FACTORS INFLUENCING BEHAVIOR CHANGE AMONG THE HIV INFECTED PATIENTS: A CASE OF BUNGOMA COUNTY REFERRAL HOSPITAL, BUNGOMA COUNTY, KENYA.

BY

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS OF ARTS IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI

2016

DECLARATION

This project is my original work and has not been submitted for a degree award in any university.

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This project has been submitted for examination with my approval as a University supervisor.

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DEDICATION

This research project is dedicated to my husband Ignatius Wafula for his continued support, my father; William Wakora and my children Ruth, Clare, Gideon, Keith and Gift for their unwavering encouragements towards my further education.

ACKNOWLEDGEMENT

I am sincerely grateful to a number of people who were of great assistance to me throughout this research:

First of all, I am eternally grateful to my supervisor, Dr. Stephen Okello for his guidance which enabled me to come up with this project? His motivation and tolerance enabled me to get this far in my project and consequently, this project benefited from his insightful feedback.

Special appreciation to Mr. Vincent Marani and the entire staff of the University of Nairobi; Bungoma Sub Centre for enabling this academic endeavor to run smoothly.

A lot of thanks to the 2015-2016 MAPPM class at Bungoma Sub Centre for the academic and moral support we shared together, to me you were more than friends.

My appreciation goes to my colleagues; Veronica Wanyonyi, the Nursing officer in-charge of Bungoma County referral hospital and my immediate supervisor, Catherine Mulwale the Nursing officer in charge of Maternity ward for their moral support and understanding that they displayed during my study.

Further acknowledgement goes to my beloved husband, Ignatius Wafula for his tireless guidance due to his exposure in research and his financial assistance towards my studies.

In addition, to all my family members, close friends of Agape Sisters women group for stepping in financially in terms of fee and their moral support.

To my Creator for the good health and the peace He bestowed upon me during the whole period of undertaking my research proposal.

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ABBREVIATIONS AND ACRONYMS

HIV	**-**	Human Immunodeficiency Virus
AIDS	**-**	Acquired Immune Deficiency Syndrome
BCRH	**-**	Bungoma County Referral Hospital
MAPPM	**-**	Masters of Arts in Project Planning Management
ART	**-**	Antiretroviral therapy
ARV	**-**	Antiretroviral drugs
CCC	**-**	Comprehensive care Centre
WHO	**-**	World Health Organizations
UNAIDS	**-**	Joint United Nations programme on HIV/AIDS
UN	**-**	United Nations
KEPI	**-**	Kenya Expanded Programme of Immunization
MDG	**-**	Millennium Development Goals
PLWHAS	**-**	People Living with Human immunodeficiency
PWP	**-**	Prevention with positives
VCT	**-**	Voluntary Counseling Testing
SOP	**-**	Standard Operating Procedures
TB	**-**	Tuberculosis
STI	**-**	Sexually Transmitted Infection
PMTCT	**-**	Prevention of mother to child infection
CSW	**-**	Commercial sex worker
EID	**-**	Early Infant Diagnosis
IEC	**-**	Information Education Communication
NACC	**-**	National AIDS Control Council
NASCOP	**-**	National AIDS and STI Control Programme
NGO	**-**	Non Governmental Organization
OI	**-**	Opportunistic infections
OVC	**-**	Orphans and vulnerable children
CBO	**-**	Community Based Organization

CHEW	**-**	Community Health Extension Worker
CITC	**-**	Client Initiated Testing Counseling
MCH	**-**	Maternal Child Health
HTC	**-**	HIV Testing and Counseling
CHW	**-**	Community Health Worker
IMPACT	**-**	Implementing HIV/AIDS care project
USAID	**-**	United States Agency for International Development
DOT	**-**	Direct Observed Treatment
PEP	**-**	Post Exposure Prophylaxis
PrEP	**-**	Post Exposure Prophylaxis
HCT	**-**	HIV Counseling Testing
CUP	**-**	Condom Use 100 Percent
ABC	**-**	Abstain Be faithful Condom use
BCRH	**-**	Bungoma County Referral Hospital

ABSTRACT

This study was to investigate the factors influencing behavior change in the HIV infected patients in Bungoma County; a case of Bungoma County Referral Hospital. The study was guided by the following objectives: to assess how the biomedical strategies influence behavior change in HIV infected patients, to establish how the behavioral strategies influence behavior change in HIV infected patients, to investigate the socio-demographic factors influencing behavior change in HIV infected patients, and to determine the structural factors that influence behavior change in HIV infected patients. The study adopted descriptive survey design which was used to obtain information describing the existing phenomenon. The target population was 3,350 and the estimated sample size was 346. Stratified random sampling was used in the study with departments forming relevant stratus. Content validity was used where the researcher shared the research instrument with his supervisor. Split-half method was employed to test the reliability of the instrument. A structured questionnaire was prepared and distributed to the respondents in all the selected departments. 285 questionnaires were completely filled and were used for analysis. Data collected was checked for completeness and analyzed using descriptive statistics. Results for quantitative data were presented in tables and figures while qualitative data was presented in prose. The study found that the biomedical strategies, the behavioral strategies, the structural and the socio-demographical factors could either enhance or inhibit behavior change in HIV infected patients. The biomedical strategies that influenced behavior change were found to be the use of ARVs, use of condoms and treatment of STIs. Those patients who used the ARVs were healthy looking and their immunity was revitalized as the amount of viruses was halted, thus increasing the number of potential sexual partners who are likely to engage in risk sexual behaviors thus putting their sexual partners at risk of being infected. The behavioral strategies such as H.T.C, behavior change communication and education facilitated the uptake of the biomedical strategies as they sensitized the patients on the availability of those services, hence change of their health seeking behavior. The socio-demographic factors such as age, gender and educational standards had a great impact on an individual's ability to make informed decisions pertaining their sexual lives and the structural factors such as the policies, HIV behavior change programs and laws facilitated utilization of interventions that promoted HIV behavior change.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Since the beginning of the problem, almost 78 million people have been infected with the Human Immune deficiency Virus (HIV) and about 39 million people have died of the same. (UNAIDS, 2014). Globally,36.9 Million people were living with HIV by the end of 2014,(UNAIDS 2014).The estimates indicate that, the global HIV/AIDS Prevalence rate(percentage of people living with the HIV) has leveled off although the number of people living with the disease continues to increase (UNAIDS, 2008).An estimated 2.7 million people became newly infected with HIV in 2007 and 2 million people died of AIDS related cases (UNAIDS, 2008).An estimated 0.8% of adults aged 15-49 years worldwide are Living with HIV/AIDS while young people under the age of 25 years are estimated to account for more than half of all new HIV infections worldwide (UNAIDS, 2008) The burden of the epidemic continues to vary considerably between countries and regions.

In Latin America, the number of new HIV infections dropped by 17% in 2014 compared to the year 2,000 and the number of new infections remained fairly stable since then .That is in 2000, the number of new infections was 120,000 and by 2014 it had dropped to 88,000(UNAIDS, 2015) while the AIDS related deaths decreased by 31% .About 60,000 died by the year 2,000 and by 2014, the number had reduced to 41,000 thus AIDS related deaths fell by 12%.

In Western and Central Europe, North America, Eastern Europe and Central Asia, new infections rose by 30% between 2000 and 2014 thus there were 100,000 new infections by the year 2000 and by 2014 it had risen to 140,000newly infected (UNAIDS,2015). In Asia and the Pacifica between the year 2,000 and 2014,a down ward trend started in 2005 which however totaled to a 30% drop thus in the year 2000 there were approximately 240,000(140000-510000) in 2014 there was 20,000(11,000-45,000)(AIDS byNumbers,2014)

Sub Saharan Africa has been known to be a home of two thirds (68%) of people living with HIV/ AIDS or 22.5 million infected people (UNAIDS, 2008).Almost all nations in the

region have the National HIV prevalence being greater than 1%.In several countries more than 10% of the adults are already estimated to be HIV positive (UNAIDS, 2008).An estimated 1.4 million new infections in 2014 showed a drop by 41% compared to the year 2000.Thus sub Saharan remains most severely affected with nearly 1 in every 20 adults living with HIV and accounting for nearly 72% of the people living with HIV/ AIDS. South Africa still has the highest numbers of the people living with HIV/AIDS (PLWHAS).By 2014,thePLWAHSwere 6,800,000 and among them adults aged 15-49 had a prevalence rate of 18.9% while children aged 0 to 14 PLWHAS were 340,000.The deaths due to AIDS related diseases were 140,000 (AIDS by number 2015).

Compared to Nigeria, about 3,400,000 people are living with HIV and adults of 15-49 form a prevalence rate of 3.2 % while children aged 14 are 380,000PLWHAS .The deaths due to AIDS were 170,000 by 2014.(UNAIDS,2014). In East Africa, the country that is hard hit by the epidemic is Uganda with 1,500,000 people living with HIV/AIDS and 7.3% prevalence rate of adults aged 15 to 49, while 150000 children aged 0-14 are living with HIV. The deaths due to AIDS related diseases were 33,000by 2014(UNAIDS, 2015)

In Kenya, the HIV prevalence rate increased to 7.8% in 2007 from the prevalence of 6.7% recorded in the year 2006 (NASCOP 2008).The increase in the percentage of the population of PLWHAS is largely attributed to the wider access to Antiretroviral drugs .According to Kenya AIDS indicator survey, about 1.4 million Kenyan adults are Living with HIV AIDS(NASCOP, 2008).In addition, 4 out of every five HIV positive Kenyans are unaware of the status and about two thirds of the country's 37 million people have never been tested for the virus (NASCOP 2008).Currently, the number of people Living with HIV/ AIDS has dropped tremendously. Approximately 53,000 people are Living With HIV /AIDS in which 0.2% is the prevalence rate for adults aged 15-49 years while children aged 0-14 had a prevalence of 4,300.The deaths due to AIDS associated illnesses are approximately 2,900(2,200-4200(UNAIDS 2014)

UNAIDS (2007) reports indicate that Kenya is one of the countries in Africa where there has been a favorable trend in HIV incidence (The number of new infections). This is related to changes in behavior and prevention interventions that has been put in place .Though these

interventions are not reaching those in need adequately especially the targeted groups such as the adolescents (NASCOP, 2005)

Young people are highly at risk and the key to the future course of HIV pandemics .Data from Kenya and the state countries show that young people are vulnerable for HIV infections and yet they have the best chance of reversing the trends in behavior that poses them to risk of being infected (UNAIDS, 2006).They need to make responsible decisions about sexual behavior and protect themselves from unwanted pregnancies, and other sexually transmitted infections. It is due to such backgrounds that this study was conducted to establish factors influencing behavior change among the HIV /AIDS infected persons in Bungoma county referral Hospital.

In this case, behavior change includes measures taken by an individual persons to protect themselves from HIV infections such as abstinence from sex, delaying sex debut, use of condoms, early initiation and retention of ART, early testing and optimal adherence of 95% or above (Basset et .al2010; Rosen et al 2007).There are several factors that influence behavioral change in HIV infected patients. In this study we looked at how behavioral strategies, biomedical strategies, Structural or Environmental factors and Socio demographic factors influence behavior change in HIV infected patients in Bungoma county Referral Hospital. Behavioral strategies are defined as barriers to facilitators of an individual HIV prevention behavior (AIDS, 2000) they indirectly or directly affect an individual's ability to avoid exposure to HIV. Behavioral interventions include; education, counseling and testing small group counseling skills development and information provision (UNAIDS, 2008). This type of intervention needs to target multiple levels including individuals and the environment that influence the behavior. The individual focus strategies should be emphasized and researchers should also examine family focused strategies.

Behavioral approaches can only be effective in reducing HIV infection transmission when the aggregate effect of radical and sustained behavioral change is achieved in a sufficient number of individuals potentially at risk (Thomas et al, 2008), thus radical behavior changes both between individuals and across large groups of people at risk are needed to reduce incidence and once achieved its essential that such changes are sustained(Noar, 2008).NASCOP,(2009) reported that the reduction of HIV transmission needs widespread and sustained efforts and a mix of communication channels to disseminate messages to motivate

people to engage in a range of options to reduce risk.HIV behavior change is affected by the environment as well as by the characteristics of individuals at risk.HIV related structural factors relate to economic ,social, policy organizational and other aspects of the environment (AIDS, 2000).The international research demonstrates the potential of structural intervention for reducing HIV risk (AIDS, 2000) as they seek to change the context that contribute to vulnerability and risk of HIV while biomedical interventions block infections or decrease infectiousness ,behavioral strategies attempt to motivate behavior change within the individual's and social units by use of a range of educational peer group skills building approaches and normative approaches(Parker et al.2000).

Behavioral change has been responsible for the prevention success to date (Coates, 2009). Eighty percent (80%) increase in condom use among commercial sex workers followed a policy requiring the use of condoms in brothel Thailand (AIDS, 2000). A 45% difference in HIV prevalence among intravenous drug users in two cities in Scotland attributed to different enforcement of paraphernalia laws. A 10% increase in requests for HIV tests by pregnant women followed the provision of testing in south eastern France, increase in reports of condom use between steady partners by up to 24% and between casual partners by up to 48% followed the implementation of a comprehensive national prevention policy in Switzerland.

