi, R. (2015). *Factors influencing the uptake of Voluntary HIV Counseling and Testing among secondary school students in Arusha City, Tanzania: a cross sectional study*. Arusha: UNAIDS.
- Särndal, Carl-Erik., Swensson, Bengt., & Wretman, (2003). *Model assisted survey sampling*. Miami Beach, FL: U.S.A. Springer.

- Schneider, J., Kaplan, S.H., Greenfield, S., Li, W., & Wilson, I.B. (2004). Better Physician-patient relationships are associated with higher reported adherence to antiretroviral therapy in patients with HIV infection. *J Gen Intern Med.* 3(2), 34 - 56
- .Sieber, J. E. (2001). *Privacy and Confidentiality: As Related to Human Research in Social and Behavioral Science*. Online Ethics Center at the National Academy of Engineering.
- Soskolne. V. (1991). *Condom use with regular and casual partners among women attending family planning clinics*. Family Planning Perspectives. Brookfield: UNAIDS.
- Serwadda, D., Gray, R.H., & Wawer, M.J. (1995). *The social dynamics of HIV transmission as reflected through discordant couples in rural Uganda*. Kampala: AIDS.
- Skovdal, M., Campbell, C., Nyamukapa, C., & Gregson, S. (2011b). When Masculinity Interferes with Women's Treatment of HIV Infection: A Qualitative Study about Adherence to Antiretroviral Therapy in Zimbabwe. *Journal of the International AIDS Society.* 7(3).
- Snow, R., M. Madalane and M. Poulsen. 2010. "Are Men Testing? Sex Differentials in HIV Testing in Mpumalanga Province, South Africa. Mpumalanga: AIDS Care.
- Stephen, O., OfiaeliNgozi, U., Ele, P., Reynolds, F., & Oluboyo,B. (2014). HIV infection among 50 years and above attending HIV counseling and testing (HTC) in Nnewi, Nigeria. *World journal of AIDS*.
- Stover, J. (2014). Presentation. UNAIDS Global Condom Meeting. Geneva: UNAIDS.

- Sukari, O. (2007). *Barriers and attitudes towards HIV Voluntary Counseling and Testing among Secondary School Pupils of Sengerema*. Mwanza: UNAIDS/WHO
- Takele, M., Ahmed, A., & Alemayehu, W. (2015). *Factors associated with HIV counseling and testing and correlations with sexual behavior of teachers in primary and secondary schools*. Addis Ababa: UNAIDS/WHO.
- Thierman, S., Chi, B.K., Levy, J.W., Sinkala, M., Goldenberg, R.L. & Stringer, J.S. (2006). *“Individual–level predictors for HIV testing among antenatal attendees*. Lusaka: UNAIDS/WHO.
- Thior, I., Gabaitiri, L., Grimes, J., Shapiro, R., Lockman, S., & Kim, S. (2007). *Voluntary Counseling and Testing among Post-partum women in Botswana*. Botswana: Patient Education and Counseling.
- UNAIDS Joint United Nations Program on HIV/AIDS (2001). *AIDS Epidemic Update December “and “Report on the global HIV/AIDS epidemic*. Geneva: UNAIDS/WHO.
- UNAIDS/WHO (2004). *Policy Statement on HIV Testing*. Geneva: UNAIDS/WHO.
- UNAIDS/WHO (2008). *Report on the Global AIDS Epidemic, end of 2007*. Geneva: UNAIDS,WHO.
- UNAIDS (2010).*UNAIDS Report on the global AIDS epidemic*. Geneva: UNAIDS.
- UNAIDS. (2011). *Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access Progress Report 2011*. Geneva: UNAIDS.
- UNAIDS (2012).*Report on the Global AIDS Epidemic 2012'*. Geneva: UNAIDS.

- UNAIDS (2013). *Report on the global AIDS epidemic 2013*. Geneva: UNAIDS.
- UNAIDS (2014). *Report on the global AIDS epidemic 2014*. Geneva: UNAIDS.
- UNAIDS, (2014). *Fast-Track: ending the AIDS epidemic by 2030*. Geneva: UNAIDS.
- UNAIDS, (2015). *Report on the Global AIDS Epidemic 2012'*. Geneva: UNAIDS.
- UNGASS, (2014). *Kenya AIDS Response Progress Report 2014: Progress Towards Zero*. Geneva: UNGASS.
- Unge, C., Södergård, B., & Marrone, G. (2010). Long-term adherence to antiretroviral treatment and program drop-out in a high-risk urban setting in sub-Saharan Africa: a prospective cohort study. *PLoS One*, 4(2).
- Ullah, A.A., & Shafi qul H, A. (2014). *Asian Immigrants in North America with HIV/AIDS Stigma, Vulnerabilities and Human Rights*. New York: London: WHO.
- Uneke, C.J., Alo, M., & Ogbu, O. (2007). *Mandatory premarital HIV testing in Nigeria: The public health and social implications*. Nigeria: AIDS Care.
- United Nations Development Programme, (2012). *Global Commission on HIV and the Law. Risks, rights & health*. New York: UNDP.
- Uzochukwu, B., Uguru, N., Ezeoke, U., Onwujekwe, O., & Sibeudu, T. (2011). Voluntary counseling and testing (VCT) for HIV/AIDS: *a study of the knowledge, awareness and willingness to pay for VCT among students in tertiary institutions*. Enugu: Nigeria: Voluntary counseling and testing (VCT).

- Vannotti, M., Samaniego, M., Guex, P., & Rossi, I. (1994). *Perception of anxiety in patients requesting anonymous HIV testing*. Schweiz: Med Wochenschr.
- Visser, M.J., Neufeld, S., de Villiers, A., Makin, J.D., & Forsyth, B.W.C. (2008). *To tell or not to tell: South African women's disclosure of HIV status during pregnancy*. Pretoria: AIDS Care.
- Wakibi, S. N., Ng'ang'a, Z. W., & Mbugua, G.G. (2011). *Factors associated with non-adherence to highly active antiretroviral therapy*. Nairobi: AIDS Care Kenya.
- Wamyeze, R.K., Kamya, M.R., & Fatch, R. (2013). *Abbreviated HIV counselling and testing and enhanced referral care in Uganda: a factorial randomised controlled trial*. California: Lancet Global Health.
- Weiser, S., Wolfe, W., & Bangsberg, D. (2003). Barriers to antiretroviral adherence for patients living with HIV infection and AIDS in Botswana. *J Acquir Immune Defic Syndr*. 6(2), 67-94.
- WHO/UNAIDS. (2001). *Information note on Effectiveness of Condoms in Preventing Sexually Transmitted Infections including HIV*. Geneva: Switzerland.
- WHO, (2011). *Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access: Progress report 2011*. Geneva: Switzerland.
- WHO, (2012). *Service delivery approaches to HIV testing and counseling (HTC): A strategic HTC programme framework*. Geneva: Switzerland.
- WHO, (2014). *Getting to zero 2011–2015 strategy*. Joint United Nations programs on HIV/AIDS. Geneva: Switzerland.

- World Bank, (2009). *Regional HIV/AIDS update*. Washington: USA.
- WHO. (2013). *HIV and Adolescents guidance for HIV testing and counseling and care for adolescents living with HIV*. Washington: USA
- Worth, D. (1989). *Sexual decision-making and AIDS: why condom promotion among vulnerable women is likely to fail*. Washington: Studies in Family Planning.
- Wringe, A., Isingo, R., Urasa, M., Maiseli, G., Manyall, R., Chagalucha, J., ... & Zaba, B. (2008). *Uptake of HIV Voluntary and Counseling services in rural Tanzania: implications for effective HIV treatment and equitable access to treatment*. Tropical Medicine and International Health.
- Yahaya, L.A., Jimoh, A.A, & Balogun, O.R. (2010). *Factors hindering acceptance of HIV/AIDS voluntary counseling and testing (VCT) among youth*. Kwara State, Nigeria: HIV/AIDS voluntary counseling.
- Zerbe, A., Abrams, E., Remien, R., Mantell, J., Pitt, B., A. DiCarlo, A., McKeague, I., & El-Sadr, W. (2012). *Population Characteristics and Implications for Prevention Interventions for Men and Women: Lesotho.*” Poster Abstract 1139. 19th Conference on Retroviruses and Opportunistic Infections. Seattle: Washington.

