THE DETERMINANTS FOR ACCESS AND USE OF REPRODUCTIVE HEALTH INFORMATION AMONG TEENAGE GIRLS IN KAPTEMBWO, NAKURU COUNTY, KENYA

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DECLARATION AND RECOMMENDATION

Declaration

I declare that this thesis is my original work and has not been presented in this or any other university for the award of a degree, diploma or certificate.

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Recommendation

This thesis has been submitted with our approval as University supervisors.

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DEDICATION

This thesis is dedicated to my family, relatives, colleagues and friends for their financial and moral support that they accorded me during the period I was writing it. It is also dedicated to my loving grandmother, Mrs. Sigei Rosemary, for her encouragement, advice and moral support.

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ABSTRACT

The Government of Kenya, through the Ministry of Health and other relevant stakeholders, have tried to enhance the reproductive health status of all Kenyans especially to the vulnerable groups like teenage girls. Despite this initiative, there is still increase in early pregnancy, abortion, STIs including HIV/AIDs, school dropouts and single parenting among teenage girls in informal settlements in Kenya. The aim of the study was to establish the determinants for access and use of reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya. The objectives of the study included: to establish the sources of information on reproductive health, to investigate the socio-economic factors affecting access to reproductive health information and to determine the effectiveness of approaches used in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya. The study was guided by Wilson's General Model of Information Behaviour. Data was collected from a sample of 127 teenage girls aged between 13-19 years from Nakuru West Secondary School, Kaptembwo Primary School and Youth for Christ Group Nakuru. The study employed descriptive survey design. Purposive sampling technique was used to identify respondents for the study. Quantitative data obtained through the use of questionnaires was analysed using Statistical Package for Social Sciences (SPSS) version 21 software. Qualitative data was analysed using narrative statements based on relevant thematic areas. The results obtained from Kaptembwo showed that more than half of the teenage girls reported that they received their information on reproductive health from their peers. It also appeared that the teenagers with a higher level of education accessed reproductive health information more than the teenagers with a lower level of education. Teenagers with parents with formal employment also had a higher access to reproductive health information. Based on the findings, the study recommended that, sex education should take place both at home and in school, national government and county government should fund family planning programmes to ensure that any teenage girl, regardless of income, has access to reproductive health information and services. The study concludes that determinants (sources of information on reproductive health, socio-economic factors and approaches used in accessing reproductive health information) have been found to be interacting with access and use of reproductive health information by teenage girls.

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ABBREVIATIONS AND ACROMYMS

AIDS	Acquired Immunodeficiency Syndrome
CRC	Convention on the Rights of the Child
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
KNCHR	Kenya National Commission on Human Rights
KSPA	Kenya Service Provision Assessment
MOH	Ministry of Health
MOMS	Ministry of Medical Services
MOPHS	Ministry of Public Health and Sanitation
NRHS	National Reproductive Health Strategy
RH	Reproductive Health
RHI	Reproductive Health Information
RSH	Reproductive and Sexual Health
STI	Sexually Transmitted Infections
UNFPA	United Nations Funds for Population Activities
UNHCR	United Nations High Commission for Refugees
USAID	United States Agency for International Development
W H O	World Health Organization

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Reproductive health (RH) is a state of complete physical, mental and social well-being (not merely the absence of reproductive disease and infirmity) in all matters relating to reproductive system, its functions and processes. Such matters relating to reproductive health include promotion of responsible and healthy reproductive behaviour, management and prevention of sexually transmitted infections (STI) including HIV/AIDS, having safe sexual experiences, which are free from discrimination and management of complications that may arise due to abortion (World Health Organization, 2011). Sexual and reproductive health is made of family planning, antenatal care, safe delivery and post natal care, prevention and treatment of infertility, prevention of abortion and management of consequences of abortion, treatment of reproductive tract infection, prevention, care and treatment of STIs including HIV/AIDs and information, education and counselling (World Health Organisation, 2004).