1.2 Statement of the Problem

No one ever thought 25 years ago that HIV would be as difficult as it has proven to be despite the efforts. UNAIDS,(2014) now estimates that, 39.6 million people are Living with HIV and about 2.5 million new infections arise every year. Coates,(2008)revealed that the annual incidence of new HIV infections has not declined in the past recent years as evidenced above despite advances in treatment of HIV infected patients.CDC, (2003) suggests that although most HIV-infected individuals reduce risk behavior when they become aware of their HIV infection, some do not, and those who do may have difficulty sustaining behavioral change. WHO,(2008) adds that the increase in sexually transmitted diseases (STDs) among HIV-infected individuals points out that many HIV-infected individuals continue to engage in high-risk sexual behavior? High-risk behavior in PLWHAS not only contributes to the transmission of HIV to persons not previously infected, but may also result in transmission of sexually transmitted diseases (STDs), unplanned pregnancy, and transmission of new and possibly resistant strains of HIV to those who are already infected. To reverse this trend then a combination of strategies is essential in order to enable both prevention of HIV transmission and the control of the same.

Despite increasing recent emphasis on the social and structural determinants of HIV related behaviors and the focusing of most of the strategies on reversing the global HIV epidemic (NASCOP, 2008) still interventions lay behind and the pandemic has proved to be very difficult to control. This can be attributed to the fact that a significant proportion of PLWHAS remain sexually active and that the knowledge of the HIV status does not always translate into behavior change in support of HIV transmission (NASCOP, 2011).Thus, factors that influence behavior change for HIV/AIDS are not well understood simply because of the complexity of socio-cultural approaches (AIDS, 2000).

This could be a very serious health problem if left uncontrolled and therefore the study results could encourage those at risk to initiate behavior change and sustain healthy sexual behavior to reduce the impact of HIV infection. Thus the need to determine factors influencing behavior change for HIV /AIDS infected persons in Bungoma County Referral Hospital (BCRH).

1.3 Purpose of the study

The purpose of this study was to investigate the factors influencing behavior change among the HIV/AIDS infected persons in Bungoma County Referral Hospital (BCRH).

1.4 Objectives of the study

The study was guided by the following specific objectives:

1. To assess how the biomedical interventions influences behavior change in HIV infected persons in Bungoma County Referral Hospital
2. To establish how behavioral strategies influences behavior change in HIV infected patients in Bungoma County Referral Hospital
3. To investigate how structural interventions influence behavior change in HIV infected persons in Bungoma County Referral Hospital.
4. To establish how socio demographic influences behavior change in HIV infected persons in Bungoma County Referral Hospital.

1.5 Research questions

1. To what extend do biomedical interventions influence behavior change in HIV infected patients in Bungoma County Referral Hospital?
2. How do socio demographic factors influence behavior change in HIV infected patients in Bungoma County Referral Hospital?
3. To what extend does behavioral strategies influence behavior change in HIV infected patients in Bungoma County Referral Hospital?
4. How do individual characteristics influence behavior change in HIV infected patients in Bungoma County Referral Hospital?
5. To what extend do structural interventions influence behavior change in HIV infected patients in Bungoma County Referral Hospital?

1.6 Significance of the study

The study portrayed factors influencing behavior change among the HIV infected patients in Bungoma County Referral Hospital .This research sort to contribute to the research effort by evaluating the influence of the HIV prevention strategies on the behavior change that facilitated the reduction of HIV transmission and thus reducing the HIV prevalence.

The research results would add knowledge critical for academia, form a basis for top management decision making process at Bungoma County Referral Hospital and be of use in policy formulation in the management of the HIV infected patient.

1.7 Delimitation of the study

The study covered the HIV infected patients attending their clinic in Bungoma County Referral Hospital (BCRH) in Bungoma County Kenya. All the adults and the adolescents both females and males were covered in this study. The study sort to investigate the factors influencing behavior change in HIV infected persons in BCRH. This refers to the total number of HIV infected persons enrolled on care at the comprehensive care Centre (CCC) of the BCRH.

1.8 Limitations of the study

Some respondents were not willing to participate for fear of stigmatization but this was curbed by the researcher spelling out the oath of secrecy to the respondents. Some information might be too sensitive to be shared to the opposite gender but this was overcome by using anonymous questionnaire.

1.9 Assumptions

The researcher assumes that:

- The sample population of HIV infected persons in BCRH were a reflection of all HIV patients of Bungoma south sub county.
- The answers that were given by the respondents were a reflection of a true picture of the factors influencing behavior change in HIV infected persons in BCRH.
- The participants of the study were knowledgeable and willing to give information required for the study.

- It was also assumed that the data got from the comprehensive care clinic in BCRH was reliable and accurate information.

1.10. Definition of significant terms used in the study

Behavior change- This refers to abstinence from sex, condom use, being faithful to your part

Safer sex- This includes every behavior that has the intention of preventing the transmission of HIV, such as condom use, abstinence and Strategies to modify others

Behavioral Strategies- These are strategies that attempt to delay onset of first intercourse, decrease the number of sexual partners and increase the number of sex acts that are protected and such strategies include; Counseling and Testing, Education and Behavior change communication

Biomedical strategy- These are strategies such as use of ARVs, condoms and treatment of sexually transmitted diseases

Structural intervention- This include factors like, policy support, HIV programs and Resource economic factors

Socio-Demographic- These are factors like age, gender and occupation

1.11 Organization of the study

This chapter covered the background of the study, statement of the problem, significance of the study, delimitations and the limitations, operational definitions of terms and the organization of the study. Chapter two looked at the literature review which included both theoretical and empirical literature. Chapter three looked at the research methodology which included research design, study area, study population, sample size and sampling procedure, development of research instruments, pilot study, validity and reliability, data collection procedures and data analysis procedures

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter is divided into two main sub-sections; these are theoretical literature and empirical literature. The theoretical literature review shades some light on one key theory that can be used in the care of the HIV infected persons. While the empirical literature addresses factors influencing behavior change in HIV infected persons in Bungoma County Referral Hospital.

2.2 Theoretical Framework: Functionalism Theory

This study was based on the theoretical framework of Functionalism theory and Talcott Parson was the one who spearheaded this theory (Adams and Sydie, 2001). For Parsons, there were many systems or action systems where "the parts were connected" (Adams and Sydie, 2001).A system is something that has a boundary, so that there is an inside and an outside to the environment comprising the system (Wallace and Wolf, 2002). These systems have interdependent parts, order or equilibrium, and it attempts to explain the relationship of different parts of the system to each other, and to the whole (Parsons, 1967). Adams and Sydie (2001) noted that this theory was applied in a physical analogy to a heating or cooling system for a building. The building had boundaries, an outside and an inside, and the boundaries were generally fixed or maintained over a time. There were interdependent parts to the system which function together to maintain a certain level of temperature in the building. Thermostats and furnaces or air conditioners are used to heat or cool the building, and these are self-regulating, maintaining a certain equilibrium temperature. (Parsons, 2001).

Functionalism theory was the basis for this project. Socialists' using this approach starts with assumptions that society and institutions within society such as Health are some of the systems made up of highly interrelated interdependent parts that work together harmoniously each contributing some necessary activity to the functioning of the whole society (van Pierre 1967). A dysfunction in any one part of the system affects its overall functioning just like in the HIV care of the infected persons (Knapp, 1994). The care given should be holistic meaning that

it should target the individual and the environment in which the individual lives in. The strategies used in care should be able to address every sector of the patient's life and all interventions should work in harmony in order to maximize on achievements and that is adopting good behavior change to help reduce the prevalence of HIV infection.

2.3 Biomedical strategies and behavior change

UNAIDS, (2010) States that, biomedical strategies are the interventions that block infection or decrease infectiousness. These interventions reduce transmission efficiency .Factors associated with increased risk of transmission during unprotected sex include stage of HIV disease, viral load, presence of STI and genital ulcer diseases, male circumcision, ART or other co factors, (Castila et al 2005).Biomedical interventions aim to reduce the risk of HIV transmission by reducing the degree when an exposure happens or by reducing the risk associated with an exposure. Examples include the use of condoms ,vaccines ,microbicites , penis circumcision, treatment of sexually transmitted diseases(STI) and the use of ant-HIV drugs by HIV negative people(post exposure prophylaxis) (PEP) and by HIV positive people (effective treatment to prevent transmission) (NASCOP,2011)

However there is some concern that, with the adoption of new biomedical interventions, people may increase their risk behavior and therefore subsequently risk of HIV transmission (NASCOP, 2011). Unlike condoms and clean needles, some biomedical interventions are only effective against HIV and do not protect against other STI or blood-borne infections (UNAIDS, 2008). Unfortunately, the presence of these other infections can then increase the risk of HIV transmission (NASCOP, 2010). Kenya Demographic health Survey KDHS (2008) gave estimation of substantial increase in risk taking in response to treatment access and it revealed that, there was an increase in risk taking especially in young women as they increased in pregnancy of 82% and there was an increase in self-reported sexual behavior of 40%.This showed that access to treatment had an impact to the course of HIV epidemic.Godlonton.et.al (2011) argued that incorporating the behavioral response into a simulated model of the impact of different levels of ARV provision demonstrates that treatment provision can reduce new infection rates. Even with substantial increase in risk taking; while Dannel Koltey(2012) saw these results as diverging from previous studies in sub-Saharan Africa that do not find significant

changes in risk taking in response to information about HIV risk, they match evidence of behavioral responses to ARV provision among gay men in the United States (Mechoulan,2007) (papageorge,2012).

Although biomedical strategies may be able to reduce an individual's risk of HIV transmission when used consistently and correctly, this does not necessarily mean the intervention will have an impact on HIV epidemic (UNAIDS,2008).The popularity impact of biomedical interventions will depend on how many people use them, who uses them and how well they are used. Maximizing the impact of biomedical strategies requires that they be rolled out in combination with additional interventions to improve awareness and support access and consistence/correct use. Given that no strategy alone will be able to end the epidemic, all available biomedical interventions should be considered as part of a comprehensive approach to HIV prevention (UNAIDS, 2007).

Giami A,(1996) revealed that, many HIV-infected individuals practice a blend of lower risk and high-risk sexual and injection behaviors. For example, they use condoms to reduce their risk of HIV transmission to their primary HIV-negative sexual partners, but they still practice unprotected sexual intercourse with multiple sexual partners, potentially transmitting HIV to those partners, as well as placing themselves and their partners at risk for acquiring sexually transmitted diseases. The assumptions about the sero-status of their multiple sexual partners, their use of sildenafil, and their use of methamphetamine all increase the risk associated with their sexual activity.

UNAIDS,(2009) envisioned that providing ART would change the impact and course of the epidemic in Kenya. The therapy was expected to reduce mortality and morbidity resulting from HIV/AIDS, maintain a healthy and productive community with reduced stigma towards people living with AIDS, reduce the escalating burden of AIDS orphans and improve quality of life of the infected. NASCOP, (2011) maintains that, ARVs do not cure but only suppresses viral replication, thus preventing further disease progression and immune system damage. However there is some concern that with the adoption of new biomedical interventions, people may increase their risk behavior and therefore subsequently risk of HIV transmission (NASCOP, 2011). A significant proportion of people living with HIV/AIDS remain sexually active (NASCOP, 2011) especially those who have responded well to ARVs. Their viral loads always

remains as low as being undetectable and such clients are less likely to transmit HIV virus. Hence with such knowledge many HIV infected patients indulge in risk behaviors knowing that they are no longer infectious to others yet ARVs do not cure (NASCOP, 2011). ART significantly reduces morbidity and mortality and makes people feel healthier which may lead to increased sexual activity and a reduction in preventive behaviors which is referred to as treatment optimism, (Esther, 2000).

Chen SY et al, (2002) and Stolte.et.al (2001), suggested in the study carried out in Europe and North America among men who have sex with men that an increase in STIs and HIV was observed since ART became more widely available. Increased risk of acquiring STIs, an epidemiological marker of unprotected sex has also been reported among heterosexual HIV-infected persons receiving ART.

NASCOP, (2011) stipulated that People on ART may have increased contact with health care providers which may in turn encourage continuation of safer sex practices due to the constant advices and adherence counseling that goes on during their therapy. Gray et al (2003) a stochastic simulation based on Ugandan data predicted declines in HIV incidence with the initiation of ART, however despite the decrease in incidence, the epidemic would continue to grow at a substantial rate, suggesting that ART alone cannot control the HIV epidemic. On contrarily, cheer S et al(2001),carried out a systematic review which found out that while people's beliefs about lower infectivity with ART and undetectable viral loads promotes unprotected sex, the HIV infected patients did not exhibit increased sexual risk behavior, even when therapy achieved undetectable viral loads. UNAIDS,(2006) reveals that, acknowledging the fact that ARVs prolong life by does not imply that diagnoses and treatment will be sought. Disseminated information may be received half-heartedly and not acted on.

NASCOP, (2011) also shows accumulating evidence that treatment of the HIV- positive partners in a sero-discordant relationship markedly reduces the risk of HIV transmission to the HIV-negative partner. NASCOP reports that promoting STI treatment and counseling to reduce risky sexual behavior and promoting proper use of condoms have contributed to the reduction in HIV incidence.

WHO,(2006) suggests that an opportunistic infection (OI)is a disease caused by a micro-organism that does not normally cause illness in a person with a health immune system, but that

may cause serious disease when the immunity is weakened and as immune system of PLHWAS weakens, they become susceptible to a number of opportunistic infections at different stages of HIV.NASCOP,(2011) stipulates that the virus progressively destroys the body's immune functions leading to opportunistic infections and they are these infections that give the manifestation of the disease (WHO, 2009).AIDS(Acquired Immune deficiency syndrome) is the end stage of the spectrum of the disease and is characterized by life threatening opportunistic infection. Sexually transmitted infections (STIs) have spread very fast among sexually active groups. STIs and HIV are both spread through the same type of risky behavior such as having multiple partners and frequent partner change. Common STIs, especially those that cause genital ulcers, facilitate rapid entry of HIV into the body. This information is of public health importance and must be a concern of every Kenya policy-maker and program designed to ensure measures are taken to control both HIV/AIDS and STIs. People with an STI are more likely to be HIV infected, and should be offered HIV testing and counseling. Sentinel surveillance in STI patients began in 1990. In 2003, HIV prevalence was 23% in women with an STI syndrome and 37% in women with genital ulcer disease; prevalence was 22% in men with genital ulcers.