APPENDICES

Appendix I: Participants Consent Form (English) Informed Consent for Employees at Kenya Ports Authority

MOMBASA ON VCT

I am Jane Wangui Karanja from Jomo Kenyatta University of Agriculture and Technology Mombasa. I will be researching on factors influencing voluntary counseling and testing uptake among Kenya Ports Authority employees in Mombasa. The employees have been randomly selected to participate in the research. We highly regard the information that you will give us.

Procedure

The questionnaire will take between 15-20 minutes. No names will be written for anonymity purpose but the questionnaires will be coded.

Benefits

The outcome of this study would be important in guiding policy related to scaling up and promotion of VCT services in KPA, Mombasa. The study will also establish the preferred mode of VCT delivery among the employees in order to increase the uptake.

Confidentiality

Confidentiality and privacy will be achieved by maintaining very strict controls over access to the respondent's information. Anonymity will be practiced by using code numbers only instead of names. The information provided will be used only for research purpose and will not be divulged without the respondent's consent.

Voluntary consent

Participation will be voluntary and the respondents will not be coerced nor penalized for declining to participate in the research. The respondents will also be allowed to withdraw anytime during the research and ask any question at any time during the research.

Potential risks

There will be no risk during the research.

For any inquiries, please feel free to contact the researcher through cell phone

Number **0722-369567**

or

The Chairman,

Ethics Review Committee

Pwani University

P.O. Box 195 -80108, Kilifi, Kenya

Tell: 0719 182218

Respondent's signature

Date

Researcher's signature

Date

Appendix 2: Participants Consent Form (Kiswahili)

HATI YA KUOMBA USHIRIKI KATIKA UTAFITI KWA WAFANYAKAZI WA BANDARI YA MOMBASA

UTAFITI NI USHAURI NASAHA WA HIARI UNAOITWA “VCT”

Mimi Bi. Jane Wangui Karanja ni mwanafunzi katika chuo kikuu cha Ukulima na Teknologia cha Jomo Kenyatta kilicho Mjini Mombasa. Ninaomba kufanya utafiti wa kutafuta sababu mbalimbali ambazo zinawafanya wafanyakazi bandarini waamue kutumia au kutotumia huduma za ushauri nasaha wa hiari. Mchango wa maoni na mawazo yako utaboresha utowaji wa huduma hii.

Utaratibu wa ushiriki

Ninakuomba ujaribu kuyajibu maswali yote kuhusu utumiaji wa huduma za Ushauri nasaha. Itakuchukua dakika 15 hadi 20 kuyajibu. Makaratasi yenye maswali hayataandikwa majina yenu ndio kuwe na usiri lakini yatakua na nambari.

Faida

Hakuna faida ya moja kwa moja utakayopata kwa kushiriki katika utafiti huu. Lakini taarifa utakazotoa zitasaidia kuboresha utowaji huduma zinazotolewa katika vituo vya ushauri nasaha hapa Bandarini Mombasa.

.

Usiri

Taarifa zote tutakazozipata kutoka kwako tutazitunza kwa usiri mkubwa. Wale watakaoruhusiwa kuziona ni wale tu wanaohusika na utafiti huu. Unaombwa kutoandika jina lako kwenye karatasi ya maswali hivyo hakuna mtu atakaeweza kukutambua au kujua ulijibu vipi maswali.

Ushiriki

Ushiriki wako katika utafiti huu ni wa hiari. Unayo haki yakutoshiriki au kujiondoa kwenye utafiti huu wakati wowote na wala hutaulizwa sababu ya kutoshiriki. Kujiondoa kwako hakutasitisha wewe kupewa huduma katika kituo chochote cha ushauri nasaha au huduma zingine za afya zinazotolewa Bandarini. Kama unakubali kushiriki katika utafiti huu, tafadhali weka sahihi yako katika nafasi ya kwanza hapo chini.

Sahihi ya Mshiriki.....Tarehe.....

Sahihi ya Mtafiti.....Tarehe.....

Ukiwa na swali au maswali yoyote unaweza kuwasiliana na mtafiti kwa nambari hii ya simu.

0722-369567 au

The Chairman, **Ethics Review Committee**, Pwani University P.O. Box 195 -80108,
Kilifi, Kenya.

Appendix 3: Questionnaire (English)

STRUCTURED QUESTIONS

The questionnaire has three sections. Section I will be on employees' socio-demographic background, section II will be on the proportion of KPA employees who utilizes the VCT services and the section III will be on factors influencing the VCT uptake. Kindly ✓ (tick) the appropriate answer(s).

The questionnaire will take approximately 15-20 minutes. All responses collected will be put into a written report and codes will replace the respondents names hence it will not be possible to identify the respondents. All the data collected will be kept secure and no other person besides the researcher and the supervisor will have access to the completed questionnaire. Respondents will have a right not give consent and they will not be penalized. There will be no correct or wrong answer and confidentiality will be maintained.

SECTION I Socio-Demographic Information

Basic Information

1. Date of interview. _____

2. What is your sex/gender?

(i) Male () (ii) Female ()

3. What is your Age?

20-29 ears () 30-39 years () 40-49years () 49 and above ()

4. What is your current marital status?

Single () Married () Divorced ()

Widowed/ widower ()

5. What is your level of education?

Primary education Std 1- 8 () Secondary education form I- IV ()

Mid-level College education () University education ()

6. What is your Religion?

Muslim () Christian () Others ()

SECTION II

Please **TICK** what in your opinion is the best answer (s) to the questions below. Kindly give your honest opinion. There is no correct or wrong answer and a question can have more than one answer.

PRACTICE ON HIV/AIDS AMONG KPA EMPLOYEES, MOMBASA.		
No.	Question	Response
1.	Have you ever had an HIV test?	1.YES 2.NO
2.	If, YES when did you last take the test?	1.Less than 3 months ago 2.3-6 months ago 3.6months-1year ago 4.More than 1 year ago 5.Cannot remember
3.	If NO to question 1 above, why have you not taken the test? Please proceed to question 12	1.No cure for HIV 2.Fear of positive results 3.It is not necessary 4.My partner unwilling to accompany me 5.No answer
4.	How many times have you gone for VCT?	1.Once 2.More than once

5.	What motivated you to do the test?	1. To know HIV status 2. Due to poor health 3. Donating blood 4. To plan for future 5. Had an protected sex with untrustworthy partner 6. Influenced by friends 7. Influenced by partner 8. Influenced by media
6.	Where did you take the test?	1.VCT in KPA 2.VCT outside KPA 3.While admitted in the hospital
7.	Were the results communicated to you?	1.YES 2.NO
8.	Did your partner accompany you to the test?	1.YES 2.NO
9.	Did anything change in your life after the test?	1.YES 2.NO

10.	If the answer is YES what changed in your life?	1.Sex life 2.View on HIV transmission risk 3.Others
11.	Did you communicate the results to your partner?	1.YES 2.NO
12.	Have you ever used condom?	1.YES 2.NO

SECTION III

KNOWLEDGE, ATTITUDES AND PRACTICES		
13.	Do you consider yourself to be at risk of HIV infection?	1.YES 2.NO
14.	Does having many partners predispose one to HIV infection?	1.YES 2.NO
15.	Is there a cure for AIDS	1.YES 2.NO
16.	Can a healthy looking person carry HIV?	1.YES 2.NO

17.	Do you know the importance of condom in HIV/STI/pregnancy protection?	1.YES 2.NO
18.	Do you know someone living with HIV at your work place?	1.YES 2.NO
19.	Are they on ARVs?	1.YES 2.NO
20.	Does ARVS improve immunity and make one strong?	1.YES 2.NO
21.	How does your employer treat those who have tested HIV positive?	1.Start them on ART 2.Does not care 3.Terminate employment 4.Give them offs and light duties 5.Do not know
22.	Does your employer recognize the rights of the employees living with HIV?	1.YES 2.NO 3.Not sure
23.	Are employees screened for HIV before hiring or promotion?	1.YES 2.NO 3.Do not know
24.	Has anyone denied recruitment or promotion because of HIV status?	1.YES 2.NO

		3.Do not know
25.	Is there an HIV/AIDS workplace program?	1.YES 2.NO 3.Do not know
26.	Is VCT done in a private session where strict confidentiality is assured?	1.YES 2.NO
27.	Is adequate information about HIV infection, transmission and prevention provided during the session?	1.YES 2.NO
28.	Will you feel comfortable if tested by someone you know?	1.YES 2.NO
29.	How will you react if you knew that someone you are working with is HIV positive?	1.Shocked 2.Happy 3.Unhappy
30.	Will you take the HIV test even when you are faithful to your partner?	1.YES 2.NO
31.	What will you do if you test HIV positive?	1.Stop having sex 2.Avoid pregnancy 3.Avoid marriage

		4.Get divorce 5.Use condom 6.Commit suicide 7.Start on ART 8.Beg God for forgiveness
32.	How will you react if your partner tested HIV positive?	1.Happy 2.Unhappy 3.Do not know
33.	What will you do if partner tested HIV positive?	1.Stop having sex 2.Avoid pregnancy 3.Avoid marriage 4.Get divorce 5.Use condom 6.Go for HIV testing 7.Take care of partner 8.Stop having any contact
34.	Will you eat and drink together with an AIDS patient?	1.YES 2.NO 3.Do not know

35	Whom will you feel comfortable to disclose your HIV status?	1.Colleague(s) 2.Management 3.Others
36.	Should the AIDS patient be isolated from the society?	1.YES 2.NO 3.Do not know

This is the end of the questionnaire. Thank you for taking your time to respond to these questions, the information that you have provided will go a long way in

improving VCT services in the KPA.