A teenager, or teen, is a person who falls within the ages of thirteen-nineteen (13-19) years old. During this age, teenagers develop biologically and psychologically as they move towards independence. This period is associated with risk taking and experimental behaviour, which makes teenage girls exposed to sexual and reproductive health complications (WHO, 2004). Meena, Anjana, Jugal, & Gopal, (2011) stated that early child-bearing remains to be an obstacle to developments in the enlightening, economic and social status of women in all parts of the world. Early parenthood can severely limit learning and employment chances. This impacts on the quality of teenager's lives and the lives of their children. It can therefore be clearly seen that reproductive health information is a very important factor in the lives of teenagers. Meena *et al.* (2011) further explains that, good reproductive health should include freedom from risk of sexually transmitted diseases, the right to regulate one's own fertility with full knowledge of contraceptive choices and the ability to control sexuality without discrimination because of age, marital status, income or similar considerations.

Globally, there are existing barriers in accessing reproductive health information. They include poor access, availability and acceptability of the services, lack of clear directions and services, lack of privacy, appointment times that do not accommodate teenage girls' little or no accommodation for walk-in patients, limited services and contraceptive supplies and options calling for referral (WHO, 2004). Adolescents globally feel embarrassed when

seeking for information on reproductive health and are more likely to seek information and services after sexual exposure (Hocklong *et al.*, 2003).

The 1994 International Conference on Population and Development (ICPD) set the stage for putting teenagers' sexual and reproductive health (SRH) on the international agenda. During the conference, it was realised that existing health, education and other social programmes had largely ignored reproductive health needs of young people (MOH, 2005). The conference adopted a plan of action which formed the basis for programmes addressing the SRH needs of adolescents globally. The five-year progress review of this plan (ICPD +5) made a further call for countries to ensure that adolescents have access to user friendly services that effectively address their sexuality, education and counselling and health promotion activities while encouraging their active participation (WHO, 2004). Information on reproductive health needs to be made available to teenage girls to help them to understand their sexuality and protect them from unwanted pregnancies and sexually transmitted infections. Teenage girls have a right to access all the reproductive health services without any discrimination in the society.

The ICPD further highlighted the vulnerabilities of adolescents and called for greater recognition of teenagers as a special category with special needs. It emphasised the need to provide adolescents with reproductive health information. Additionally, the ICPD raised the need to remove social barriers that hinder adolescents in accessing reproductive health services (Germain, 2000). ICPD suggested that teenage sexual and reproductive health issues are addressed through the elevation of accountable and healthy reproductive and sexual behaviour, including voluntary abstinence and the establishment of suitable services and counselling precisely suitable for that age group (WHO, 2004). ICPD emphasised on accessibility of reproductive health information among the vulnerable groups like teenagers but did not clearly show if there are some other factors hindering teenagers from accessing this information. This study therefore comes in to bridge the knowledge gap.

According to a study done by Lukale (2015) on adolescent reproductive health concerns in Sub-Saharan Africa, teenagers have specific reproductive health vulnerabilities. These vulnerabilities include high adolescent birth rate, kidnapping, destructive traditional practices (such as female genital mutilation), unwanted pregnancies, abortions and Sexually Transmitted Infections (STIs). These young people need access to sexual and reproductive health information and services so that they can prevent unintended pregnancy and decide if

and when to have children. Most teenagers engage in sexual activities because they lack support from their parents concerning reproductive health issues. Some teenagers may be forced to drop out of school because of unplanned pregnancies. Teenage girls are at high risk because they might also expose their children to malnutrition which may lead to death. Lukale (2015) identified specific reproductive health vulnerabilities faced by teenage girls but there is no clear picture if these vulnerabilities are caused by not accessing reproductive health information.

In Kenya, adolescents face several reproductive health challenges. These include early pregnancy which is mostly unwanted, complications of unsafe abortions and complications of pregnancy and childbirth. Adolescents lack easy access to quality and friendly healthcare, prevention and treatment of sexually transmitted infections (STI), safe abortion services, antenatal care and skilled attendance during delivery, which result in higher rates of maternal and perinatal mortality (Kenya National Commission on Human Rights (KNCHR), 2012).

The Ministry of Health in Kenya formally approved the country's first National Reproductive Health Policy (NRHP, 2003) to help in providing a framework for equitable, efficient and effective delivery of quality reproductive health services to the population, especially those considered vulnerable such as teenagers. In pursuit of reproductive health agenda which was deliberated in ICPD 1994 held in Cairo, the government of Kenya adopted the National Reproductive Health strategy (NRHS, 1997-2010). The aim of the policy was to identify reproductive health priority areas as; family planning, safe motherhood, child survival initiatives, promotion of adolescent and youth reproductive health, management of STIs including HIV/AIDs, management of infertility, harmful practices like early and forced marriages, Female Genital Mutilation (FGM), drug and substance abuse (MOH, 2005).