In the 2003 KDHS, out of 108 women who had an STI, 19.0% tested HIV positive whereas out of 2529 who had no STI only 9.7% tested positive. Among 78 men who reported an STI in the last year, 14.8% tested HIV positive while among 1046 men who had no STI, only 4.9% tested HIV positive. Treating STIs can reduce the spread of HIV by reducing the amount of virus shed in the genital tract of those infected and reducing susceptibility to HIV infection among those not infected.

The 2003 KDHS also indicates that both women and men are seeking treatment when they have an STI—2% of the men and women who had had sex in the 12 months before the study said they had an STI. Among them 90% of the men and 68% of the women sought treatment or advice of their problem. More men (71%) than women (59%) sought treatment from a health facility.

MOH,(2005)reveals that the spread of HIV and other sexually transmitted diseases has brought about an increase in awareness and use of condoms. Condom use is an important tool in the fight to curtail the spread of HIV. Although truly effective protection would require condom

use at every sexual encounter, the most important sexual encounters to cover are those considered to be higher risk(NASCOP,2011)Since HIV in Africa is spread primarily through unprotected sex, safe sex practices such as condom use can reduce HIV spread significantly. Though sexual behavior involves complex dynamics, condom use is not an easy option in Africa despite years of condom distribution intervention (Ezehetal.1996). One of the quantitative interviews conducted in Lome and Togo revealed that, although PLWHAS might be aware of the risk of infecting their sexual partners but still they engaged in high risk behaviors especially with their multiple sexual partners putting them at risk of contracting the infection (Gregson et al, 2001).Consequently, condom access is inadequate to change risky sexual behavior that spreads HIV.

In a study conducted amongst PLWHAs on ART in India, the findings established that, overall condom use with a regular partner was high. Although 96 percent of respondents with an HIV negative regular partner reported using a condom at last sexual contact, condom use with a partner of unknown status was lower (87 percent).The percentage of participants who reported consistent condom use with regular partner was less than the percentage who reported condom use at last sexual contact's fifth did not use condoms consistently, (Avina, etal..200) in a study done. The spread of HIV disease has brought about an increase in awareness and use of condoms. Condoms use is the most important tool being used to halt the spread of HIV/AIDs at every sexual encounter, especially those considered to be at higher risk, (Macphail, 2001)

Godlonton.et.al (2011) argued that incorporating the behavioral response into a simulated model of the impact of different levels of ARV provision demonstrates that treatment provision can reduce new infection rates.

2.4 Behavioral strategies and behavior change

These are interventions that attempt to; delay onset of first intercourse, decrease the number of sexual partners, increase sexual acts that are protected, decrease the sharing of syringes and needles and decrease in substances use by providing counseling and testing for HIV(Koblin.etal,2004).The goals of behavioral strategies involve knowledge, stigma reduction, access to services, delay of onset of first intercourse, decrease in number of sexual partners, increase in condom sales and use, decrease in sharing of contaminated injection equipment and

decrease in number of sexual partners [Lancet, 2003].This are strategies that attempt to be implored to achieve the above goals and these include; education, counseling and testing small group counseling skills development ,information provision and prevention ,motivation by peers

NASCOP,(2011) explains that sexual behaviors that cause most HIV infections worldwide occur for many motivations such as for reproduction, for mere desire, peer pressure, pleasure, physical or psychological dependence, self–esteem, love, access to material goods, obligation coercion, and force, habit gender roles, customs and culture. The reasons are diversified and hence the strategies need to be sophisticated and be combined with other advances into biomedical field, scaled up in order to combat the epidemic [Vogel UF 2007]. These sexual behaviors do not occur in public and their expressions are infinitely greater than is acknowledged by most society's defined legal and moral system, making it too difficult to motivate protection when potential transmissions occur [UNAIDs,2007].Education, counseling and support are needed to help people make informed choices about prevention strategies that are appropriate with them.

NASCOP, (2010) defines counseling as the confidential interaction between a counselor who in this case should be a trained health service provider (HTC) and a client for the purpose of making the client or patient have a better understanding of their condition and the best way to manage it. In this interaction there is provision of adequate information in a conducive environment that facilitates interaction. NASCOP, (2011)states that a personalized risk reduction assessment ,which consists of a discussion between the HTC service provider and the client about their partner's HIV status and specific behaviors that may put a client at risk of transmitting or acquiring HIV, is a critical component of all HTC sessions .In this way the detailed risk assessment may be tailored to meet the specific needs of the client and thus enables a person to make informed choices at the same time enables them to take responsibility for their behavior outcome.

HIV testing and knowing one's HIV status is the most important entry point into this continuum of care. Counseling is the provision of information to assist or guide in resolving personal, social, or psychological problems and difficulties (UNAIDS,2008) NASCOP,(2010) states that counseling is an entry point to HIV prevention, care, support and treatment services.

NASCOP,(2011)suggested that all PLWHAS should be provided with counseling and psychosocial support interventions including individual and group counseling, peer support groups, family and couple counseling and adherence support as counseling provides psychosocial support to HIV patients in order to mitigate fear, anger, self- stigma and discrimination which in turn encourages disclosure and partner notification hence health behavior(UNAIDS,2008).Behavior change in support of health living, skill building on how to live a healthy and reproductive life and prevention of further transmission can be attained when one goes for HIV counseling. PLWHAS who choose to be sexually active should be counseled on safer sex practices to prevent HIV transmission to their sexual partners and avoid acquisition of STIs and HIV re-infection; and should be provided with condoms and appropriate contraceptives services and counseling(NASCOP,2011).

Coates (2008) suggests that HIV counseling and testing is a strategy for that can be used for couples as it attempts to motivate behavioral change within a primary or secondary relationship. This strategy recognizes that HIV transmission is a social event that occurs between two people, both of whom need to participate in the change.HIV testing and counseling for couples represents one very effective approach .More than 65% of new HIV infections are in sub-Saharan Africa, where most transmissions occur between heterosexual cohabiting partners. Dunkel KL et al (2008)had some estimates which suggested that 60-95% of new HIV infections in Rwanda and Zambia occur between married couples living together as cohabiting couples which in Africa represents the world's largest HIV risk group and it is only through Voluntary Counseling and Testing (VCT) for couples which can give benefits of reducing HIV transmission, STIs, and unintended pregnancies between couples.

Lancet, (2000), gives a summary of the benefits of HIV counseling and testing for couples is the efficacy in reducing risk behavior and HIV transmission within married or cohabiting couples. They further suggested that VCT, for couples can allow them to provide mutual support for accessing treatment and for reproductive decision making. UNAIDS,(2009)shows that the continuing high demand for VCT, the growing number of AIDS treatment programs, and increasing percentage of those living with HIV infection who are learning of their infection is as a result of counseling which offers support for the victims or the

exposed into making such an informed decision. UNAIDS,(2008) shows that intensive programs for 'prevention with positives' have not been implemented, however, and disclosing one's HIV status to sexual partners remains difficult and inconsistent. Expanding the access to antiretroviral drugs needs to be accompanied by services that help patients on these drugs to inform and protect their partners. Coping with AIDS calls for a deep-seated consistent, committed change of attitudes and behavior that is tantamount to a change of lifestyle. Grinestead OA, et al (2001).Therefore the nature of behavior change involved in dealing with AIDs differs sharply from that associated with other disease like TB which calls for a specific action of limited duration because once the bacillus has been plunged from the body the need for behavior change ends.

The success of the ART programs is largely dependent on the patient population achieving high levels of adherence to therapy not less than 95%. Hence adherence counseling is an important element in providing the therapy. With this level of adherence, experts believe that the selected NASCOP, (2011) also suggests that People with an STI are more likely to be HIV infected, and should be offered HIV testing and counseling. In one of a behavioral intervention research carried out in the US on men who have sex with men where individualized counseling was implored (Chesney, et al 2003), it was found out that there was reduction of incident STI infections as the counseling attempted to increase knowledge ,perceived risk of acquiring HIV, motivation, and skills to change counselors and clients assessed circumstances and occasions in which an individual might engage in risky behavior and then established risk reduction plans to assist the individual in avoiding HIV acquisition(Kamb et al 1998)

John, P. (2012) Defined education as a systematic process through which a person imparts or acquires knowledge, develops the power of reasoning and judgment which will result into an experience. The wealth of knowledge acquired by an individual after studying particular subject matters or experiencing life lessons that can provide an understanding of something. It was initially thought that, knowledge about HIV and its mode of transmission was the single factor necessary for initiating positive behavior change. This has found not to be true. There is evidence that in spite of more adequate knowledge of AIDS, there is continued high risk behavior among the youth of sub-Saharan Africa .(Vargas ,2000).NASCOP,(2011) behavior

change will not arise merely from dissemination of correct information about HIV because such information is often discounted by individuals who are strongly fatalistic about the chance for cure.

Coates T(2008)verifies education as one of the behavioral change interventions that work best at the individual level just like skills building, counseling and prevention case management as they are delivered either one on one or in small groups. UNAIDS (2008) also added that although individual-level interventions might be helpful, but they are not sufficiently efficacious lasting to be used alone to reduce HIV transmission. Coates, (2008) identifies Peer education as one of the primary approaches that can be used as agents of change. It is effective when there is participation and collaboration with vulnerable groups who are often alienated from formal service providers and government structures. It's especially effective in increasing condom use and reducing STIs in high risk groups in sub-Saharan Africa and Asia, including female sex workers, female bars or hotel workers.

High illiteracy rates hinders information sharing on HIV and other STIs and also causes Inability for girls to bargain for sex and some cultural and religious believes, poverty at individual levels prevents sensitization regarding HIV.

MOH,(2007)reveals that communication for change of Health seeking behavior with regard to HIV infection in today's Kenya is complicated by factors such as knowledge of having HIV infection hastens death hence people use this reason to avoid going for voluntary counseling and Testing (VCT). Simple information would barely begin to turn the tide, unless attended by innovative strategies to reach families and give them the knowledge and courage to step out of their cloisters and choose prompt and appropriate treatment that will save lives (NASCOP, 2005).Coates .J. et al (2009) reveals that modest changes in behavior are helpful but changes in transmission requires that large numbers of people change their behaviors substantially and maintains these changes for long time.

Stone burner R.et al, (2004) suggests that a mix of communication channels should be used to disseminate simple and clear messages about several risk reduction and health seeking option(e.g delay of onset of first intercourse ,reduction in number of sexual partners, condom use especially

with non-primary partners HIV testing and treatment for STIs) and one risk reduction strategy should not be emphasized over the other such as abstinence over condom use since people like choices and the mix of strategies. Slutkin, (2006) suggested that local involvement in messages design, production and dissemination was essential. The most energizing activities in many strategies and campaigns for HIV prevention involves using the creativity energy of people who are most affected by the epidemic to develop messages and strategies to motivate behavioral change.

2.5 Structural interventions and behavior change

Sumartojo (2000) defined structural factors as barriers to, or facilitators of an individual HIV prevention behavior and they relate to economic, social, policy, organization or other aspects of the environment. HIV related structural factors are defined as barriers to or facilitators of an individual's HIV prevention behaviors (Sumartojo .E (2000).They directly or indirectly affect an individual's ability to avoid exposure to HIV .These factors include: Environmental, Structural, societal policy & organizational. HIV related behavior change needs to target multiple levels, including individuals and the environments that influence their behavior.

Policy is a principle of behavior conduct while laws are rules and standards issued by a government(Surmatojo,AIDS,2000).Policies related to HIV have gone a long way in facilitating interventions that promote behavior change leading to a reduction in transmission of HIV(Surmatojo,1999). There has been several studies published that exemplify how structural factors may facilitate or inhibit HIV prevention behavior. Albert et al (1995) studied a structurally mandated intervention targeting female brothel workers and their clients where a law was passed requiring condom use in legal brothels. The law allowed women in Nevida brothels to insist on condom use with client and devise ways to serve clients who were reluctant to use condoms .It also led brothel owners to install safeguards such as security personnel to help women deal with uncooperative clients thus, very few clients refused to use condoms and there was reduced incidence of HIV.

A study by Rutherford et al (1985) in San Francisco revealed that issue of the public health policy related to HIV counseling and testing which facilitated increase in the likelihood of exposed persons knowing their risk and follow-up services and testing. This in itself promoted

behavior change towards HIV exposure by PLWHAS.A study by Fehrs et al (1988) revealed the initiation of anonymous HIV counseling and testing policy in 25 Oregon countries which saw over 3 times as many clients tested proceeding the policy where 49% of men who had sex with men reported that they would not accept testing if their identities were confidential but not anonymous. This policy removed a significant barrier to an important preventive behavior.