Appendix 4: Questionnaire (Kiswahili)

MPANGILIO WA MASWALI

Unaombwa kujibu msururu wa maswali yalioko kwenye karatasi hii na usiandike jina lako ndio kuwe na usiri. Nakala hizi zitatunzwa kwa usiri mkubwa sana na namba maalum zitatumiwa badala ya majina ya washiriki kwa hivyo hawataweza kutambulika. Wanaoshiriki peke yake kwenye utafiti huu ndio watakaoweza kuziona nakala za utafiti. Hakuna jibu sahihi au lisilo sahihi kwa hivyo jibu kulingana na vile unavyolielewa hilo swali. Washiriki hawatalazimishwa kushiriki katika utafiti huu. Itakuchukua dakika 15 -20 kujibu maswali haya.

SEHEMU YA I: Maswali yanayomhusu mshiriki

Maswali ya msingi

1. Tarehe ya ushiriki. _____

2. Wewe ni wa jinsia ipi?

(i) Mume () (ii) Mke ()

3. Je na Uumri wa miaka mingapi?

miaka 20-29 () miaka 30-39 ()

miaka 40-49 () miaka 49 na zaidi ()

4. Hali yako ya ndoa kwa hivi sasa ni ipi?

Sijaolewa/sijaoa () Niko kwenye ndoa () Nimetalakiwa ()

Mjane ()

5. Kiwango chako cha elimu ni kipi?

Shule ya msingi 1- 8 () Shule ya upili I- IV ()

Chuo vya kiufundi () Chuo Kikuu ()

6. Wewe ni wa dini gani?

Muislam () Mkristu () Dini zingine ()

SEHEMU YA II

Unaombwa uweke alama ya TICK (✓) kwenye jibu (majibu) ambalo ni bora zaidi kwa maoni yako. Hakuna jibu au majibu ambayo ni sahihi au sisahihi. Swali linaweza kuwa na jibu zaidi ya moja

WAFANYAKAZI WANAOTUMIA HUDUMA YA USHAURI NASAHA (VCT)		
No.	Swali	Jibu
1.	Ushawahi kupimwa kama una virusi vya HIV?	1.NDIO 2. LA
2.	Kama jibu ni NDIO, ulipimwa lini?	1.Chini ya miezi 3 2.Miezi 3-6 iliyopita 3.Miezi 6- mwaka mmoja 4.Zaida ya mwaka mmoja uliopita 5.Sikumbuki
3.	Kama Jibu la swali namba 1 ni LA, kwa	1.Kwa kuwa ukimwi

	nini hujataka kupimwa kama una virusi vya HIV? Tafadhali endelea kujibu maswali kutoka swali la 12.	<p>hauna tiba</p> <p>2.Naongopa kuambiwa niko na virusi vya HIV</p> <p>3.Si lazima</p> <p>4.Mpenzi wangu hataki kuandamana nami</p> <p>5.Sinajibu</p>
4.	Mara ngapi umetembelea kituo the VCT?	<p>1.Mara moja</p> <p>2.Zaidi ya mara moja</p>
5.	Msukumo huo wa kupimwa ulisababishwa na nini?	<p>1.Kutaka kujua kama nina virusi vya HIV</p> <p>2.Kwa sababu hali yangu ya afya imedhoofika</p> <p>3.Nataka kutoa damu</p> <p>4.Nataka kupanga maisha yangu ya baadaye</p> <p>5.Nimefanya mapenzi na mpenzi nisiye mwamini</p> <p>6.Msukumo kutoka kwa marafiki zangu</p>
6.	Ulienda wapi kupimwa iliujue kama una	1.VCT ya KPA

	virusi au hauna?	2.VCT isiyo ya KPA 3.Wakati nilikuwa nimelazwa hospitalini
7.	Je, mhudumu alikupatia majibu baada ya kupimwa?	1.NDIO 2.LA
8.	Je, mpenzi wako aliambatana nawe wakati ukienda kupimwa?	1.NDIO 2.LA
9.	Muenendo wako ulibadilika baada ya kupimwa kama una virusi?	1.NDIO 2.LA
10.	Kama jibu lako kwa swali namba 9 ni NDIO, kitu gani kilibadilika?	1.Jinsi ninavyoshiriki katika ngono 2.Mtazamo wangu kwa mambo ambayo yaweza kunifanya nipate virusi vya HIV 3.Mambo mengine
11.	Je, ulimueleza mpenzi wako matokeo ya majibu yako baada ya kupimwa?	1.NDIO 2.LA
12.	Je, ushawahi kutumia mpira wa condomu unapofanya mapenzi?	1.NDIO 2.LA

SEHEMU YA III

MAMBO AMBAYO YANAHUSISHWA NA UTOAJI HUDUMA YA USHAURI NASAHA YA HIARI		
13.	Je, kuna uwezekano wa wewe kuambukizwa virusi vya HIV?	1.NDIO 2.LA
14.	Je, kuwa na wapenzi wengi kwa weza kusababisha wewe upate virus vya HIV?	1.NDIO 2.LA
15.	Je, ugonjwa wa ukimwi (AIDS) una tiba?	1.NDIO 2.LA
16.	Je, mtu ambaye anaonekana mwenye afya nzuri anaweza kuwa na virusi vya HIV?	1.NDIO 2.LA
17.	Je, unajua umuhimu wa mpira wa condomu katika kukuinga kutokana na maambukizi ya virusi vya HIV, magonjwa ya zinaa au kupata ujauzito?	1.NDIO 2.LA
18.	Je, unamfahamu mtu ambaye anaishi na virusi vya HIV Bandarini?	1.NDIO 2.LA
19.	Je,unafahamu kama wanatumia dawa za kupunguza makali virusi au ARVs?	1.NDIO 2.YES
20.	Je,dawa za ARVs zinaweza kuimarisha afya yako?	1.NDIO 2.LA
21.	Je, muajiri wako anawahudumia vipi wanaoishi na virusi vya HIV?	1.Anawaanzisha dawa za ARV 2.Hawajali wafanyakazi

		3.Anawaachisha kazi 4.Anawapatia wakati wa kupumzika au kazi nyepesi 5.Sijui
22.	Je, muajiri wako anazitambua haki za wafanyakazi wanaoishi na virusi vya HIV?	1.NDIO 2.LA 3.Sina uhakika
23.	Je, wafanyakazi wanapimwa virusi vya HIV kabla ya kuajiriwa au kupandishwa cheo?	1.NDIO 2.LA 3.sijui
24.	Je, kuna mfanyakazi yeyote ambaye hakuajiriwa au kupandishwa cheo kwa kuwa anaishi na virusi vya HIV?	1.NDIO 2.LA 3.Sijui
25.	Je, kuna hamasisho la wanaoishi na virusi bandarini? Yaani HIV/AIDS at workplace program?	1.NDIO 2.LA 3.Sijui
26.	Je, kuna usiri wakati mtu anapopimwa virusi katika vituo vinavyo toa ushauri nasaha (VCT)?	1.NDIO 2.LA
27.	Je, wakati unapokuwa ukipatiwa ushauri nasaha huwa unaelimishwa jinsi virusi vinavyo sambaa na mbinu gani utatumia kupunguza ugonjwa usienee?	1.NDIO 2.LA
28.	Je, waweza kukubali kupimwa virusi vya HIV na mtu ambaye unamfahamu?	1.NDIO 2.LA
29.	Utahisi vipi ukijua kuwa mfanyakazi mwenzako anaiishi na virusi vya HIV?	1.Nitashtuka