The existing policies and services are unable to meet the diverse needs of adolescent health and development. The available evidence from literature suggests that when in need, many adolescents do not seek care from the available public health services and that the services are often not geared to respond to the special needs of adolescents. Even where they are accessible, information and services they offer is not utilised because of lack of privacy, confidentiality, a dull facility environment or judgmental attitude of providers (WHO, 2004).

Teenagers need to be engaged in all matters relating to sexual and reproductive health to help them gain information that will help them make informed decisions. The Ministry of Health has tried to help in providing a framework for equitable, efficient and effective delivery of

quality reproductive health services to all teenagers. Many teenagers can still not access this information due to some factors. However, this study comes in to fill the gap by looking at socio-economic factors, sources of reproductive health and approaches as determinants of access and use of reproductive health information among teenage girls.

The youths in Nakuru County, like their counterparts in Kenya, have a range of issues and challenges related to reproductive health, mainly teenage pregnancies, abortions, school dropout, drug and substance abuse and sexual violence Kenya Service Provision Assessment (KSPA) (2010). In Nakuru County, other than the government of Kenya, Non-Governmental Organisations (NGOs) have also put a lot of effort to increase access and use of reproductive health services among young people through various initiatives. For example, Family Health Options of Kenya (FHOK) has started various Youth Friendly Reproductive Health Services (YFRHS).

Kaptembwo is one of the largest informal settlement areas located to the west of Nakuru, Kenya with a population of approximately 140,000 people (Municipal Council of Nakuru Strategic Plan, 2007). It is a cosmopolitan ward hosting various races and tribes in Kenya. The causes of poverty in Kaptembwo include un-employment, landlessness, lack of water, insecurity, lack of basic services like health and education facilities and poor social services. HIV/AIDs pandemic has also contributed significantly to the high levels of poverty. There is much congestion as many people like a family of ten people living in one room. There is lack of learning facilities, high level of alcoholism, poor drainage system often with open sewage running down the road and poor refuse disposal (Municipal Council of Nakuru Strategic Plan, 2007). Teenagers living in informal settlements like Kaptembwo face challenges as they transition to adulthood in a hostile environment. These challenges are characterised by high levels of joblessness, criminality, poor sanitation, poor education facilities and lack of recreational facilities and early child bearing. In relation to Kaptembwo, teenagers need to have access to proven-effective sexual and reproductive health (SRH) interventions such as comprehensive sexual health education and counselling, access to condoms, contraceptives and HIV tests.

The persistence of reproductive health related problems among adolescents globally, and regionally that has been revealed from the literature also apply to Nakuru, Kenya. It is against this background that this study aimed to establish the determinants for access and use of reproductive health information among teenage girls.

1.2 Statement of the Problem

Kaptembwo ward is one of the largest informal settlement areas located to the west of Nakuru County. It is characterised by high level of unemployment, early child bearing, early marriages, sexual violence and high level of alcoholism. The high level of poverty in Kaptembwo ward limits access to basic facilities including health care facilities. Further, socio-economic status of teenage girls in Kaptembwo mirrors lack of knowledge and information about reproductive health matters relating to their bodies. These highlight a dire need of reproductive health information and services for teenage girls. The Government of Kenya, through the Ministry of Health and other relevant stakeholders, have tried to enhance the reproductive health status of all Kenyans especially to the vulnerable groups like teenage girls through policies, legislations and targeted interventions to enhance equitable access, quality, efficiency, and effectiveness of reproductive health services. Despite this initiative, there is still an increase in early pregnancy, abortion, STIs including HIV/AIDs, school dropouts, poor performance, psychological trauma, single parenting and gender-based violence among teenage girls. In connection with the determinants of access and use of reproductive health information among teenage girls in Kaptembwo as an informal settlement, we noted that these are unknown. Therefore we located our academic gap of investigation in this study here.

1.3 Objectives of the Study

This study was guided by the following objectives:

i) To establish the sources of information available on reproductive health for teenage girls in Kaptembwo, Nakuru County, Kenya.

ii) To investigate the socio-economic factors affecting access to reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya.

iii) To determine the effectiveness of the approaches used in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya.