NASCOP,(2010)contains policies that support the provision of education or information. For example hospital policies to teach staffs on universal precautions or provide information for mothers on prevention of perinatal transmission, KNASP and NHSSP 11,(2005-2010)stipulates that premarital HIV testing is still not widely practiced, and comprehensive post-testing programs are not yet available to serve HIV-infected young people, whose weddings in some instances have been cancelled when the results became known. Adolescent prevention programs need to be developed to help young people adopt a positive style of living and bring down their high infection levels. Also needed are programs for adolescent care. Prisoners

HIV behavior programs target to promote accurate individual knowledge and perception of risk and increase individual motivation to avoid risky behavior (The Global HIV Prevention and Working Group, 2008).These programs also build individual skills needed to use to effectively negotiate risky situation. These programs target individuals, families, communities and entire societies. Those that target families aim to decrease the stigma associated with both HIV and sexuality, to promote open discussion about sexuality and drug use and to influence gender roles and norms. At the community level effective HIV programs seek to increase the value associated with safer behaviors to support community members to reduce their risks to build solidarity and reciprocity and to reinforce new norms(The Global HIV Prevention and Working Group,2008).HIV prevention effort targeting young people have traditionally focused on delaying the onset of sexual intercourse, promoting abstinence, decreasing frequency and number of sexual partners, safer sexual practices and condom use and treatment of STIs(FHI,2001).Kiai and Nduati(1997) hold it that the goal of an AIDS prevention program for adolescents should be to reduce HIV through ,adoption of safe patterns of behavior. Kiai and Nduati (1997) have identified the following behavioral programs targeted at the youth.

Prado G (2007) suggested that Parental counseling: most adolescents are exposed to limited information from their parents. Usually, girls are more likely to be counseled than boys.

The approach in Kenya has been to infuse HIV education into existing examinable subjects. Active health clubs and anti-AIDS running in schools. Use of peer educators as agents of behavior change as peer education has been shown to be successful in reducing substance abuse such as alcohol, drugs and tobacco and in reduction of odd risky behavior. Noar, (2008)reveals that Peer educators are a more credible source of information because they communicate in a language that can be understood by their peers, and they serve as role models that dispel the nominative concepts that all youths are involved in the risk behavior. Young Blade LM et al,(2007) added that the electronic and print mass media like radio, school reading materials targeting the youth like the straight talk magazine and informal media like music theater that include posters-shirts and interpersonal communication are all behavior programs targeted at adolescents. Wambua (2001) has however identified the following barriers to positive behavior change among the youth. Unplanned sexual intercourse, misconceptions regarding HIV and other STIs, stigma attached to HIV thus people do not try to find out their HIV status, those who know they are positive tent to be secretive and are shunned by their friends, families and communities. Young people see themselves as indestructible and react to HIV with comments such as "HIV came for people, am not a tree to be used for furniture and everyone will die anyway". Thus they continue with irresponsible sexual behaviors. Adults tend to seek teenagers for sex because they believe they are not infected with HIV.WHO,(2005) indicated that high illiteracy rates hinders information sharing on HIV and other STIs which causes inability for girls to bargain for sex and some cultural and religious believes, poverty at individual level prevents sensitization regarding HIV. Lack of supportive political will in Kenya is difficult to admit the magnitude and impact of HIV hence, it needs to maintain a particular international change and therefore do not accord to the seriousness it deserves. NASCOP (2011) added that abuse of alcohol and other drugs, substance abuse inhibits the ability of people to make rational decisions. It deters their efforts to abstain from sex, remain faithful to their partners and consistently use condoms.

The Government of Kenya has acknowledged the need to establish Youth friendly HIV services.(MOH,2005).Youth friendly services are accessible, acceptable and appropriate for adolescents(MOH,2005).They are broad-based Health and related services provided to young people to meet their individual health needs in a manner and environment to attract interest and sustain their motivation to utilize such services(MOH,2005) and they include; Counseling on

sexuality, abstinence and relationships, screening and treatment of STIs ,provision of information and education on the reproductive Healthy, provision of contraceptives, provision of recreational activities, training in livelihood and life skills such as decision making, assertiveness and goal setting, school health talks on personal hygiene ,reproductive health, STI prevention and HIV prevention. The youth friendly services meet the individual young people who revisit when they need to and recommend the services to their friends(MOH, 2005).The MOH 2005 has outlined the following reasons for establishing youth friendly services, to cater for the health needs of adolescents as they are a neglected group by the health system, to look in to the specific biological and psychological needs of adolescence, to educate the youth on behavior related risks and offer them counseling services on good practices. Youth friendly services should have the following minimum conditions (M.O.H, 2005), Affordability and accessibility, Safe and basic range of services, privacy and confidentiality, provider competence/attitude, quality and sustainability, in built monitoring and evaluation system. Currently, Kenya has a few youth friendly services where young people can access reproductive health care services. Despite the efforts made to establish youth friendly HIV prevention services, more than half of all new HIV infections in the world occur among young people under age 25(UNAIDS,2004).The key to working successfully with young people is to develop genuine adult youth partnerships early in the planning of interventions(UNAIDS,2006).This is essential for developing shared objects as well as to better understand the specific determinants of positive behavior change including the enabling factors that can create a supportive environment for change(FHI,2001).Remarkable progress has been made in informing the public about HIV sustenance of this programs and effecting real change in behavior and ultimately reducing STIs , HIV and unwanted pregnancies among the school going youth (Karuru 2004).

NASCOP,(2011)shows that Premarital HIV testing is still not widely practiced, and comprehensive post-testing programs are not yet available to serve HIV-infected young people, whose weddings in some instances have been cancelled when the results became known. Adolescent prevention programs need to be developed to help young people adopt a positive style of living and bring down their high infection levels. Also needed are programs for adolescent care. Prisoners have only recently begun to be provided intensive HIV prevention programs. The pervasive problem of alcohol abuse and the relapse to high-risk behavior while under the influence of alcohol has not yet been adequately addressed, and programs reaching out

to injection drug users have only recently been established. Although there are programs for commercial sex workers, services designed to divert impoverished young women from both formal sex work and informal trading of sex for cash or commodities remain scattered and ineffective.

Cost may be a structural barrier to the acquisition and use of condoms. A research carried out by Cohen et al (1999) found out that individuals who reported picking up free condoms were significantly more likely to report using condoms during their last sexual encounter than those who reported not picking up free condoms. Even those who had more sexual partners were more likely to use condoms when they are free than they had to pay the low price. This led to a conclusion that cost is a barrier to condom use and that free condoms should be available to persons at risk for HIV Crosse close (1992-1993) and broad head (1999) carried out another study to describe the impact of HIV related behavior of structurally imposed barriers to prevention behavior. In this study, the researchers assed the impact of the closure of a needle exchange program for intravenous drug users in a town in Connecticut. It revealed that before closure, 14% of interviewed intravenous drug users reported unsafe sources for syringes and 16% reported sharing a syringe but after closure of the exchange, the numbers who reported unsafe sources increased to 34%.After closure, the rate of reusing syringes doubled among those who were surveyed.

Structural factors have more immediate impact on individuals. Many view behavior as personally motivated or resulting exclusively from a person's concerns decisions. Therefore the role of structural environment may be overlooked as most of the interventions aim to change an individual's knowledge or motivation without also addressing the root causes or the context that encourages HIV risk (Parker R, 2000).

2.6 Socio demographic factors and behavior change

WHO, (2008) adds that the increase in sexually transmitted diseases (STDs) among HIV-infected individuals' points out that many HIV-infected individuals continue to engage in high-risk sexual behavior, potentially placing their partners at risk for acquiring HIV infection. High-risk behavior in persons living with HIV not only contributes to the transmission of HIV to persons not previously infected, but may also result in transmission of sexually transmitted diseases (STDs), unplanned pregnancy, and transmission of new and possibly resistant strains of

HIV to those who are already infected. Desai et.al (2006), in his individual level analysis, he stated that educated people should be at greater risk of infection at early stages of an infection but should be better equipped to change their sexual behavior when faced with the facts of HIV transmission. There are several factors that put educated people at a greater risk of HIV infection; More educated people tend to change sexual partners more rapidly because they are mobile and they have greater control over their own sexual behavior (Desai et.al 2006).Educated people have higher socio-economic status of more educated men gives them greater disposable income, increased ability to travel and to use commercial sex workers (CSW).In addition, more educated women start having sex later but delay marriage to an even greater extend, leading to being single and sexually active for longer periods of time and thus having many sexual partners.(Desai et.al, 2006).

Education also influences the choice of contraceptives, in that even if educated women are likely to use contraceptives but it all depends on which contraceptives are being used, because there are those contraceptives like pills, intrauterine contraceptives and even tubal ligation that do not protect against the transmission of HIV or against the sexually transmitted diseases (STD)(NASCOP,2006). Gregson, et al (1998), suggests that more educated people are exposed through formal schooling and media unlike literate women who even believed that healthy looking people can never be infected and hence indulging in more risk behavior. Bandura,(1977),proved in his study that education is associated with self-efficacy in general, and therefore in the context of HIV ,more people are likely to believe that they have control over their behavior, for example ,more educated women are more able to negotiate safe sex. This analysis shows that education should lead to a greater adoption of safe sexual behavior in response to the HIV epidemics.

Data from Demographic Health Survey(KDHS,2008)showed that women with primary school education were more likely to report using condoms at last sex and a study from and a study conducted in Kisumu revealed that education led to less risk sexual behavior and condom use was common amongst more educated individuals (Gregson,et al ,2006). Desai et.al (2006),in his individual level analysis, he stated that educated people should be at greater risk of infection at early stages of an the infection but should be better equipped to change their sexual behavior when faced with the facts of HIV transmission. There are several factors that put educated people

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Some specific groups remain poorly reached by HIV prevention efforts, however. The problem of HIV discordance among married couples remains poorly understood by the general public (NASCOP,2010), and programs addressing the 'Be faithful to one partner' aspect of ABC do not yet adequately emphasize 'Be faithful to a partner whose status you know'.
High illiteracy rates hinder information sharing on HIV and other STIs. Inability for women to bargain for sex,

NASCOP,(2011)The behavioral study indicated that the gender pioneer dynamics in many family give, male members dominance even female members in making decisions about diagnosis and treatment. An infected woman may be disempowered even in making health decisions that could save her own life. She may have little influence over the health decisions of infected family members OH,(2007) adds that Moralistic male attitudes towards HIV may dictate attitudes towards new information and new behavior option. Orubuloye and Caldwell,(1999)showed that the reluctance to institute positive behavior change among the youth of sub- Sahara Africa can be partly explained by the perception among the males in the region that they have an INBORN need for sexual activity that cannot be denied. Furthermore, female sex workers are motivated by the hope of later setting themselves up in business and marrying (Orubuloye and Caldwell, 1994)

In Kenya, it has been found that there are more male youths who have sex under the influence of alcohol than female counter parts who have sex when drunk. Having sex under the influence of alcohol is dangerous as the victim will not have the will power to make the right

decision (Varga,1999).KDHS,(2008)reported that Youths are exposed to forced sex(rape) and in particular girls are more prone to forced sex because of the number which include low bargaining power ,being taken for an advantage by older men and socio cultural impediments.

Pearl,(2000)recorded in the study carried out in Uganda about the use of protection by sex, revealed that 60.6 percent of the female youths were faithful compared to the 49 percent of the male counter parts. At the same time 38.9% of males and 20.8% of females were using condoms which could be explained by the low negotiation skills for safer sex by female youths, While only 11.4 percent of the males and 18.6% of female youths were abstaining

2.7 Conceptual framework

The study was guided by a conceptual framework that defined the relationship between the independent variables and the dependent variable i.e. behavior change**.**

2.7.1 Discussion of conceptual framework

Figure 1below shows interrelationships of various factors influencing behavior change in HIV infected patients .The factors are interrelated in that each category of factors can influence HIV infected patients to make a decision either to change behavior

INDEPENDENT VARIABLE

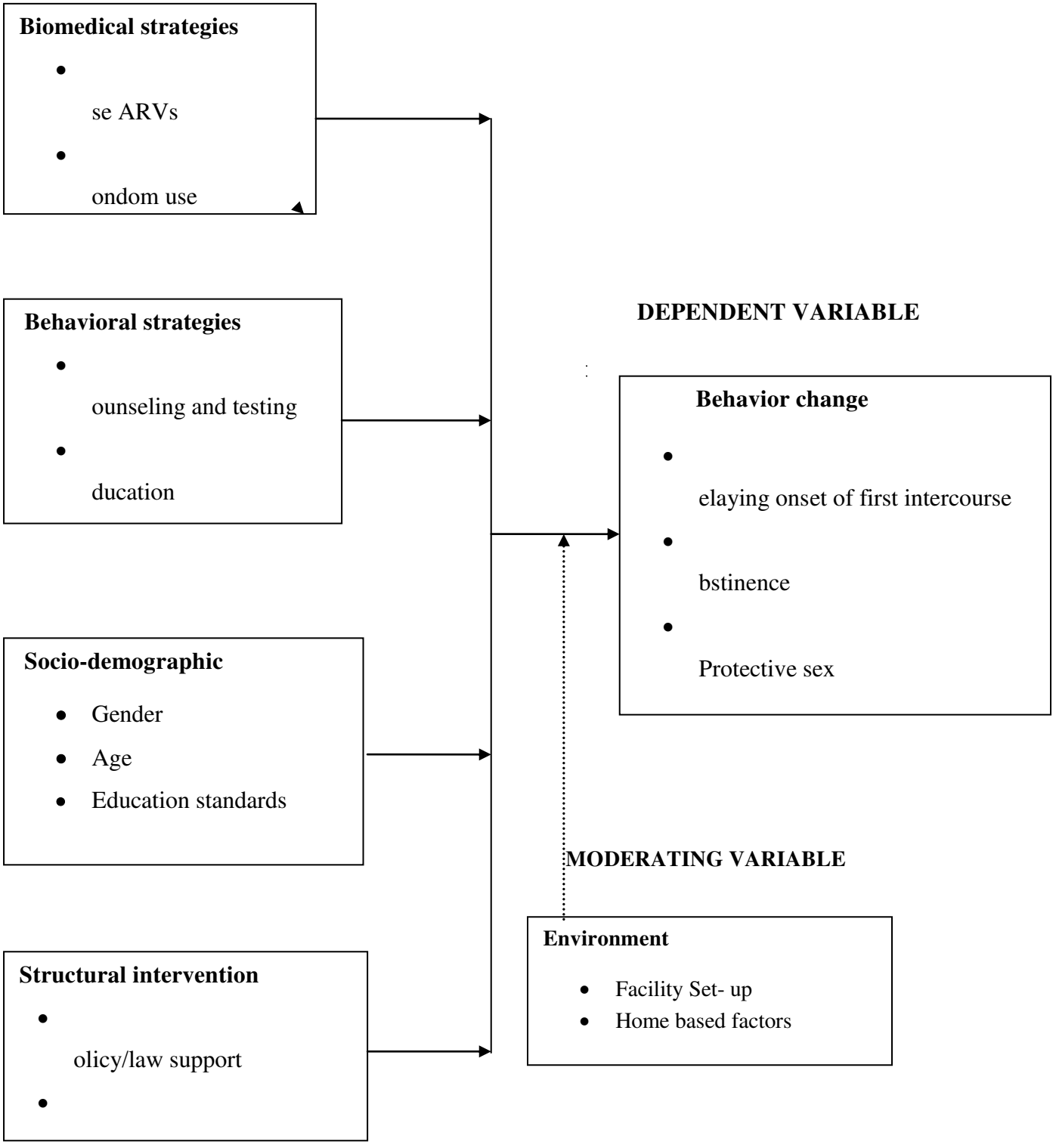

Figure 1

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This Chapter covered research methodology that consisted of the following; Research design, target population, sample size and sampling procedures, research instruments, validity of the research instruments, Reliability of the research instruments, data collection procedures, data Analysis techniques and finally operational definition of variables.