		2.Nitafurahi 3.Sitafurahi
30.	Je, waweza kukubali kupimwa virusi vya HIV hata kama umwaminifu katika ndoa yako?	1.NDIO 2.LA
31.	Ukipatikana una virusi vya HIV utafanyaje?	1.Nitaacha kufanya ngono 2.Sitataka kupata watoto 3.Sitaolewa wala kuoa 4.Nitapatiana talaka 5.Nitatumia mpira wa condomu 6.Nitajitoa uhai 7.Nitaanza kutumia dawa za kupunguza makali virusi (ARV) 8.Nitamwomba Mungu anisamehe
32.	Utahisi vipi ukiambiwa kuwa mpenzio ana virusi vya HIV?	1.Nitafurahi 2.Sitafurahi 3.Sijui nitahisi vipi
33.	Utafanyaje ukiambiwa kuwa mpenzio ana virusi vya HIV?	1.Nitaacha kufanya ngono naye 2.Sitataka kupata watoto 3.Sitaolewa wala kuoa

		4.Nitapeana talaka 5.Nitatumia mpira wa 6.Kondomu kufanya ngono 7.Nitaenda kupimwa kama mimi pia niko na kirusi 8.Nitamtunza mpenzi wangu 9.Nitasitisha uhusiano
34.	Je, waweza kula na kunywa pamoja na mtu mwenye ukimwi?	1.NDIO 2.LA 3.Sijui
35.	Je, waweza kumueleza nani kama unaishi na virusi vya HIV?	1.Wafanyakazi wenzako 2.Wakubwa wako kazini 3.Watu wengine
36.	Je, ungetaka wanaoishi na virusi vya HIV watengwe na jamii?	1.NDIO 2.LA 3.Sijui

Huu ndio mwisho wa msururu wa maswali. Nakushukuru kwa kuweza kutenga muda wako na kujibu maswali hayo. Nakushukuru na nina kuenzi sana mshiriki maoni na mawazo yako yataweza kuboresha zaidi utoaji wa huduma ya ushauri nasaha wa hiari hapa Bandarini, Ahsante.

Appendix 5: Jkuat Approval Letter



**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY
MOMBASA CAMPUS**

Telegrams "Thika"
Tel: 041 2006404, 0705 628 272
Email: jkuat.ac.ke

OFFICE OF THE DIRECTOR
MOMBASA CAMPUS
P. O. BOX 81110-80100
MOMBASA

22nd May, 2015

JKU/7/1/001

TO THE WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: PERMISSION TO COLLECT DATA FOR JANE WANGUI KARANJA
REG NO: TM310-C005-3673/13

The above mentioned is a student at this Campus undertaking a Masters of Science in Public Health. JANE is in her final year and is expected to collect data based on the project topic "FACTORS INFLUENCING VOLUNTARY COUNSELING AND TESTING UPTAKE AMONG KENYA PORTS AUTHORITY EMPLOYEES IN MOMBASA."

Any assistance given to her will be highly appreciated.

Thank you.

22 MAY 2015

Yours Sincerely,


Dr. Fred Mugambi Mwirigi
DIRECTOR.



JKUAT is ISO 9001:2008 and 14001:2004 CERTIFIED
Setting Trends in Higher Education, Research and Innovation

Appendix 6: Kenya Maritime Authority Approval Letterb



"For safe and efficient water transport"

KENYA MARITIME AUTHORITY
White House, Moi Avenue, P. O. Box 95076 - 80104,
Mombasa, Kenya.

Phones: : +254 (0) 41 231 8398 / 9, + 254 (0) 20 238 1203/4
Mobile: : +254 (0) 724 319 344 / +254 (0) 733 221 322
Fax : +254 (0) 41 231 8397 / +254 (0) 20 238 1202

E-mail : info@kma.go.ke
Website : www.kma.go.ke

REF: KMA/HRM

22nd January, 2015

Ms. Jane W. Karanja,
P.O Box 1935,
Mombasa

Dear Jane,

ACADEMIC RESEARCH

We acknowledge with thanks receipt of your letter dated 19th January, 2015 in respect to the above subject matter.

This is to kindly inform you that you may proceed with the pilot study.

Yours faithfully,

Henry Mwasaru
Human Resource & Admin.

FOR: DIRECTOR GENERAL

Appendix 7: KPA Approval Letter



Kenya Ports Authority

P. O. Box 95009 - 80104 Mombasa, Kenya.
Tel: +254 - 41 - 2112999 / 2113999
Mobile: 0720 202424 0734 221211
0720 202525 0734 312211
0720 312211 0735 337941 - 6
0722 208661 - 5
Wireless: +254 - 20 - 3575880 - 9
Fax: +254 - 41 - 2311867
Website: www.kpa.co.ke

MPE/2/1/20

5th June 2015

TO WHOM IT MAY CONCERN

RE: PROJECT RESEARCH

Approval has been granted for Ms. Jane W. Karanja, Senior Clinical Officer to carry out Project research with the Authority for a period of four weeks with effect from 8th June to 9th July 2015. The Project research will be on factors influencing voluntary counselling and testing (VCT).

Kindly accord her the necessary assistance.

PP:


Boaz O. Ouko
PRINCIPAL HUMAN RESOURCE DEV. OFFICER
For: GENERAL MANAGER HUMAN RESOURCES & ADMIN.

K.P.A. 5023801017

Appendix 8: Certificate of Ethical Approval

NACOSTI ACCREDITED



ERC/MSc/037/2014

ETHICS REVIEW COMMITTEE
ACCREDITED BY THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY
AND INNOVATION (NACOSTI, KENYA)

CERTIFICATE OF ETHICAL APPROVAL

THIS IS TO CERTIFY THAT THE PROPOSAL SUBMITTED BY:

JANE WANGUI KARANJA

REFERENCE NO:
ERC/MSc/037/2014

ENTITLED:
**Factors influencing voluntary counseling and testing uptake among Kenya
port authority employees, in Mombasa**

TO BE UNDERTAKEN AT:
MOMBASA COUNTY, KENYA

FOR THE PROPOSED PERIOD OF RESEARCH
HAS BEEN **APPROVED** BY THE ETHICS REVIEW COMMITTEE
AT ITS SITTING HELD AT PWANI UNIVERSITY, KENYA
ON THE 9th DAY OF MARCH 2015

CHAIRMAN

SECRETARY

LAY MEMBER

PTO



*Pwani University, www.pw.ac.ke, email: r.thomas@pwaniuniversity.ac.ke, tell: 0719 182218.
The ERC, Giving Integrity to Research for Sustainable Development*

Appendix 9: Publication

Global Journal of **Health Science** (GJHS)

**Factors influencing utilization of Voluntary Counseling and Testing Services
Keza Ports Authority employees in Mombasa.**

Wangui K. Kikuvi G. M and Msanzu J.



**Factors influencing utilization of Voluntary Counseling and Testing Services
among Kenya Ports Authority employees in Mombasa, Kenya.**

^{1*}Wangui J. K, ²Kikuvi G. M and ³Msanzu J. B

¹Medical Department, Kenya Ports Authority, P.O. Box 95015-80104, Mombasa.

**²Department of Public and Community Health, School of Public Health, Jomo
Kenyatta University of Agriculture and Technology, P.O. Box 62000-00200
Nairobi.**

**³Department of Pure and Applied Sciences, Technical University of Mombasa, P.O.
Box 90420-80100, Mombasa.**

***Corresponding author: Wangui Jane Karanja, email address:**

janekamaukaranja@gmail.com

ABSTRACT

Purpose: HIV and AIDS remains to be a problem of public health importance worldwide. About 36.9 million people were living with HIV and AIDS by the end of 2014. The greatest burden of the epidemic with about 25.8 million people living with HIV was in Sub-Saharan Africa which also accounted for 66% of the global total of new HIV infections. In Kenya, HIV burden stands at 1.6 million. Early access to testing and treatment would facilitate containing the pandemic and thus achieving 90-90-90 targets by 2020 and end AIDS epidemic by 2030. Voluntary Counseling and Testing (VCT)

aids stigma reduction and also allows for early uptake of services such as counseling for positive living, social support, legal advice and future planning. The objective of this study was to determine factors influencing utilization of voluntary counseling and testing services among Kenya Ports Authority employees in Mombasa.