1.4 Research Questions

This study was guided by the following research questions:

i) What are the sources of information available on reproductive health for teenage girls in Kaptembwo, Nakuru County, Kenya?

ii) How do socio-economic factors affect access to reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya?

iii) Are the approaches effective in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya?

1.5 Significance of the Study

The results of this study have both theoretical and practical implications for future access and use of reproductive health information among teenage girls. The findings will benefit the policy makers to inform decision making in implementing reproductive health policies targeting teenage girls. It is also expected to benefit the researchers in identifying important areas in which to carry out more detailed research on reproductive health and also help them to add to existing literature. The information generated will help the County government of Nakuru and other stakeholders in improving the training of healthcare workers. The training will help healthcare workers to learn the strategies to be used in delivering information on reproductive health to teenage girls in a confidential way. The findings also are expected to benefit healthcare planners in Nakuru County by utilising information on reproductive health to improve on service delivery to teenage girls. Teenage girls too are expected to benefit from the awareness driven by the healthcare workers. The findings of the study are also expected to be helpful to parents because they will use information on reproductive health to support teenage girls in understanding the risks associated with sexual behaviour.

1.6 Scope and Limitations of the Study

This study was carried out in Kaptembwo, Nakuru County, Kenya. It was conducted in Nakuru West Secondary School, Kaptembwo Primary school and Youth for Christ Group, Nakuru. The respondents comprised teenage girls aged between 13-19 years. Kaptembwo was chosen because it is an informal settlement that captures the character and cosmopolitan nature of Nakuru County plagued by challenges such as unemployment, violence, high school dropout rates and drug and substance abuse in which teenage girls are predominantly involved. The study focused only on the determinants of access and use of reproductive health information which include: selected socio-economic factors (education, income, poverty and place of residence), sources of information on reproductive health and approaches used in accessing reproductive health information among teenage girls.

The study focused on teenage girls between 13 years to 19 years of age. It has not attempted to make generalisations of the findings with respect to teenage boys or teenage girls below 13 years or above 19 years. Since Kaptembwo is a unique informal settlement with particular economic, social and cultural problems, one notable challenge was contacting the teenage

girls who operated in the youth group. The challenge was solved by the researcher's established contacts with the local administration that provided network and communication support.

1.7 Definition of Terms

Accessibility – This refers to the ease where teenage girls can gain access to or approach information sources and use that particular information to satisfy their needs.

Challenge - is the situation of being faced with something that needs great mental or physical effort in order to be done successfully and therefore tests a person's ability.

Counselling - This is a process of helping teenage girls towards overcoming obstacles to personal growth and helping them to understand their situations in a realistic manner in order to make informed decisions.

Determinant- This is something that controls or affects what happens in particular situation for example socioeconomic factors like poverty is the main determinant of how reproductive health information is used.

Health - This is a state of complete physical, mental and social well-being and not merely the absence of disease, or infirmity.

Informal settlement- This is an urban settlement characterized by the following: inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding and insecure residential status.

Information - is data that is accurate and timely, specific and organised which can affect behaviour, a decision or an outcome.

Information access - is the process of ensuring that the required information is made available to all people including teenage girls.

Reproductive Health – This is state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity, in all matters related to the reproductive system and to its functions and process.

Reproductive health care - is the type of health care service relevant for sexual and reproductive health which includes sex education, contraception, protected sex, STI screening and treatment and maternity services.

Sexual rights - Sexual rights include right of all young people to the highest attainable standards of sexual health, i.e. access to sexual and reproductive health care services and access to information related to sexuality.

Sexuality – Sexuality includes the way in which the media, family, friends, religion, age, life goals, and our self-esteem shape our sexual selves.

Social factors- These are facts and experience that influence teenage girls' personality, attitudes and lifestyles.

Socio-economic factors- These are the social and economic experiences and realities that help mould one's personality and life style.

Teenage girls - They are adolescence girls between the ages of 13-19 years.

CHAPTER TWO
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This section examined the works related to sources of information on reproductive health, socio-economic factors on access to reproductive health information and approaches used in accessing reproductive health information among teenage girls. It also discussed the theoretical and conceptual frameworks that were used to guide this study.