3.2 Research design.

The Researcher adopted a descriptive survey design to obtain information both quantitative and qualitative that was used in describing the existing phenomena. According to Gay (1981) a descriptive survey design is a process of collecting data in order to answer questions concerning the current status of the subject in the study. Descriptive studies are not only restricted to fact finding, but may often result to finding information of important principles of knowledge and solution to significant problems (Kerlinger, 1996). Mugenda and Mugenda (1999) add that a descriptive survey is an attempt to collect data from members of a given population so as to determine the current status of that particular population with respect to one or more variables.

3.3 Target population

According to Mugenda and Mugenda (2003) a target population, is a population to which the researcher wants to generalize the results of the study. The target population for this study was 3,350.This was the number of PLWHAS in care at Bungoma Referral Hospital.(Source: MOH 307 Register).

3.4 Sample Size and Sampling Procedure

Sampling size and sampling procedure was determined in this section.

3.4.1. Sample size

The ever increasing need for a representative statistical sample in empirical research has created the demand for an effective method of determining sample size. To address the existing gap, Krejcie & Morgan (1970) came up with a table for determining sample size for a given population for easy reference (Table 1).From the table, the sample size is 346.

3.4.2 Sampling Procedure

In this study, the researcher adopted stratified random sampling technique. Stratified random sampling is a modification of random sampling in which the population is divided into two or more relevant and significant strata based on one or more attributes (Saunders, et. al., 2007). This sampling design was used because the population could be divided into two or more sub units based on certain internal characteristics. (Mugenda and Mugenda, 1999). Each of the stratum to which the population was divided obtained an equal chance of being sampled. Further, Kothari (2004) recommends stratified random sampling because it is accurate, easily accessible, divisible into relevant strata and it enhances better comparison; hence representation across strata. The advantage of stratified sampling is its ability to ensure inclusion of sub-groups, which would otherwise be omitted entirely by other sampling methods because of their small number in the population. Proportionate sampling was used to get the number of the sample in each strata. Finally, each sample was selected using systematic random sampling technique, giving all participants an equal chance of being selected in the sample. This involved selecting the n^{th} case from a randomized sampling frame to include in the sample. To get the sampling interval, the researcher divided the accessible population by the sample size. (3350/346) = 9.6. The researcher selected every 9^{th}patient from the randomized sampling frame.

Table3. 1: Sample Frame and Sample Size for HIV infected persons in Bungoma County Referral Hospital

0 – 14 years		Adults		Total	Remarks
Female	Male	Female	Male		
261	244	4641	2131	7,277	Ever enrolled
149	128	2136	937	3,350	Currently on care

3.5 Research instruments

The researcher used a survey questionnaire to collect data related to the study from the target population. A self administered questionnaire was used for the convenience of both researcher and the respondents of the study. The first part; section A of the questionnaire; covered general details, section B covered the biomedical strategies influencing behavior change, section C covered the behavioral strategies influencing behavior change, section D covered the socio-demographic factors influencing behavior change and section E covered the structural factors affecting behavior change of the HIV infected patients in BCRH. The researcher used closed ended questions for easy manipulation of data during analysis and interpretation; open ended questions which enabled the researcher gather more information on factors influencing behavior change in HIV infected patients.

3.5.1 Pilot testing

Piloting is trying out research instruments on the respondents who were not be used in the main study. Piloting ensures that research instrument is clearly stated and that they have same meaning to the respondent. A pilot study was carried out on three patients who had visited the comprehensive care center on one of the chosen clinic day in BCRH. The consistence in the questionnaire or otherwise led to adoption or re-framing respectively.

3.5.2 Validity of the research instruments

According to Anastancia (1982), Validity refers to the quality that a procedure or instrument or tool used in the research is accurate, correct, true, meaningful and right. Kombo and Tromp, (2006) adds that validity of instrument shows how well the instrument measures what it is supposed to measure, this is supported by Harber and Boyd (2000) in that if questionnaires are to produce meaningful results, then it should be valid. For the study, the researcher used content validity. The researcher shared the research instrument with the supervisor to assess its appropriateness in content, clarity, adequacy in capturing the needed data. Feedback from the pilot study informed the researcher on which questions to drop or re-state or correct, to collect valid data.

3.5.3. Reliability of the research instruments

Reliability is the estimate of the degree to which a research instrument yields consistent results or data from repeated trials (Mugenda and Mugenda 1999). The researcher tested the reliability of the instrument using split-half method. This involved administering a single instrument once. The instrument was then divided into 2 halves; the 1st half, was odd numbered items while the 2nd half was even numbered items. These two halves were assumed to form 2 different sets of questionnaires which were scored separately using a Spearman brown prophecy correlation coefficient which was used to determine the reliability of the instrument. The 0.6 correlation coefficient was 0.6 and this was acceptable.

$$R = \frac{1 - \sum d^2}{n(n^2-1)}$$

d – Absolute deviation of the actual ranks of variables x and y

n – Number of pairs of scores

3.6 Data collecting procedure

The relevant document such as introduction letter was obtained from the University of Nairobi administration to facilitate the research process. Primary data was then used for the study. A structured questionnaire was collected back for analysis.

3.7 Data analysis Techniques

After the collection of data, it was inspected to ensure that only relevant and accurate data was retained for analysis. In the case of the open-ended questions where subjects were free to give their own responses, the researcher categorized the responses. Data was analyzed using descriptive analysis. Qualitative data was analyzed through descriptive statements. Numerical information of the study was analyzed using quantitative design of data analysis. Findings of the study was presented using frequency tables and percentages and thereafter interpreted depending on relative responses. Quantitative findings were incorporated in the researcher's interpretation on the basis of the reviewed literature and field experience.

3.8 Operational Definition of Variables

Operational definition of variables shows the objectives of the study, dependent variable, the indicators of the independent variables and how they can be measured.

Table 3.2 Operational Definition of Variables

Objectives	Variables	Indicators	Measurement scale
To assess how the biomedical interventions influences behavior change in HIV infected patients in BCRH	**Independent Variable:** Biomedical strategies **Dependent Variable:** Behavior change	• Condom use • Use of ARV. • Treatment of STI and OIs	Nominal ordinal
To establish how behavioral strategies influence behavior change in HIV infected patients in BCRH	**Independent Variable:** Behavioral strategies **Dependent Variable:** Behavior change	• Counseling and testing • Behavioral communication • Education	Nominal ordinal
To investigate how socio demographic factors influence behavior change in HIV infected patients in BCRH	**Independent Variable:** Socio demographic factors **Dependent Variable** Behavior change	• Gender • Age • Educational standards	Ordinal Nominal
To determine how the structural factors influence behavior change in HIV infected patients in BCRH	**Independent Variable:** Structural factors **Dependent Variable:** Behavior change	• Policies/Laws • Economical resources • Organizational structure	Ordinal Nominal

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter discussed questionnaire return rates and how biomedical strategies, behavioral strategies, structural factors and socio-demographic factors influence behavior change among the HIV infected patients in B.C.R.H.

4.2 Questionnaire Return Rate

In the study, questionnaires were administered to the HIV infected patients attending their clinics in the comprehensive care center (C.C.C) and they were in the cluster of four (4) departments within the Comprehensive Care Clinic; the registration room, the nutrition room, the pharmacy and at the laboratory. The questionnaires were then collected from each department as presented in table 4.1

Table 4.1 Questionnaire Return Rate

Department	Number Dispatched	Number Received	Return rates
Registration	120	103	85.83
Nutrition Department	60	53	88.33
Pharmacy	96	78	81.25
Laboratory	70	51	72.86
Total	**346**	**285**	**82.07**

At the registration department 103 out of 120(85.83%) questionnaires were returned, at the nutrition department 53 out of 60 (88.33%,)questionnaires were returned, at the pharmacy department, 78 out of 96(81.25%) questionnaires were returned and at the laboratory department 51 out of 70 (72.86%)were returned. Out of 346 questionnaires that were dispatched 285 were collected back and were used for analysis thus the questionnaire return rate was therefore 82.07%. This concurs with Denis, (2003) who claimed that though every researcher pursues

100%questionnaire return rate but the standards for return rates usually is centered on 70% or 80%. Babbie (1990) also concurred that a response of 60% is good; but 70% is very good and therefore the 82.07% return rate was acceptable as per the support of the above mentioned people.

4.3 Biomedical Strategies and behavior change

The study sought to establish how biomedical strategies influence behavior change of HIV infected patients attending clinics at Bungoma County Referral Hospital CCC. The Biomedical strategies that the researcher focused on were: the use of ARVs, the use of Condoms and the treatment of Sexually Transmitted Diseases, thus the respondents were asked on their knowledge, opinions and practice which was to help the researcher depict their health seeking behavior and its effect on their continuum of care.

4.3.1 Accessibility and use of ARVs

The propensity of attaining behavior change in HIV infected patients is intricately tied to the access and utilization of life saving medication and access to HIV prevention and services (UNAIDS,2013). ARVs introduction and its rapid expansion in access is a substantial technological innovation that has changed the course of the epidemic (kerwins,2012),thus the researcher sought to establish the number of the HIV infected patients accessing and utilizing the ARVs as shown in the table 4.2 and 4.3.

Table 4.2 Use of ARVs

Respondents	Frequency	Percentage
Yes	215	75.44
No	70	24.56
Total	**285**	**100**

The table 4.2 shows that out of the 285 respondents who were attending their clinics at the CCC of the BCRH, 215 (75.44%) of the respondents were using ARVs while only 70 (24.56%) were not using ARVs. This concurred with the report of WHO,(2015) that was seeking to show the

number of people accessing ARVs and Kenya as one of the countries showing remarkable progress in expanding access to ARVs and reducing the number of new infections had 900,000 people accessing ARVs by the end of 2015.The 24.56% that was not receiving ARVs could be that some were newly diagnosed and were still undergoing investigations that would qualify them as eligible patients to receive drugs .The eligibility criteria is well stipulated in the Kenyan guidelines on when to start ARVs and on pre-exposure prophylaxis. These guidelines by WHO greatly expanded the number of people eligible to receive treatment, as they recommended pre-exposure (PrEP) prophylaxis as a prevention choice for people at a substantial risk of HIV infection who are to start using ARVs immediately after exposure to any risk behavior such as rape or having a broken condom during the act of sexual intercourse (WHO, 2015). The 2015 treatment initiative aimed at ensuring the world reaches its 2015 HIV treatment target of 15 Million on ARVs (WHO, 2013).WHO,(2015) stipulated that by mid of 2015, 15.8 Million PLWAHs were to be receiving ARVs globally and UNAIDS Global AIDS update Report 2016 also gave an estimation of 17 million people who were to be accessing life saving antiretroviral medicines by the end of 2015 giving a global coverage of 46% by the end of 2015.

4.3.1.1. Duration on ARVs

UNAIDS,(2013) did reveal that Change of behavior in HIV infected patients does not depend on the accessibility to ARVs alone but also on the utilization of the ARVs, thus the respondents were asked on the duration taken while on ARVs in table 4.3

Table 4.3. Duration on ARVs

Period	Frequency	Percentage
1 – 6 months	43	20
6 months – 1 year	47	21.86
2 – 3year	81	37.67
6 years and above	44	20.47
Total	**215**	**100**

Table 4.3 indicates that out of 215 respondents who were receiving ARVs, only 43 (20%) had used the ARVs for 6 months, 47(21.86%) had used the ARVs for upto1(one) year,81 respondents(37.67%) had used ARVs for 2-5 years and those who had used the ARVs for six (6) years and above were 44 (20.47%). Thus most of the respondents had used ARVs for 2 years or more. The length of duration on ARVs usage can directly translate to the number of deaths being reversed and the lives of the HIV infected patients being saved because ARVs provision means more infected persons are alive and healthy, (Lakdawalla. et .al, 2006).Some of the impacts of accessing and utilizing ARVs as seen in the study carried out in south Africa is that: ARVs saved life's as the therapy averted 5.5 Million deaths from peak in 1995 to 2012, in prevention of new infections, ARVs reduced the risk of HIV transmission by up to 96% and prevented illness by reducing the risk of T.B and STIs in PLWAHS by 65% and also helped in revitalizing peoples productivity as working adults were seen returning to work earlier, boosting labor productivity and reduced hardships(WHO 2013).