Methodology: The study participants were drawn from the 32 departments using probability proportion to size sampling method (PPS); respondents within departments were randomly selected. Quantitative data was collected using semi-structured questionnaires. Data was analyzed using the Statistical Package for Social Sciences Version 16 (SPSS 16). Descriptive statistics were used to analyze quantitative data. Regression and correlation analysis were used to analyze the associations between dependent and independent variables.

Results: The prevalence of VCT utilization among the KPA, Mombasa employees was 91.2%. Utilization of VCT services by the employees was supported by marital status, education level and religion, among other factors. Employees were keen to know their status but the majority felt uncomfortable being tested for HIV by someone they knew. Although majority had taken the HIV test more than once, some still declined due to no apparent reason, felt it not necessary, feared positive results or thought there was no cure for AIDS. However, those who tested received feedback promptly and communicated the test results to their partners, although majority did not accompany them. Fewer females disclosed their HIV results compared to males. Regression analysis on data from 295 respondents indicated a positive relationship between the factors analyzed and VCT uptake ($R^2 = 0.600$). Being married was significantly positively associated with VCT utilization among employees ($p=0.015$), so was being accompanied by a partner ($p=0.017$), and communication of results ($p=0.034$). The respondents agreed that ARVs improved immunity and made one stronger. More male than female respondents used condoms during sex and also more male than female respondents disclosed their HIV status. The study further indicated that there was a marginal relationship between VCT utilization and the aspect of being denied recruitment or promotion because of HIV status (odds ratio at 95% CI: 0.982, 2.886; $p=0.057$).

Unique contribution to practice and policy: From the study findings, employees were keen to know their status but the majority felt uncomfortable being tested for HIV by someone they knew and thus a significant number attended VCT outside KPA. A program to help support those who attend VCT outside KPA should be implemented so that such facilities do not run short of VCT program requirements. Although majority had taken the HIV test more than once, those who declined should be encouraged to take the test in order to know their status for prevention and early treatment. Since more male than female respondents disclosed their HIV status and more male than female respondents used condoms during sex, more innovative methods should be devised to encourage female employees to disclose their status and use condom. Special attention should be given to married employees and females

Key words: *HIV, Voluntary counseling and testing (VCT), Utilization, Kenya Ports Authority*

1.0 INTRODUCTION

Statistics on HIV by UNAIDS indicate that by 2014, approximately 36.9 million people were living with HIV that causes AIDS, up from 35 million in the preceding year (UNAIDS, 2015). In 2014, about 2 million people became newly infected with HIV and 1.5 million died of AIDS related causes worldwide (UNAIDS, 2015). About half of the 35 million people who were living with the virus did not know their status, therefore they were likely to pass the virus to others (UNAIDS, 2014). Early access to testing and treatment would facilitate containing the pandemic. Medical evidence showed that people under treatment were unlikely to pass on the virus to partners (UNAIDS, 2014). Twenty five point eight million (25.8 million) people were living with HIV in sub-Saharan Africa who accounted for 66 percent of the global total of new HIV infections (UNAIDS, 2014). In 2012 alone, approximately 1.6 million people in the region became newly infected and approximately 1.2 million adults and children died of AIDS, thus accounting for 75 percent of the world's AIDS deaths in 2012 (UNAIDS, 2013).

Kenya is in the fourth position in terms of HIV epidemic in the world with 1.6 million people living with HIV (UNAIDS, 2013). Heterosexual exposure is the primary mode of transmission in Sub-Saharan Africa and accounts for 80 percent of new infections globally (UNAIDS, 2010). The first HIV case was diagnosed in Kenya in 1984 and by 2012, an estimated 1.6 million people were living with HIV, with approximately 57,000 people dying from AIDS-related illnesses (UNAIDS, 2013). Kenya has both a generalized HIV infection affecting all sections of society and a concentrated epidemic among key populations who include sex workers and their clients, men having sex with men, and people who inject drugs, among others (KAIS, 2012). Kenya declared HIV a national disaster in 1999 when only three voluntary counseling and testing sites were operating (NASCOP, 2011). VCT centers rose to more than 1,000 in 2010 and 4,438 health facilities offered the services (NASCOP, 2011). In 2011, 65 percent of all health facilities, including more than 78 percent of public sector facilities, offered HIV counseling and testing services (NACC & NASCOP, 2012). HIV testing and counseling services are offered free of charge at all public health facilities (NACC & NASCOP, 2012).

According to UNAIDS (2014), AIDS epidemic is expected to come to an end by 2030. This can be achieved if HIV testing is accessed by all. In Kenya, the levels of HIV testing have recently increased to 72 percent of adults aged 15 to 64 having been tested (KAIS, 2012). However, this is far less than the UNAIDS set "90-90-90" targets; aiming to diagnose 90 percent of all HIV positive people, provide antiretroviral therapy to 90 percent of those diagnosed and achieve undetectable HIV RNA for 90 percent of those on treatment by 2020. Over half of (53%) of HIV-infected persons in Kenya still do not know they are HIV infected because they have never been tested for HIV or had been tested but did not receive the results, or believe to be HIV uninfected based on their last HIV test results (KAIS, 2012). According to KNBS (2015), testing especially among men is low. In 2014, only 45 percent men were tested for HIV and received the results compared to over 53 percent women.

Voluntary Counselling and Testing (VCT) was identified by KNASP III as a cornerstone of Kenya's efforts to address HIV (NACC & NASCOP, 2012). VCT facilitates early referral to care and support services, including access to antiretroviral therapy, and was an important linkage with Prevention of Mother to Child Transmission (PMTCT), Sexually Transmitted Infection (STI), and Opportunistic Infection (OI) services (NASCOP, 2012). It also assists in stigma reduction and allows for early uptake of services such as social support, legal advice, counselling for positive living and future planning (NASCOP, 2010). Thus effective HIV testing strategies were noted as a critical strategy for the UNAIDS's goal of "getting to zero" and achieving an "AIDS free generation" (WHO, 2014). The VCT initiative was important because it also promoted and maintained behavior change (Fonner *et al.*, 2012).

The target group for this study was the employees of Kenya Ports Authority (KPA) in Mombasa County with a workforce of more than 7000 employees who are mostly male. According to International Transport workers' Federation (ITF) (2011) report, most of the 34 million people living with HIV (PLHIV) around the world were workers, and transport was one of the most heavily affected sectors. Most port workers are non-mobile transport workers but come into daily contact with many mobile workers such as truckers, and seafarers, and thus have increased the risk of contracting HIV. Studies in some port cities such as Vancouver in Canada, Tema in Ghana, Mumbai in India and Mombasa in Kenya were found to have higher prevalence rates of HIV than the national population (ITF, 2011). By mid 1990s, approximately 27 percent of all employees in KPA were HIV positive and about 12 staff and/or dependants were dying each week (ITF, 2011). This led to loss of skilled and experienced manpower due to deaths, loss of man-hours due to prolonged illnesses, absenteeism and hence reduced production. KPA embarked on HIV education and established an HIV and AIDS policy in 2009 (ITF, 2011). The policy was to guide in prevention, care, treatment and support for the infected and affected employees, including VCT services. However, there is no data on how port workers are utilizing the VCT services. The objective of the study was to

determine factors influencing utilization uptake of voluntary counseling and testing services among Kenya Ports Authority employees in Mombasa.

2.0 MATERIALS AND METHODS

A descriptive cross-sectional study design was carried out. The study was conducted at Kenya Port Authority Mombasa with a population of 6690 employees aged between 20 and over 49 years. The study population included all employees working at the KPA Mombasa, at the time of the study. The sample size was calculated using Cochran (1977) method. Probability Proportional to Size (PPS) sampling was employed in selection of study respondents. A list of all employees in KPA Mombasa was sought from the General Manager, human resource and administration and formed the sampling frame. The list was arranged according to the 8 divisions with 32 departments and a target population of 6690 employees. A calculated sample size of 385 was proportionately distributed to each of the 32 departments depending on the population of employees. Respondents within each department were then randomly selected.