2.2 Sources of Information on Reproductive Health

Information source can be physical or digital entities in a variety of media providing potential information. An information source contains relevant information whereas channel guides the user to pertinent sources of information. For the purpose of this study, sources of information on reproductive health included parents, religion and culture, peers, mass media and health care workers.

2.2.1 Parents

Parents and members of the family are significant sources of knowledge, beliefs and attitudes for teenage girls. They are role models who shape young people's perceptions and influence the choices that teenagers make about their sexual behaviour (Zhang, Li & Shah, 2007). Youth-serving agencies and medical professionals recognised the important role that parents play in the lives of teenagers. However, many believe that confidential access to sexual health services is essential for teenagers who are or are about to become sexually active. Some teenagers might avoid seeking reproductive health information and STI services if they are forced by healthcare workers to involve their parents. In Boonstra and Jones' (2004) study, teenagers may avoid seeking advice from their parents and this will hinder them from accessing relevant information on reproductive health. According to Boostra and Jones (2004), parents are significant sources of reproductive health. However, little is known whether parents feel comfortable in discussing reproductive health information with their teenage girls. Besides, parents may also lack adequate information or are incorrectly informed.

This study agreed with Kamrani, Sharifa, Hamzah & Ahmad (2011) observations that sources of sexual and reproductive health information are categorised into six levels: the first level source of information are mothers, second level are siblings, third level are fathers, fourth level are friends, fifth level are teachers and sixth level are books/ internet. Because of

cultural beliefs, teenage girls are not supposed to talk anything about sexual and reproductive information with their parents, but they prefer discussions with their friends. Therefore, friends could increase accessibility on reproductive health information, but other factors could be a barrier like socio-economic factors and the effectiveness of the approaches used.

Generally, parents have authority to make health decisions on behalf of their teenagers, grounded on the principles that young people lack the maturity and decision to make fully knowledgeable decisions before they mature. Parents are the most trusted entities in the lives of teenagers (Zhang, Li & Shah, 2007). Based on research done in Ethiopia on Adolescent-parent communication on sexual and reproductive health issues among high school students, it was found that parents need to be close to their teenagers so that they can share any information concerning sexuality.

Teenagers need guidance as they transition from childhood to adulthood and therefore parents need to be close to them to help them make the right decisions in their lives. Parents have significant potential to reduce sexual risks behaviour and promote healthy teenagers' sexual evolution. Parents can realise this potential through communicating with their teenagers about sexual behaviour and decision-making (Ayalew, Mengistie, & Semahegn 2014). Parents need to be close to their teenagers so that they can help them solve the challenges arising in their day-to-day lives. Li, Shah and Zhang (2007) assert that parents are the most trusted people in the society to pass any information on reproductive health to their children. However, it is not clear whether the information on reproductive health given by parents is relevant, accurate and encompasses a narrow or wide range of reproductive health topics.

2.2.2 Religion and Culture

Generally, teenagers feel that religion has no impact on their daily lives, and none say that they have gained any useful information about sexual and reproductive health at the church (Nobelius *et al*., 2010). The Catholic Church, however, appears to have a confounding role in the promotion of safer sex messages for example abstinence for all teenage girls is encouraged without allowing them to use condoms. Health care providers need to remain aware that teenagers and their parents may hold different religious beliefs. This can be particularly relevant for teenagers living in rural communities, where the health care provider may know the teenagers and their family and make assumptions about their religious or cultural beliefs (Dickens & Cook, 2005). Some communities have different beliefs and they prefer only parents to pass information on sexual and reproductive health. Some parents

believe that a different person may mislead their teenagers. Religion discourages the use of family planning methods and this may increase the risk like unwanted pregnancies, school dropout and abortion among teenage girls.

Margaret and Thomas (2005) in their work on religion, reproductive health and access to services states that American women believe that catholic religious teachings should not be allowed to impact the kind of services available in the community and clinical settings. Moreover, despite the efforts that engage religious leaders and heath care workers to promote reproductive health service, little is understood about their influence on teenage girls' knowledge and attitude towards reproductive health information and services.