4.3.1.2 Effects of ARVS on individual's sexual life

As earlier on discussed, ARVs revitalize the health and productivity of those taking them hence improvement in their sexual life is not left out. To prove this, the researcher sought to understand their sexual performance in relation to their ARVs utilization, thus the respondents were asked to state their sexual performance experiences in table 4.4

Table 4.4. Effects of ARVs on individual's sexual life

Sexual life	**Frequency**	**Percentages**
Active	83	38.60
Moderately Active	91	42.33
Very Active	24	11.33
Not Active	17	7.91
Total	**215**	**100**

Though UNAIDS, (2004) stipulates that the impact of ART on sexual risk behavior and HIV transmission among the infected persons in Africa is unknown but this study reveals a different outcome. Table 4.4 shows that out of 215 respondents who were using ARVs,83(38.60%) had active sexual life, 91 (42.33%) respondents had moderately active sexual life,24 (11.33%) had very active life, while only 17 (7.91%) reported of not having active sexual life. ARVs provision then means that, more infected persons are alive and presumably in the pool of potential sexual partners (Lakdawalla. et .al, 2006).Medical literature has also demonstrated that these treated individuals have lower transmission probabilities, thus directly decreasing the rate of new infections as a larger fraction of the pool of potential sexual partners has lower transmission rates hence decreasing the risk of infection for those who engage in sex with them (Kremer 1996).

ARVs could influence the spread of HIV both through changing behavior and through biological channel which helps in reducing infectiousness of those on treatment and keeping more people who are HIV positive alive. ARVs have shaped the future infection rates by suppressing the viral replication and preserving the immune functioning of an individual. UNAIDS, (2013) revealed that with ARV access, individuals who learn that treatment will be available may engage in more risky behavior. This constitutes a specific example of moral hazard which is associated with access to ARVs that individuals with greater expected access to ARVs would be more likely to risk HIV infection than those who do not anticipate that treatment would be available. The increase in risk taking of those on ARVs can increase new infections by increasing those who put themselves at risk. The reduction in transmission rates can outweigh a substantial change in behavior among those who are negative so that the rate of new infections will decline with treatment.

4.3.2 Use of Condoms and behavior change.

Unprotected sex remains the greatest risk factor identified for HIV transmission and it is only the condom that offers protection during sexual intercourse. The researcher therefore sought to understand the knowledge about condom use among the HIV infected patients attending HIV clinics in BCRH, hence the respondents were tested on their knowledge on condom use in table 4.5 and 4.6.

Table 4.5 Knowledge on condom use

Knowledge on condom use	Frequency	Percentage
Yes	272	95.44
No	13	4.56
Total	**285**	**100**

It is clearly indicated from the research findings that the knowledge on condom use has increased a lot thus 272 (95.44%) of the respondents knew why a condom was to be used by HIV infected patients while only 13 (4.56%) of the respondents did not know why a condom was to be used by a HIV infected patient. The consistent and correct use of condoms coupled with risk reduction strategies, continue to play an important role in the reduction and prevention of HIV/AIDS transmission (Frieden.T.et.al 2001).Therefore knowledge about condom use was paramount in order to increase its use. The reasons for condom use was revealed in table 4.6

Table 4.6 Reasons for Condom use

Reasons	Frequency	Percentage
To prevent Infections	83	29.12
To prevent Re-infection	146	51.23
To prevent sexual transmitted diseases	45	15.79
To prevent pregnancy	11	3.86
Total	**285**	**100**

Among the reasons cited by the 285 respondents in table 4.6 indicated that 83 (29.12%) of the respondents knew that condoms prevent infections, 146 (51.23%) knew that condoms prevent re-infections, 45 (15.79%) knew that condoms prevent STIs while only11(3.86%) revealed that it prevents pregnancy. This explicitly showed that most of the respondents knew exactly why condoms should be used by HIV infected patients which was to prevent re-infection from other HIV strains. It's one thing to know how and why the condom should be used and the utilization of the same. That is why the researcher sought to understand if the respondents used the condoms or not in line with the knowledge they had in table 4.7

Table 4.7 Condom Use

Usage	Frequency	Percentage
Yes	263	92.28
No	22	7.72
Total	**285**	**100**

Table 4.7 indicated that 263(92.28%)out of 285 respondents who were the majority used condoms while only 22 (7.72%) had never used a condom, thus a great percentage of the respondents used condoms. This percentage of utilization of the condoms gave an impressive picture of HIV behavior change of those who had an experience of using a condom while only a few had never used the condoms. This consistent and correct use of condoms coupled with risk reduction strategies, would play an important role in the reduction and prevention of HIV/AIDS transmission (Frieden.T.et.al 2001).But when asked on who the condom was used on with and the frequency of use, the results were astonishing since only 40.35% used the condom on marital partner and the majority of 59.65% used a condom on non marital partners and used it mostly sometimes as shown in table 4.8

Table 4.8 Condom use and sexual partner.

Sexual Partner	Frequency	Percentage
Marital partner	115	40.35
Non marital partner	170	59.65
Total	**285**	**100**

The results in table 4.8 shows that the marital partners stand a higher risk of being re-infected with HIV, since most of the unprotected sex occurs among the married couples. Several studies have shown varied results regarding the use of condoms in non-regular partners worldwide. In the study conducted among the recruits and regular soldiers in US revealed similar results (UNAIDS,2004) in that 5.5% of the recruits and 1.7% of the regular solders reported having non-regular sexual partners and among those who had casual sex 46.3% reported using

condoms. Makanyi (2009) also in their study found that 70.2% from the assessment group believed that a condom should be used if you have sex with a person other than your regular partner. Marston C. et.al(2006) in their studies also noted that key reasons for not using condoms during sex was associated with lack of trust and in another study conducted by Nyameka et.al (2009),condoms were seen to signify distrust, less love and less commitment.

4.3.3 Treatment of STI infections in HIV infected patients

Among the factors in play that lead to the behavior change among the HIV infected patients is the treatment of sexually transmitted diseases (STI).STI and HIV are both contracted and spread through the same way of risk sexual behaviors such as having unprotected sex and therefore treating an STI can reduce the spread of HIV by reducing the amount of virus shed in the genital tract of those infected and reducing susceptibility to HIV infection. In search to understand the relationship between HIV and STI infections the respondents were asked to state whether they had ever suffered from any STI since their HIV diagnosis.

Table 4.9 the prevalence of STI in HIV infected patients.

Responses	**Frequency**	**Percentage**
Yes	90	31.58
No	195	68.42
Total	**285**	**100**

Table 4.9 reveals that only 90(31.58%) of the respondents had suffered from HIV while 195 (68.42%) had never suffered from any STIs. These findings revealed that though it is a small percentage of those who had suffered from an STI but still it is a sure evidence that there was the practicing of unprotected sex which is asexual risk behaviors as stipulated by WHO(2008).When the respondents who had suffered from an STI were asked to state the kind of STI they had suffered from ,the results were as shown in table 4.10

Table 4.10 STIs in HIV infected patients.

STIs	Frequency	Percentage
Syphilis	37	41.11
Gonorrhea	33	36.67
Urethritis (Urinary tract infection)	11	12.22
Genital Ulcers	09	10.00
Total	**90**	**100**

Table 4.10 revealed that out of 90 that had suffered from an STI, 37 (41.11%) of the respondents had suffered from Syphilis, 33(36.67%) suffered from Gonorrhea, 11 (12.22%) suffered from Urethritis while only 09(10%) suffered from Genital Ulcers. The increase in STI among HIV individual's points that many individuals continue to engage in high risk sexual behavior potentially putting their partners at risk of acquiring HIV infection. The Kenyan government in partnership with UNAIDS and other development partners is committed to the fast-track approach to ending AIDS as a public health threat by 2020 so STIs which are important cofactors for HIV transmission must be factored in if we are to achieve the 2020 treatment target of zero infections and zero AIDS related deaths.

4.4 Behavioral Strategies and behavior change.

The estimation of the impact of any intervention on future HIV infections depends on individual's behavioral response to treatment and prevention services available.

4.4.1. Counseling and Testing

Behavior change in support to positive living, skill building on how to live a healthy and productive life and prevention of further transmission can be attained when one goes for HIV counseling and testing (WHO 2003).The researcher sought to understand if the respondents had any counseling and testing sessions after being diagnosed to be having HIV infected and if the counseling was of any help.

Table 4.11Respondents Counseled and tested

Respondents	Frequency	Percentage
Yes	248	87.02
No	37	12.98
Total	**285**	**100**

The research findings in table 4.11reveals that out of 285 respondents, 248(87.02%) had ever undergone HIV counseling and testing (HCT) after being diagnosed with HIV and only 37(12.98%) never had HIV counseling and testing services. This is a good behavior change practice that needs to be encouraged. Gong (2011) states that HIV testing changes behavior differently for individuals with different priors about their own status. Apart from knowing status, HCT can be used as a means through which individuals; couples/families receive personalized risk reduction counseling to help prevent further transmission of HIV (WHO 2015).

Table 4.12 Nature of counseling received.

Types	Frequency	Percentage
Individual Counseling	163	65.73
Group counseling	54	21.77
Family/Couple Counseling	31	12.5
Total	**248**	**100**

HCT of whatever type whether individual, peer or family counseling is of great help since it contributes to HIV care, treatment and prevention goals by identifying HIV infected persons who are eligible for care and treatment and who can prevent onward transmission to others. (NASCOP, 2005).This was shown in table 4.12. The findings reveal that 163(65.73%) of the respondents were counseled and tested individually, 54(21.77%) were counseled in a group and 54(12.5%) counseled as a family or a couple, otherwise the majority of the respondents had to be counseled and tested individual.

Table 4.13 Importance of counseling and testing.

Respondents	frequency	Percentage
Helped disclose my status	35	14.11
Helped to adhere to ARVs	57	22.99
Helped me to live positively	136	54.84
Helped me to know my partners status	13	5.24
Helped me access a psycho-social group	7	2.82
Total	**248**	**100**

Table 4.13 indicates that 14.11% of the respondents revealed counseling and testing helped them disclose them status, 22.99% helped them to adhere to ARVs, 54.84% helped them to live positively, 5.24% helped them to know there partner's status and only 2.82% of the respondents revealed that it helped them to access a psychosocial group.

The research findings explicitly laid out the importance of HCT in HIV infected patients as follows. Helped to know partner status, helped to adhere to ARVs, helped to live positively, it was a means through which they accessed a psychosocial group and also enabled them to overcome denial, stigma and discrimination as they could freely disclose their status.

4.4.2 Education and behavior change.

Another aspect of behavioral strategies that has an influence on HIV behavior change is education. Education is a means through which information is given and in this case information about and for HIV (Iwara, 2013).Education can be formal or even informal so long as the issue in picture is addressed. Thus the researcher sought to understand through the respondents if education had any influence on HIV behavior change as shown in table 4.13

Table 4.14.The Influence of education on HIV behavior change.

Respondents	Frequency	Percentage
Yes	263	92.28
No	22	7.72
Total	**285**	**100**

Table 4.14 indicates that out of 285 respondents, 263(92.28%) of the respondents agreed that education had an influence on HIV behavior change while only 22 (7.72%) did not agree. This factor could not be underestimated since; the research findings showed that 92.28% agreed that it had a great influence on HIV behavior change. As the saying goes, Education is power, for it empowers even the HIV infected patients to make informed decisions, improves bargaining power on sexual matters, It also enables people to live positively and change their perspective way of approaching life issues(WHO,2011)

Table 4.15How education influence HIV behavior change

Respondents	Frequency	Percentage
Empowers to make informed decisions	20	7.60
Education improves bargaining power on sexual matters	14	5.32
Education enables people to live positively	28	10.65
All of the above	201	76.43
Total	**263**	**100**

The table 4.15 indicates that 20(7.60%) of the respondents suggested that education empowers a person to make an informed decision, 14(5.32%) suggested that education improves bargaining power on sexual matters, 28(10.65%) suggested that education enables people to live positively and 201 (76.43%) suggested that all the factors were applicable. This revealed that education was indeed important as it could help in sensitizing and mobilization of HIV services and this will in return improve the utilization and uptake of services such as HCT,HIV care and treatment which is paramount in the management of HIV infected patients.

4.4.3 Behavior change communication.

Behavior change communication is an important behavioral strategy that needs to be emphasized on. MOH (2007) reveals that communication for change of health seeking behavior with regard to HIV infection in Kenya today is complicated and dynamic. Therefore it needed a more sophisticated way of passing information to the infected, thus the researcher sought to understand the mode of information giving that is effective in communicating HIV behavior change information as indicated in table 4.16

Table 4.16 effective mode of behavior change communication

Respondents	**Frequency**	**Percentage**
Peer education	98	34.39
Media	83	29.12
Counseling	53	18.60
School education curriculum	51	17.89
Total	**285**	**100**

The table 4.16 above indicates that of the 285 respondents who were asked ,83 (34.39%) of the respondents suggested peer education, 53(29.12%) suggested that media was the effective mode of behavior change communication, while 18.6% believed that counseling was the effective method and then 51(17.8%) of the respondents suggested school education such as sex education. This is to show that, it is not only the packaging of information but also means through which communication is done such as revealed in the research findings .Simple information will barely begin to turn the tide unless attended to by innovative strategies to reach families and individuals in order to give them knowledge and courage to step out of their cloisters and choose prompt and appropriate measure that will save lives (NASCOP, 2005).