Quantitative data was collected using semi-structured questionnaires which were administered to the employees by the researcher and through the administrators for the employees who were on night shift. The questionnaire was in both English and Kiswahili since not all employees were conversant with English. Before the actual data collection, the questionnaire was pre-tested on 10 employees of Kenya Maritime Authority who were not involved in the study but also in the transport industry like KPA, to ensure the validity and reliability of the data. The result was used to ascertain homogeneity and clarity of the questions. The questionnaire was also administered at two different times to check for consistency in response.

Data generated from the questionnaires was coded and analyzed using the Statistical Package for Social Sciences Version 16 (SPSS 16). Descriptive statistics were used to analyze quantitative data while regression and correlation analysis was used to analyze

associations between independent and dependent variables. Level of significance was fixed at $p=0.05$, with a 95% confidence interval. Findings were presented using frequency tables as percentages.

Ethical approval was obtained from the Ethical Review Committee at Pwani University. The nature and scope of the study was disclosed fully to respondents before they provided their informed consent verbally. Participation was on voluntary basis and the respondents were free to withdraw from the study at any time without giving notice and were not to be penalized. The respondents were assured of confidentiality and privacy during research. Permission to conduct this study was obtained from Kenya Ports Authority, Jomo Kenyatta University of Agriculture and Technology, and Kenya Maritime Authority.

3.0 RESULTS

3.1 Socio-demographic characteristics and Response rate of KPA-Mombasa employees

Out of 385 respondents who had been recruited into the study 295 respondents returned adequately completed the questionnaires. This represented 76.6 percent response rate. Male participants comprised of 60.3 percent (178/295) while female were 39.7 percent (117/295). Most (40%) of the respondents were aged between 40 - 49 years and 75.6 percent were married. Approximately thirty seven percent (36.9%) of respondents had secondary education and were affiliated to the Christian religion (75.9%: 224) as indicated in Table 1.

Table 1. Socio-demographic characteristics and Response rate of KPA-Mombasa employees

Age	Frequency (n)	Percentage (%)
20-29	25	8.5
30-39	91	30.9
40-49	118	40.0
49 & Above	61	20.7
Marital status		
Single	52	17.6
Married	223	75.6
Divorced	09	03.1
Widow/Widower	11	03.7
Education level		
Primary	21	07.1
Secondary	110	37.3
Middle level	107	36.3
University	57	19.3
Religion		
Muslim	57	19.3
Christian	224	75.9
Others	14	04.8

3.2 Reasons for not utilizing VCT services among the study respondents

The main reasons listed for not taking the HIV test included fear of positive results (19.2%), not seeing it necessary (23.1%) while 46.2 percent of the respondents did not respond to this question (Table 2).

Reason	Frequency (n)	Percentage (%)
Table 2: Reasons for not utilizing VCT services among study respondents		
No cure for HIV	02	7.7
Fear of positive results	05	19.2
It is not necessary	06	23.1
My partner was unwilling to accompany	01	3.8
No answer	12	46.2
Total	26	100

3.3 Proportion of employees utilizing VCT services and associated factors

Majority (91.2%) of the respondents had ever taken an HIV test with more than 70 percent taking it more than once. However, majority (61.8%) of the respondents took the HIV test outside KPA facility with over 70 percent having their HIV test results communicated back to them. Even though 82.2 percent of the respondents disclosed their HIV test results to their partners, only 37.9 percent accompanied their partners to VCT centre. More males (62.4 %) than females (37.6%) disclosed their status. More than sixty percent (62.8%) of the respondents reported change in their lives after taking HIV test. Majority of the respondents (75.3) reported having used condom but fewer female (33.1%) compared to men (66.9%) used condom despite of knowing the benefits. However, only slightly above half (54.3%) of the respondents conceded that they could be at risk of HIV infection (Table 3).

Table 3: Proportion of employees who utilize VCT services and associated factors

Variable (Factor)	Response	VCT Utilization (n)	Percentage (%) number of respondents	Odds ratio (95% CI)	p-Value
Proportion of respondents ever had an HIV test	1.YES	269	91.2	1.076	0.859
	2. NO	26	8.8	(0.476, 2.432)	
Frequency of VCT	1.Once	65	24.2	1.12	0.698
	2. More than once	204	75.8	(0.63,1.00)	
Place where test was done	1.VCT in KPA	72	26.8	0.742	0.283
	2.VCT outside KPA	160	61.8	(0.430, 1.280)	
	3.While admitted hospital	37	13.8		
Partner	1.YES	102	37.9	1.872	0.017
accompanied	2. NO	167	62.2	(1.116, 3.139)	
during test					
Change in life style after test	1.YES	169	62.8	1.433	0.159
	2. NO	100	37.2	(0.868, 2.367)	
Disclosure	1.YES	221	82.2	1.965	0.034
	2. NO	48	17.8	(1.047, 3.688)	
of results to partner					
Condom use	1.YES	222	75.25	1.975	0.039
	2. NO	73	24.75	(1.069, 3.762)	
Being at the	1.YES	146	54.3	0.940	(0.589, 0.794
				1.499)	
risk of HIV infection	2. NO	149	45.7		

3.4 Factors influencing utilization of Voluntary Counseling and Testing Services

Majority (84.8%) of the respondents knew someone who was living with HIV at the workplace and on ARVs. Majority (85.4%) of the respondents also acknowledged that ARVs restored the immunity and prolonged life (85.4%). More than seventy percent (72.5%) of respondents also indicated that they will be unhappy if their partner tested HIV positive. Majority (86.8%) would still take the HIV test even if they were faithful. Even though majority (87.8%) indicated that the VCT sessions were confidential and private (87.8%), and adequate information about HIV infection, transmission and prevention was provided during the session (85.1%), only a few (36.6%) were comfortable being tested by someone they knew. Majority (76.6%) of the respondents indicated that there was an HIV/AIDS program at the workplace (76.6%) and over sixty percent (61.4%) stating that no employee had been screened (45.4%) or denied recruitment or promotion due to HIV status (61.4%). The employer recognized the rights of HIV employees (75.9%) and majority (92.9%) of the respondents indicated that AIDS patients should not be isolated from the society (92.9%) (Table 4).

Table 4: Factors influencing utilization VCT services among KPA employees

Variable (Factor)	Response	VCT utilization (n)	Percentage (%) number of respondents
Knowledge of someone living with HIV at your work place	1.YES	250	84.8
	2. NO	45	15.3
Reaction if your partner tested HIV positive	1.Happy	09	03.1
	2.Unhappy	214	72.5
	3.Do not know	72	24.4
Employer recognition of the rights of the employees living with HIV	1.YES	224	
	2.NO	09	75.9
	3.Not sure	62	3.1
			21.0
Denial of recruitment or promotion because of HIV status	1.YES	11	03.7
	2.NO	181	61.4
	3.Do not know	103	34.9
Whether VCT is done in a private session where strict confidentiality is assured	1.YES	259	87.8
	2.NO	36	12.2
Whether adequate information about HIV infection, transmission and prevention provided during the session	1.YES	251	85.1
	2.NO	44	14.9
	1.YES	13	04.4
Whether AIDS patient should be isolated from the society	2.NO	274	92.9
	3.Do not know	08	2.7

4.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

4.1 Discussion

More male respondents participated in the study compared to females. This was expected because majority of the employees in KPA are males. The study indicated that majority of the employees were married, Christians and had secondary school level of education. Over ninety percent (91.2%) of the respondents who utilized the VCT services were mostly male. In most African countries men control resources which may be important in HIV prevention and care and they are the main decision makers, hence by men utilizing the VCT they may influence women directly or indirectly in utilizing the service (Demissie *et al.*, 2009). Majority of the respondents had middle level (post-secondary) education. Education level may also influence the utilization of VCT services. For instance, the study done in Mwanza Tanzania, indicated that utilization of VCT services increased with the level of education (Wringe *et al.*, 2008). Individuals with higher levels of education were more knowledgeable on VCT and HIV hence more confident to take the HIV test and also had adequate skills on prevention of HIV. Majority (of the respondents were either Christians (75.9%) or Muslims (19.3%), which could have influenced their utilization of VCT services. Religious beliefs significantly shape individuals' outlooks on living with HIV and have been cited by PLHIV as major strategies for coping with HIV/AIDS (Makoe *et al.*, 2008). Most (31.9%) of the respondents took the HIV test within a year while only a few (8.6%) could not remember when they took the test. More than sixty eight percent (68.8%) of the respondents re-tested for HIV, with an aim of knowing their status (61.7%). Other reasons given included poor health, blood donation, planning for future, unprotected sex with untrustworthy partners, influence from friends and influence from partners and media. According to CDC (2010), people should be tested at least once and those at high risk of infection, for instance those engaging in unprotected sex, having many partners, men having sex with men (MSM) and those injecting drugs and sharing needles should get tested for HIV more often. Testing for HIV at least once in a year could prevent 5% of

new infections, even if there will be no behavior change because of early initiation of ART, or up to 18% if risky behaviour is halved (Long *et al.*, 2014). In this study, majority of the respondents were motivated to take the HIV test so as to know their status. Another study conducted among 520 fishermen at Dunga, Usoma and Asat beaches in Kenya indicated that majority of the fishermen (58.8%) utilized VCT because they wanted to plan for the future (Okiriamu *et al.*, 2013). However, in a study conducted in Shenyang, China, 75.2% of the respondents indicated that recent knowledge on HIV motivated them to take the HIV test (Zhou *et al.*, 2009).