4.5 Socio- demographic factors and behavior change.

UNAIDS(2000) noted that sexual behavior is the most important factor influencing the spread of HIV in the world, and this behavior varies greatly across cultures, age groups, socio-economic status and even gender is at risk of being infected although in different percentages.

This was the reason why the researcher sought to understand the socio-demographic factors that influence behavior change in HIV infected patients such as gender, age, marital status and educational standards.

4.5.1 Gender of the Respondents

The study sought to determine the gender of the respondents because gender plays a great role in distinguishing between feminine and masculine due to their design by nature and organs. Therefore the respondents were asked to state their gender and the results are as in table 4.16.

Table 4.17 Gender of respondents

Gender	Frequency	Percentage
Male	126	44.21
Female	159	55.79
Total	**285**	**100**

Table 4.17 depicts that, majority of the gender who were infected were females as shown by159(55.79%).This was followed by the male gender of 126 (44.21%).This implies that, there were more females affected than males. This study concurs with the WHO (2015) report which stipulated that adolescent girls and young women are at high risk of HIV infection globally due to harmful gender norms and inequalities, obstacles to education and sexual and reproduction health, poverty and food insecurity and violence formed key drivers of this increased vulnerability. The opinion of the respondents was also sort on the gender that was specifically at a higher risk of being infected by HIV and why it was so as shown in table 4.18.

Table 4.18 The gender that was at high risk of HIV infection.

Respondents	Frequency	Percentage
Female	181	63.51
Male	104	36.49
Total	**285**	**100**

Table 4.18 reveals that out of 285 respondents, 181 (63.51%) suggested that female gender was at a higher risk than male gender whose response was 104 (36.49%). But this does not qualify that male gender is safe since sexual behavior is dynamic as it can be hetereo or homosexuality which means both parties share the consequences of their acts (NASCOP, 2011). The researcher did not stop at this so he went further to get reason as to why both genders were at risk of HIV infections and results were as stipulated in table 4.19 and 4.20

Table 4.19 why female gender is at high risk of HIV infection.

Respondents	frequency	Percentage
Most of the female are illiterate or less educated	32	17.68
Females have low bargaining power on sexual issues	50	27.62
Most females depend on the male partners for a living	77	42.54
Females are more likely to indulge in commercial sexual work	22	12.16
Total	**181**	**100**

Table 4.19 revealed that 32 (17.68%) out of 181 respondents suggested that most of the females are illiterate or less educated while 50 (27.62%) of the respondents suggested that females have low bargaining power on sexual matters, while 77 (42.54%) of the respondents suggested that females are at higher risk because most of them depend on the male partners for a living and 22 (12.16%) suggested that females are at a higher risk because they are likely to indulge in commercial sexual work. UNAIDS,(2002) had consistent results, where they observed that married women may be unable to negotiate the use of condom and could be victims of unprotected sexual intercourse even when they are aware of the HIV information. Concurrently, in the study findings the female gender was cited to be at higher risk because most female are

illiterate or less educated. Have low bargain power on sexuality issues, most of them depend on their marital partners for a living and they are likely to indulge in commercial sex work because it does not need any education or technicality.

Table 4.20Why male gender is at risk of HIV infection.

Respondents	Frequency	Percentage
They are the decision makers in matters of health	90	8.65
They have greater control over their own sexual behavior	11	10.58
Most men are highly educated and financially empowered	7	6.73
Most males are very mobile and like working away from their families	5	4.81
All of the above	72	69.23
Total	**104**	**100**

Male gender had a risk of only 36.49% but, this does not qualify that male gender is safe. This gender is equally at risk because they are the decision makers in matters of health and therefore have greater control over their own sexuality. Most men are highly educated and financially empowered so they can do what they want within their ability and most males are very mobile and likely to work away from their families.

4.5.2 Age of Respondents

Age is a very important socio-demographic factor that greatly influences HIV behavior change since it determines the individual's ability in making right judgment on matters of life. Like in this case HIV contagion depends on an individual's decision making on sexual matters. Therefore the study sought to determine the age of respondents and the results were summarized and presented in the table 4.21.

Table 4.21 Age of respondents

Age category	Frequency	Percentage
0 – 14	28	9.82
15 – 24	108	37.89
25 – Above	149	52.28
Total	**285**	**100**

Table 4.21 shows that there were 28 (9.82%) of the respondents in the range of 0 – 14 years of age, 108 (37.89%) in the range of 15 – 24 years of age while 149 (52.29%) of the respondents were above 25years of age. The majority of the respondents 149 (52.29%) were in the range of 25years and above years of age. This shows that most of the respondents were adults. WHO, (2015) Stipulates that adolescent girls and young women 15-24 years are at high risk of HIV infection globally. Accounting for 20% of new infections amongst adults globally while in sub-Sahara Africa, adolescents and young girls account for 25% of new infections due to harmful gender norms and inequalities, obstacles to education and sexual and reproduction health, poverty and food insecurity and violence formed key drivers of this increased vulnerability.

4.5.3. Educational level of respondents

Another factor though mentioned in the above discussions was educational standards. Parlous institute (1990) noted that developing countries have lowest educational levels and may not even access the radios or television, making it difficult to receive adequate information about HIV/AIDS. Thus, study sought to determine the educational level of respondents as shown in the table 4.22.

Table 4.22 Educational level of respondents

Educational level	Frequency	Percentages
Primary	67	23.51
Secondary	116	40.70
College	60	21.05
University	30	10.53
None	12	4.21
Total	**285**	**100**

Table 4.22 shows the education level of the respondents, 67 (23.51%) had primary level of education, 116 (40.70%) had secondary level education, 60 (21.05%) had college level education, 30 (10.53%) had university level education and 12 (4.21%) had no education at all. The study findings revealed that the majority of the respondents had a primary and secondary

level of education compared to those who had attained college and university .Thus, low levels of education also corresponds to the low uptake of services such as the HCT and treatment and care of HIV. Bandura (1997), more educated people have control over their sexual behavior as they are more able to negotiate safer sex practices and thus leading to greater adoption of safe sexual behavior in response to the HIV epidemic.

4.6 Structural factor and behavior change.

Surmatojo, (2000), suggest that policies related to HIV have gone a long way in facilitating interventions that promote HIV behavior change leading to reduction in transmission of HIV infection .Policies may facilitate or inhibit HIV risk behaviors. WHO, (2015) stipulated that science, evidence and policy have opened up a unique opportunity to end AIDS epidemic by 2030 as part of sustainable developmental goals. So the researcher sought to understand the structural factor that influence behavior change in HIV infected patients.

Policies in most cases are formulated by governing bodies which are accompanied with access to justice and legal protection that will ensure reinforcement of the policy. There are policies on HCT services, use of ARVs, condom promotion and many others. In South Africa, the policy on provision of ARVs to all sex workers with HIV and offer daily oral pre-exposure prophylaxis (PrEP) to HIV negative sex workers has resulted to a tremendous reduction in the number of new infections and increased their lifespan by about 10 years. It's only through policies and laws that the risk and the marginalized population can be reached such as commercial sex workers, gays, the girls and young women,(UNAIDS,2013).Marston, et al (2006)revealed in an experience from Thailand that structural approach of intervention has increased condom use in sex work setting through the 100% condom use policy (CUP).It promoted condom use from 21% in early 90s to 95% in late 1990s and reduction in the incidence of HIV.

Table 4.23 Structural programs targeting at HIV infected patients.

Respondents	**Frequency**	**Percentage**

HIV counseling and testing	145	50.88
School based programs e.g. Sex education	41	14.39
Use of Peer Counseling as agent of behavior change	51	17.89
Use of behavior change communication programs	48	16.84
Total	**285**	**100**

The table 4.23 indicates that 50.88% of the respondents suggested counseling and testing while 14.39% of the respondents suggested school based program, 17.89% of the respondents showed the use of peer counselors as agents of behavior change and 16.84% of the respondents suggests use of behavior change communication programs targeted best at HIV positive patients. UNAIDS,(2010) in its Outlook Report showed that there are few programs that address the social and structural factors adequately in HIV prevention programs. The study findings suggests the effective programs targeting the HIV infected such as ;the counseling and testing programs, use of peer counselors as agents of behavior change, use of behavior change communication programs and school based HIV/AIDS programs. UNAIDS, in its outlook report cited the study conducted in India among the school children in an army Cantonment a health Education program(HEP) intervention was found .The program provided information and education on a range of safer sexual behavior as consistent with the current empirical evidence of the diversity of the people's sexual behavior.

Table 4.24 Respondent's views on HIV behavior change programs.

Respondents	**Frequency**	**Percentage**

Stigma reduction	22	7.72
Disclose of one's status	11	3.86
Safe sex practices	84	29.46
Counseling and testing be intensified	45	15.79
All of the above	123	43.16
Total	**285**	**100**

Table 4.24 showed that 7.72% of the respondents suggested the focus of behavior change programs be on stigma reduction 3.86% is on disclosure of one's status, 29.47% on use of safer sex practices, 15.79% should be on intensifying of counseling and testing of people while 43.16% suggested that the focus should be on all of the above responses.

Table 4.25 HIV risk reduction behavior change practices.

Respondents	**Frequency**	**percentage**
Delay of onset of first intercourse	30	10.52
Abstinence from sex	18	6.32
Having protective sex always	105	36.84
Faithfulness to your sexual partner	64	22.46
Reduction in number of sexual partners	42	14.74
Disclosure of one's status	26	9.12
Total	**285**	**100**

Based on the findings from the questionnaires, 10.52% of the respondents asserted that delay of onset of first intercourse was one of the behavior change practices, 6.32% saw abstinence from sex was one of the practices, 36.84% viewed that having protected sex always is a good practice of HIV behavior change while 22.46% preferred being faithful to your sexual partner, 14.74% of

the respondents said reducing the number of sexual partners and 9.12% said disclosure of one's status was a practice that showed HIV risk reduced behavior change.

4.7 Summary

The analysis done from this chapter revealed that behavior change in HIV infected patients was influenced by a majority of factors ranging from Biomedical strategies, Behavioral strategies, Socio-demographic and Structural factors.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the major findings, discussions, conclusions and recommendations .It presents suggestions for further research .The purpose of this study is to establish factors influencing behavior change among the HIV/AIDS infected persons in Bungoma County Referral Hospital ,Bungoma south Sub-county .The study was guided by the following research Objective: to assess how the biomedical interventions influence behavior change, to investigate how structural interventions influence behavior change and to establish how socio-demographic factors influence behavior change in HIV infected patients.

5.2 Summary of the findings

In the first objective, the researcher sought to find out the extent to which biomedical interventions influence behavior change among the HIV infected patients attending clinics in Bungoma county Referral Hospital (BCRH) Comprehensive care Centre (CCC).The biomedical interventions in this case included, use of ARVs, use of condoms and treatment of sexually transmitted infections (STIs).The use of ARVs has a significant influence on behavior change in HIV infected persons. From the research findings, it was observed as indicated in the table 4.6 that 74.44% of the respondents were using ARVs while only 24.56% of the respondents were not using. Out of those who were using the ARVs , 20% of the respondents had used ARVs for one to six months (1-6 months)21.86% had used the ARVs for six to one year,37.67% had used ARVs for two to five years while 20.47% had used ARVs for more than six years, thus most of the respondents had used ARVs for more than two years .On checking the index of sexual life in relation to the usage of ARVs, most of the respondents reported having moderately active sexual life at 42.33% followed by those who reported to be active at 38.6%. Those who were still very active were at 11.33% while those not active were at 7.91%. From table 4.9 about knowledge of condom use 95.44% which were majority of respondents knew why condoms were used by the HIV infected persons while only 45.65% did not know why the condom was to be used and the reasons given by the respondents were that the majority of 51.23% of the respondents said they prevent re-infection .29.12% said condoms prevent infections, 15.79% said condoms prevent STI, while 3.86% revealed that condoms prevent pregnancy. Pertaining the usage of condoms

,92.28% had used condoms while 7.72% had never used a condom and the a majority of the respondents (59.65%) who had used condoms had used them on non- marital sexual partner as was revealed in table 4.12 while only 40.35% had used condoms with their marital partners. Table 4.13 on prevalence of STIs in HIV infected patients revealed that 68.42% had never suffered from an STI which is a good pointer that the majorities were having protected sex and at the same time the ARVs had taken a good effect on their health by revitalizing their immunity thus offering resistance to infections.

The second objective sought to establish how the behavioral strategies influenced behavior change in HIV infected patients. The findings of the study revealed that, 87.02% of the respondents had ever been counseled and tested after being diagnosed of having HIV while only 12.98% had never been tested as revealed in Table 4.15 and the HCT had gone a long way in helping the continuum of care. As revealed in table 4.17, the majority of the respondents said, HCT helped them to live positively, 22.99% helped them to adhere to ARVs, and 14.11% helped them disclose their status while only 2.82% revealed that HCT helped them to access psychosocial groups. This is to show that HCT services really facilitate the uptake of HIV care by sensitizing the clients to be aware on those services. Pertaining education, 92.28% of the respondents agreed that education influences HIV behavior change while only 7.72% did not agree and of the 92, 28% who said education has an influence on behavior went further and indicated that education empowers one to make an informed decisions, it also improves the bargaining power on sexual matters, it also enables people to live positively and the majority sighted with all the alternatives. On behavior change communication, the majority revealed that peer education was the most effective mode of behavior change communication at a percentage of 34.39%, with media forming 29.12%, through HCT was 18.60% while school curriculum education indicated only 17.89% of the respondents.

The third objective, the researcher sought to understand how socio-demographic factors influence behavior change. The factors here included; gender, occupation and the educational standards. Table 4.21 revealed that the female gender was at higher risk of HIV infection compared to male gender; 63.51% and 36.49% respectively. On the same issue ,the researcher wanted to know why the female gender and male gender were at risk of infection and the responds were as stipulated in Table 4.22 and 4.23 that, females depend on their male partner for

a living ,females also have a low bargaining power on sexual issues ,that most women are illiterate or less educated and also most females are likely to indulge in commercial sexual work for a living ;42.54% ,27.62%,17.68% and 12.16% respectively. While men were sighted to be at risk also because 4.81% males are very mobile and like working away from their families, 10.58% said men have a greater control over their own sexual behaviors, 8.65% said men are the major decision makers in matters of health, 6.73% said men are highly educated and financially empowered compared to females and 69.23% revealed that all of the factors exposed the male gender to the risk of infection. From the findings, it is explicitly true that more educated people tend to change their sexual partners more frequently because they are mobile and they have greater control over their own sexual behavior.

The fourth objectives, the researcher sought to assess how the structural factors influence behavior change in HIV infected patients such as; policies, programs and economic resource factors. The respondents in Table 4.24 were asked to choose on the effective HIV programs that were asked to choose on the effective HIV programs that well targeted behavior change in HIV infected patients and 50.88% indicated counseling and testing, 17.89% revealed that use of peer counselors as agents of behavior change, 16.84% indicated that use of behavior change communication programs and 14.39% revealed that use of school based programs such as sex education. At the same in Table 4.25, the respondents were asked on their opinion of where the focus should concentrate in developing the issue of behavior change programs .some indicated that the focus should be on stigma reduction 7.72%, disclosure of one's status 3.86%, HCT 15.79%, use of safer sex practices 29.47% and most of the respondents sighted all of the above at 43.16%.The then did not stop at that ,went further to find out if the respondents knew some of the HIV risk reduction behavior change practices where the respondents revealed in Table 4.26 that , delay of onset of first intercourse 10.52% abstinence from sex had 6.32% having protective sex always was at 36.84%, faithfulness to the primary sexual partner 22.46% reduction in number of sexual partners was 14.74% and disclosure of one's status formed 9.12% of the respondents. This showed that almost every respondent had a clue on what HIV risk reduction behavior change practices were.

5.3 Conclusion

Conclusions were drawn based on the findings of the study:

The biomedical strategies that influenced behavior change among the HIV infected patients were that, the use of ARVs could influence the spread of HIV through changing behavior and through biological channels by reducing infectiousness of those on treatment and keeping more people who are HIV positive alive. The increase in taking risk of those on ARVs can directly increase new infections by increasing those who put themselves at risk; however, it can indirectly decrease the rate of new infections as a larger fraction of the pool of potential sexual partners is HIV negative. The consistent and correct use of condoms in combination with the behavioral approach labeled as ABC should be emphasized as it forms a range of prevention option for all ages covering full spectrum of sexual behavior. The treatment of STIs should not be underestimated in the influence of HIV behavior change since their presence and treatment may be a pointer to behavior change

The behavioral strategies in combination with other strategies go a long way in influencing HIV risk reduction behavior .The HCT services has seen many people knowing their HIV status, linking them to the appropriate services as they create awareness of all the HIV services available and support them in demanding for the services thus increasing uptake of the services. Information giving in terms of education has empowered many HIV infected patients to live positively and negotiate for safer sexual practices thus improving their health seeking behavior. Behavior change communication is paramount in conveying the appropriate messages that could be people centered as they respond to the AIDS epidemic.

The socio-demographic factors that influence behavior change in this study focused on the gender, Education standard and the occupation of the HIV infected patients attending their HIV care clinics in Bungoma County Referral Hospital Comprehensive care center. All these factors complement each other in their influence of behavior. There was no particular gender that was not at risk of being affected by HIV infection though the female gender was more vulnerable to the risk of HIV infection may be because of the low educational standards and as most of them depend on their male partners for a living hence men find a loophole in domineering them in making decisions even pertaining their own health. Due to their low education standards, they are not able to negotiate for safer sex practices and they are forced to lie low even if it means being infected. Most men have high educational standards and financially empowered hence

have control over their own sexual behavior. Occupation has a lot of influence on an individual's sexual behavior .Commercial sex workers who mostly are women have very low educational standards also, thus they are not able to bargain for protected sex as their customers dictate terms of service for them no matter the clients status. UNAIDS(2000) noted that sexual behavior is the most important factor influencing the spread of HIV in the world, and this behavior varies greatly across cultures, age groups, socio-economic status and even gender is at risk of being infected although in different percentages

The structural factors such as policy/laws and HIV programs also do have a remarkable influence on HIV behavior change. Policies help facilitate interventions that promote behavior change leading to a reduction in transmission of HIV while behavior programs target to promote accurate individual motivation onto avoiding risk behavior. These programs also build individual skills needed to use to effectively negotiate risk situations as they target individuals, families, communities and entire societies. Most of them especially those that target families aim at decreasing the stigma associated with HIV and those at the community level seek to increase the value associated with safer behaviors to support community member to reduce their risk and build solidarity.

5.4 Recommendations

Based on the foregoing discussions of the findings and conclusions, the following implications and recommendations are offered to the Hospital managers and the CCC departmental head in order to assist them.

- In objective one, the study found that 74.44% of the infected patients use ARVs as shown in the table 4.2.To maintain zero new infections rate and zero AIDS related deaths, there's need for sensitization of people in the use of ARVs to prolong life of those infected, in order to realize the vision 2030.

- Sexual behaviors that course most of the HIV infection worldwide occur for many and diversified reasons hence strategies need to be sophisticated and be combined in order to combat the epidemic. No one strategy can address the HIV saga per-see. One risk reduction strategy should not be over-emphasized over the others since people like choices and the mix of strategies for example education should not be over-emphasized over HCT.

- There is need for a people centered response to the AIDS epidemic that removes obstacles in the path of people's access to prevention and treatment services which should be appropriate to people's needs so that we can end the AIDS for everybody
- HIV related behavior change policies and programs need to target the multiple levels including individuals and the environment that influence their behavior.

5.5 Suggestions for further research

To bring more light into the issue investigated in this study, the researcher suggests that the following studies be conducted,

- A similar study covering the whole of Kenya to find out if the findings reached here hold true for the whole republic
- A comparative study to be carried out in another equally busy comprehensive care clinic but in any other county to establish the influencing factors of HIV behavior change in infected patients.

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APPENDIX 1: QUESTIONNAIRE

SECTION A: BACKGROUND INFORMATION

Please tick appropriately.

1. Gender

   a) Male ( ) b) Female ( )

2. Age

   i) 0-14 ( )

   ii) 15-24 ( )

   iii) 25-above ( )

3. Education level

   Primary ( ) Secondary ( ) College ( ) University ( ) none ( )

SECTION B: BIOMEDICAL STRATEGIES AND BEHAVIOR

4. a) Have you started using ARVs? i) Yes ( ) ii) No ( )

   b) If yes when did you start using ARVs?

   i) 1-6 months ago? ( )
   ii) 6 months-years ago? ( )
   iii) 2-5 years ago? ( )
   iv) 6 years and above? ( )

5. since then how has been your sexual life?

   i) Active ( )
   ii) Moderately active ( )
   iii) Very active ( )
   iv) Not active ( )

6. a) Do you know why a condom should be used by a HIV infected patient?

Yes ( ) No ( )

b) If yes, why? (Tick the most appropriate answer)

i. To prevent infection ( )
ii. To prevent re-infection ( )
iii. To prevent STIs ( )
iv. To prevent pregnancy ( )

7. a) Have you ever used a condom?

i) Yes ( ) ii) No ( ) ii) Not applicable ( )

b) If yes, how often?

i) Sometimes? ( )
ii) Always? ( )
iii) Frequent? ( )
iv) More often? ( )

8. With whom do you like using a condom with?

i. Marital partner ( )
ii. Non-marital partner ( )
iii. Not applicable ( )

9. a) Have you ever suffered from an STI since you were infected with HIV?

Yes ( ) No ( )

b) If yes, specify…….

i. Syphilis ( )
ii. Gonorrhea ( )
iii. Urethritis ( )
iv. Genital herpes ( )
v. Others specify…….

SECTION C: BEHAVIORAL STRATEGIES AND BEHAVIOR CHANGE

10. a) Have you ever gone for HIV counseling since you were diagnosed to be HIV positive?

Yes ( ) No ( )

b) If yes, tick which type of counseling?

i. Individual counseling ( )
ii. Group counseling ( )
iii. Couple counseling ( )

11. a).Was the counseling of any help?

Yes ( ) No ( )

b) If yes, how……..

i) Helped me disclose my status ( )

ii) Helped disclose ART status ( )

iii) Helped me to adhere to ARVs ( )

iv) Helped me live positively ( )

v) Helped me to know my partner's status ( )

vi) Helped me access a psychosocial group ( )

SECTION D: SOCIO-DEMOGRAPHIC FACTORS AND BEHAVIOR CHANGE

12. Have you ever had sex?

Yes ( ) No ( )

13. How old were you when you had sex for the first time?……

i. (0-14) years ( )
ii. (15-25) years ( )
iii. (26-35) years ( )
iv. (35 and above) years ( )

14. How many sexual partners do you have?.....

i. One partner ( )
ii. Two partners and more ( )

15. Do you ever want to know the HIV status of your sexual partner before engaging in a sexual activity?

Yes ( ) No ( )

a) If yes why?
b) If no why?

16. Which gender is at risk of HIV infection?

Female ( ) Male ( )

17. If female, why?

i) Most of them are illiterate or less educated ( )

ii) They have low bargaining power on sexual matters ( )

iii) Most of them have low socio-economic status ( )

iv) They are likely to indulge in commercial sexual work ( )

v) All of the above ( )

18. If Male, why?

i). They are the decision makers in matters of health ( )

ii).They have greater control over their own sexual behaviors ( )

iii).Most of them are highly educated and financially empowered ( )

v) They are very mobile and like working very far from their family ( )

SECTION E: STRUCTURAL FACTORS AND BEHAVIOR CHANGE

19. In your opinion, HIV behavior change efforts focus on? (Tick any appropriate answer)

i. Delaying the sexual onset of sexual intercourse ( )
ii. Promoting abstinence ( )
iii. Decreasing frequency and number of sexual partners ( )
iv. Use of condom ( )
v. Treatment of sexually transmitted infections (STIs) ( )
vi. All of the above. ( )

20. Which of the following behavioral programs targeted at the HIV infected patients is the most effective? (Tick only one)

i. HIV counseling and Testing ( )
ii. School based programs like being taught about HIV in schools ( )
iii. Use of peer counselors as agents for behavior change ( )
iv. Behavior change communication programs ( )

v. Others (specify)……

21. Which of the following statements best describes the HIV behavior change practices?

i) Delaying onset of first intercourse ( )

ii) Abstinence from sex ( )

iii) Having protective sex always ( )
iv) Faithfulness to your sexual partner ( )
V) Reduction in number of sexual partners ( )
vi) Disclosing your status to your sexual partners ( )

APPENDIX 2: LETTER OF TRANSMITTAL

To

The Medical Superintendent,

Bungoma County Referral Hospital

P.O. Box 14-50200,

Bungoma.

13th of April 2016.

Thro,

The Nursing Officer In-Charge.

Dear Sir/Madam,

RE: REQUEST TO CARRY OUT RESEARCH IN YOUR FACILITY

I am a postgraduate student at the University of Nairobi pursuing a course in Masters of Arts in Project Planning and Management. I am required to conduct a research of which I have chosen the Comprehensive Care Clinic in Bungoma County Referral Hospital as my area in studying factors influencing behavior change among the HIV infected patients attending their clinics in your facility.

I therefore seek your permission to collect data on the same.

Thanks in advance

Yours faithfully,

Anne N. Wakora.

REG. NO. L50/77503/2015.

APPENDIX 3: LETTER TO RESPONDENT

ANNE N. WAKORA,

BUNGOMA COUNTY REFERRAL HOSPITAL

P.O. BOX 14-50200,

To my Respondents,

I am Anne Wakora pursuing Masters Programme in Project Planning and Management in the University of Nairobi. Kindly help me by filling in the questionnaire to enable my Research project to run smoothly. The aim of this study is to assess the factors influencing behavior change in HIV infected patients in Bungoma County Referral Hospital in Bungoma County, Kenya. You are kindly requested to be very honest with your answers and you are required not to write your names and any information given by you, will be treated with utmost privacy and confidentiality. The responses will not be discussed with your health service providers or any member of your family or friends. Your co-operation will be highly appreciated because it will lead to the success of this study.

Thank you.

Yours sincerely,

Anne N. Wakora.

APPENDIX 6: LETTER OF AUTHORIZATION

APPENDIX: TABLE 1

DETERMINING SAMPLE SIZE FOR RESEARCH ACTIVITIES

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	140	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note: "N" is population size

"S" is Sample size

Source: Krejcie & Morgan (1970)