The main reasons for declining the HIV test were; the test being considered not necessary and fear of positive results which contributed to 84.9%. A routine opt-out HIV testing study was carried out in an urban community health centre in Bronx, New York. Out of 319 eligible patients, 105 (35%) took the HIV test. The commonest reason for declining the test was perceived low risk (54.4%) and self-reported HIV testing done previously (45.1%) (Cunningham *et al.*, 2009). In another study conducted at George Washington University hospital Emergency Department, patients who declined to take the HIV test were found to be almost three times more likely to be HIV positive than those who took the HIV test (ICAAC, 2009).

The study found out that the respondents (86.8%) would take the HIV test even when they were faithful to their partner but were uncomfortable being tested by someone they knew. They were however, in agreement that the VCT sessions were private (87.8%) and that adequate information was provided during testing (85.1%). More male respondents (63.7%) compared to female (36.3%) indicated that they would attend VCT outside KPA facility. This means that they were not free with the people offering services at KPA. According to Durojaiye *et al.*, (2013), fear of stigma from co-workers and employers, such as social isolation and ridicule, or experience discriminatory practices, such as denial of promotion would deter the employee from visiting the VCT at their workplace. However, majority (92.9%) of the respondents indicated that HIV patients should not be isolated and 76.6% agreed that there was an HIV/AIDS workplace

program and employer recognized the rights of the employees living with HIV/AIDS (75.9%).

Over 70% of the respondents had their results communicated back to them. According to the study conducted in Brussels, Belgium between 1996 and 1999, results were mostly conveyed by phone (41.9%) especially to the anxious clients. The study concluded by emphasizing that only in a face to face conversation can the service provider offer effective post counseling to the client (Devroeys *et al.*, 2001). This should be done in a way that would enable the client to understand the meaning of the result, respond appropriately and importantly, obtain relevant test confirmation, prevention, care, support and treatment services (NASCOP, 2012). This study found out that only 34.6% of the respondents were accompanied by their partners to VCT centre while 56.6% were not; and more females (54.2%) than males (45.8%) did not communicate their HIV test results to their partners. According to Kalichman *et al.*, (2003), fear of discrimination, abandonment, depression and loss of economic support and disruption of family relationship might make the females not to disclose their HIV status to their partner. Nevertheless, 74.9% of the respondents in this study communicated the results to their partner and 57.3% acknowledged that their life changed after the test. According to Kadowa *et al.*, (2009) disclosure of HIV status helps in increasing support for an HIV positive person, increases self-esteem, and lowers levels of depression and facilitated initiation and adherence to HIV treatment. It could also help in protecting the discordant couple, though sometimes it could lead to rejection, discrimination or violence (WHO, 2012). A 2014 study conducted in Harare, Zimbabwe on 1951 postnatal women who had tested HIV positive and negative and their experience after disclosure of their HIV status. Of these, 93% disclosed their HIV test results to their partners and 32.8 % reported intimate partner violence (Shamu *et al.*, 2014). Similarly, a 2014 study carried out in Mwanza Tanzania among 270 HIV positive adult patients attending the Care and Treatment clinic where the majority (72.5%) were female and married. Over sixty nine percent (69.3%) of those who disclosed reported some form of relationship to the person

they disclosed their HIV status, 79.4% reported being supported emotionally while 29.7% indicated having received financial support, 34% reported being discriminated, and 12% reported being divorced after disclosure (Yonah *et al.*, 2014).

Majority (68.1%) of the respondents indicated that the employees who tested HIV positive were commenced on ARVs while 24% did not know what happened to the employees who tested positive. Even though, 50.5% of the respondents did not consider themselves at risk of HIV infection, 78.3% indicated that having multiple partners would predispose them to HIV infection. More than ninety five percent knew the importance of condom in HIV prevention and 74.9% acknowledged having used condom. Condom use among male was higher (66.9%) than female (33.1%), 59.5% of female compared to 40.5% male have never used condom. This was largely because 75.6% of the respondents were married. According to Agha (1998), condom use was significantly associated with extra marital sexual activity and women were likely to be stigmatized and viewed negatively for suggesting condom use and in some instances led to instability or dissolution of relationships (Soskolne *et al.*, 1991). Married men on the other hand were much more likely than married women to engage in extramarital sex and among males such activity was often socially and culturally condoned (Smith, 2010). According to the study conducted by Walusaga *et al.*, (2012), men (48.1%) reported to have used condoms consistently during sex compared to female (31.8%).

The respondents knew someone living with HIV at work place (84.7%) and that they were on ARVs (85.4%) which improved the immunity (85.4%). When respondents were asked what their reaction would be if their workmate tested HIV positive, 51.9% said they would be unhappy and 40.3% and 7.8% indicated they would be shocked and happy respectively. When the partner was found to be HIV positive, many respondents indicated they would take care of the partner (28.1%), go for HIV testing (28.1%) and use condom respectively (26.1%). However, only 7.8% indicated they would stop having sex and only 3.1% indicated they would divorce their partner or avoid any contact (3.1%). In a study conducted among slum dwellers who had taken the HIV test

during antenatal care in Kampala Uganda, 47% of the 408 women who participated in the study indicated that they would be uncomfortable sharing a house with someone living with HIV, 56% would be uncomfortable eating food prepared by an HIV positive person, 87% indicated they would be uncomfortable having sexual contact while 83.8% reported that they disclosed their HIV status to their partners. Disclosure was notably higher in women whose partners had taken the HIV test (Batte *et al.*, 2015).

4.2 Conclusions

Majority of the respondents reported having had an HIV test but a few declined. Marital status, education level and religion were important in utilization of VCT services. Although majority of KPA staff had taken the HIV test more than once, most had lasted more than one year since the last test, some could not remember. Although a majority took the VCT test to know their status, many still held back without any apparent reason, felt it was not necessary, feared positive results or thought there is no cure for AIDS. Fewer females disclosed their HIV results compared to males. However, they received feedback promptly, and communicated the test results to their partner. However, majority did not accompany them. Disclosing the HIV status would increase support and empathy from the partner who tested HIV positive and protect the discordant partner however even though the VCT sessions were confidential and private employees preferred attending VCT outside KPA, and not attended by a person they knew. This was despite the fact that there was less stigma and discrimination at the workplace. Employees knew that they were at risk of HIV infection, understood that there is no cure and would be unhappy knowing their workmate or partner was HIV positive. Majority stated that the employer is concerned with HIV positive people and there was an HIV policy and people are immediately started on ARVs. Employees were aware of how HIV was transmitted, the efficacy of ARVs and acknowledged knowing someone who was on ARVs. Condom use among male respondents was higher than females despite knowing the benefits.

4.3 Recommendations

KPA employees should be encouraged to know their HIV status. Different strategies should be used to encourage employees to test for HIV, especially those who declined. These include HIV self- testing, offering HIV testing outside normal working hours and by people unknown to the employees and new methods of motivating people to utilize VCT services. Health and non-health care workers can be equipped with the relevant skills so that they encourage employees to take up VCT services anytime they come into contact with them. Since a majority of the respondents were found to prefer utilizing VCT facilities outside KPA, a program to help support those who attend VCT outside KPA should be implemented so that such facilities do not run short of VCT program requirements. Women should be empowered to negotiate for safer sex with partners by teaching them assertive skills and promoting the correct, consistent use of both male and female condoms and provide them with adequate comprehensive knowledge on HIV/AIDS, including comprehensive sexual education. Many respondents were over 40 years and married, this group felt that awareness programmes did not target them because they were in stable relationships. Awareness strategies should be tailored to fit the needs of this group and VCT providers who were more mature should be engaged in the VCT, moreover the employees should be involved in designing the VCT programme.

REFERENCES

- Agha, S. (1998). *Sexual Activity and Condom Use*. Lusaka: Zambia
- Ayenew, A., Leykun, A., Colebunders, R., & Deribew. A. (2010). *Predictors of HIV testing among patients with Tuberculosis in north-west Ethiopia: A case-control Study*. PLoS One 2010, 5(3):e9702.
- Batte,A., Katahoire,A. R., Chimoyi, A.,Ajambo,S., TibinganaB., & Banura, C. (2015). *Disclosure of HIV test results by women to their partners following antenatal HIV testing: a population-based cross-sectional survey among slum dwellers*. Kampala: Uganda.
- Centers for Disease Control and Prevention (CDC) (2010). *The role of STD detection and treatment in HIV prevention*—CDC fact sheet.
- Cochran, W.G. (1977). *Sampling Techniques*, 3rd edition. New York: John Wiley & Sons.
- Cunningham, C. O., Doran, B., DeLuca, J., Dyksterhouse, R., Asgary, R., & Sacajiu, G. (2009). Routine Opt-Out HIV Testing in an Urban Community Health Center. *AIDS Patient Care and STDs*, 23(8), 619–623.
- Day, J., Miyamura, K., Grant, A., Leeuw, A., Munsamy, J., Baggaley, R. & Churchyard, G.J. (2003). “Attitudes to HIV VCT among mineworkers in South Africa: will availability of antiretroviral therapy encourage testing?” *AIDS Care*, Vol. 15 No. 5, pp. 665-672.
- Demissie, A., Deribew, A., & Abera, M. (2009). *Determinants of acceptance of voluntary HIV testing among antenatal clinic attendees at DilChora Hospital*. Dire Dawa East: Ethiopia.
- Durojaiye, M., Turan, J., Kwena, Z., Oyaro, P., & Nyblade, L. (2013). *Measuring HIV-related Stigma and Discrimination among Health Workers*. Nyanza Province: Kenya.

- Fonner, V.A., Denison, J., Kennedy, C.E., O'Reilly, K., & Sweat, M. (2012). Voluntary counseling and testing (VCT) for changing HIV-related risk behavior in developing countries. *Cochrane Database of Systematic Reviews* 2012, Issue 9. Art. No.: CD001224. HIV/AIDS and port workers (2013). *A resource pack for unions*. Published: ISBN: 1-904676618.
- ICAAC. (2009). *People Who Decline Routine HIV Testing Are More Likely to Be Positive; Written Consent Requirement May Discourage Testing Details*. Washington DC: USA.
- ITF (2011). *HIV/AIDS, ports and port workers*. Geneva: Switzerland.
- Kadowa, I., & Nuwaha, F. (2009). *Factors influencing disclosure of HIV positive status in Mityana district of Uganda*. *Africa Health Science*. 9(1): 26–33. PMCID: PMC2932514.
- KAIS (2012). *Preliminary Report*. Nairobi: Kenya.
- Kalichman, S.C., & Simbayi, L. (2003). *HIV testing attitudes, AIDS stigma, and voluntary HIV counselling and testing in a black township*. Cape Town: South Africa.
- Makoe, L.N., Greeff, M., Phetlhu, R.D., Uys, L.R., Naidoo, J.R., Kohi, T.W., Dlamini, P.S., Chirwa, M.L., & Holzemer, W.L. (2008). *Coping with HIV-related stigma in five African countries*. *J Assoc Nurses in AIDS Care*. 2008;19:137–146. doi: 10.1016/j.jana.2007.11.004.
- NACC & NASCOP (2012). *Kenya AIDS Epidemic update 2011*. Nairobi: Kenya.
- NASCOP. (2011-2012). *Kenya, county HIV service delivery profiles*. Nairobi: Kenya.
- NASCOP (2012). *Achieving Universal Access to Knowledge of HIV Status*. The Kenya HTC Report 2011. Nairobi: Kenya.

- NASCOP (2010). National AIDS and STI Control Programme, Ministry of Public Health and Sanitation, Kenya. *Guidelines for HIV Testing and Counselling in Kenya*. Nairobi: Kenya.
- National Bureau of Statistics-Kenya (KNBS) and ICF International (2015). *2014 KDHS Key Findings*. Rockville, Maryland, USA: KNBS and ICF International.
- Ogoina, D., Ikuabe, P., Ebuonyi, I., Harry, T., Inatimi, O., & Chukwueke, O. (2015). *Types and predictors of partner reactions to HIV status disclosure among HIV-infected adult Nigerians in a tertiary hospital in the Niger Delta*. *Afr. Health Sci.*; 15(1): 10–18. doi: 10.4314/ahs.v15i1.2 PMID: PMC4370137.
- Oguntibeju, O.O. (2012). *Quality of life of people living with HIV and AIDS and antiretroviral therapy*. *HIV/AIDS (Auckland, NZ)*. 2012; 4:117-124. doi:10.2147/HIV.S32321.
- Okiriamu, F.C., Onyango, R., Odiwuor, W.H., & Simatwa, E.M.W. (2013). *Factors Influencing Utilization of Voluntary counselling and Testing Services among Fishermen at Dunga, Usoma and Asat Beaches*. Kisumu District: Kenya. Greener Journal of Medical Sciences.
- Shamu, S., Zarowsky, C., Shefer, T., Temmerman, M., & Abrahams, N. (2014). *Intimate partner violence after disclosure of HIV test results among pregnant women*. Harare: Zimbabwe.
- Smith, D.J. (2010). *Promiscuous Girls, Good Wives, and Cheating Husbands: Gender Inequality, Transitions to Marriage, and Infidelity in Southeastern Nigeria*. *Anthropological quarterly*. 2010; 83(1):10.1353/anq.0.0118. doi:10.1353/anq.0.0118.
- Soskolne, V. (1991). *Condom use with regular and casual partners among women attending family planning clinics*, *Family Planning Perspectives*, 1991, 23(5):222-225; Brookfield, VT, USA.

- UNAIDS (2015). *Report on the global AIDS epidemic 2012*. Geneva: Switzerland.
- UNAIDS (2014a). *Fast-Track: ending the AIDS epidemic by 2030*. Geneva: Switzerland.
- UNAIDS (2014b). *Report on the global AIDS epidemic 2014*. Geneva: Switzerland.
- UNAIDS (2013). *Report on the global AIDS epidemic 2013*. Geneva: Switzerland.
- UNAIDS (2012). *Report on the Global AIDS Epidemic 2010*. Geneva: Switzerland.
- UNIADS (2010). *Report on the Global AIDS Epidemic 2010*. Geneva: Switzerland.
- Walusaga, H. A., Kyohangirwe, R., & Wagner, G. J. (2012). *Gender Differences in Determinants of Condom Use among HIV Clients*. Kampala: Uganda.
- WHO (2014). *Getting to zero 2011–2015 strategy*. Joint United Nations programs on HIV/AIDS. Geneva: Switzerland.
- WHO (2012). *Service delivery approaches to HIV testing and counseling (HTC): A strategic HTC programme framework*. Geneva: Switzerland.
- WHO/UNAIDS. (2001). *Information note on Effectiveness of Condoms in Preventing Sexually Transmitted Infections including HIV*. Geneva: Switzerland.
- Wringe, A., Isingo, R., Urasa, M., Maiseli, G., Manyall, R., Chagalucha, J., Mngara, J., Kalluvya, S., & Zaba, B. (2008). *Uptake of HIV Voluntary and Counseling services in rural Tanzania: implications for effective HIV treatment and equitable access to treatment*. *Tropical Medicine and International Health*; 13(3):319-27.
- Yonah, G., Fredrick, F., & Leyna, G. (2014). *HIV serostatus disclosure among people living with HIV/AIDS*. Mwanza: Tanzania.
- Zhou, L., Guo, J., Fan, L., Tian, J., & Zhou, B. (2009). *Survey of motivation for use of voluntary counseling and testing services for HIV in a high risk area*. Shenyang: China