A study done in South Africa on cultural clashes in reproductive health information in schools explains perceptions about reproductive health information among school teachers and learners in a rural area. Teachers are forced to wear a mask when it comes to educating youngsters about sexuality. Metaphorical language for genital organs and sexually related activities had hidden meanings in passing such messages to the entire group (Mbananga, 2004). Language is clearly crucial in the construction of sexual and reproductive health information. Accepted language should be used in the community. Education around HIV/AIDs epidemic and the provision of information on reproductive health are perceived as unethical issues among female teachers since it involved talking to children about sexual intercourse. Mbananga (2004) further argues that language is a barrier in communicating reproductive health information among teenage girls. Despite the sensitivity of reproductive health issues, there is increasing consensus and acknowledgement that it is important to institute effective sex education programmes to equip teenage girls with reproductive health information and skills to help them make informed decisions on reproductive health.

2.2.3 Peers

The peer group is the only place where majority of teenagers feel they can openly discuss, and debate information gathered from other sources (Nobelius, 2010). Teenagers prefer sharing any information on sexual and reproductive health with their friends because they will learn from one another and make the right decision concerning their sexual health. Sex related matters among teenagers are discussed mostly with age-mates because they trust them, and they may lack confidentiality among other people especially parents (Kennedy, Bulu, Harris, Humphreys, & Malverus, 2014). Teenagers who are 13 years may have limited knowledge on sexual and reproductive health as compared to 19 years old. Therefore, they

will share information with other teenagers to help them prevent adverse consequences of sexual activity.

A study done by Senderowitz (2003) on rapid assessment of reproductive health services concluded that youths do not seek care due to national laws and policies restricting care based on age and/or marital status, poor understanding of their changing bodies and insufficient awareness of risks associated with STIs, including HIV/AIDs and early pregnancy. Kennedy *et al.* (2014) posit that age is a factor that hinders teenage girls from accessing reproductive health information. In other studies, peers were principal sources of reproductive health information. However, little is known about the judgment of teenage girls concerning reliability of their sources of reproductive health.

2.2.4 Mass Media

Kibombo, Musisi and Neema (2014), reveals that mass media such as press, magazines, radio and television broadcast are among the factors that influence access to information on sexual and reproductive health. There are a number of programmes targeting teenagers that are aired on radio and television related to teenagers' sexual and reproductive health. Teenagers find it easy to access sexual and reproductive health information through mass media like listening to some programmes about sexual and reproductive health on radio and also watching some selected television programmes that educate them on sexual and reproductive health. Teachers and parents provide information mainly on topics with less cultural taboos, such as knowledge about puberty because they are the most trusted entities (Li, Shah & Zhang, 2007). Teenagers find it easier watching some programmes in the absence of their parents and this helps them to discuss with their friends. Magazines are favourite and most young people, especially teenagers, read more on sexual behaviour, which may influence them. Previous studies have indicated that media were the principal sources of reproductive health information. However, little is known about the views of teenage girls concerning credibility of their sources of reproductive health information.

2.2.5 Health Care Workers

The literature showed that health care providers have found that adolescents do not seek health care because of the following reasons: concern about confidentiality, lack of trust in healthcare providers, embarrassment, lack of awareness and knowledge of services and lack of knowing how to access services (Jarret, Dadich, Robards, & Bennett, 2011). Health care workers need to be knowledgeable, non-judgmental and confidential. They should allow

adequate time for consultation on issues regarding information for sexual and reproductive health. It is for local authorities, working with health and other associates, to carry on taking the lead in the reduction of teenage pregnancies (Goicolea, 2010). Health care workers need to be close to teenagers and share any information concerning sexuality. Some teenage girls may be free in discussing sexual matters with their health care workers than their parents. Despite the effort that engages health care workers in promoting reproductive health information, little is understood about the quality and accuracy of teenage girls' knowledge, attitudes and preference of health service providers for reproductive health.

2.3 Socio-Economic Factors on Access and Use of Reproductive Health Information

Factors are the circumstances, fact or influence that contributes to a result or an outcome. Socio-economic factors are those factors that are concerned with the interaction of social and economic experiences and truths that aid in moulding one's character, attitudes and lifestyles. Selected socio-economic factors (in the current study) included: education, income, poverty and place of residence).

2.3.1 Education

Education provides knowledge and life skills that allow better educated people to increase access to information and resources to promote health (Adler & Newman, 2002). Education empowers young people to think critically and positively and increase their confidence to communicate and solve problems (Sandi, 2011). Education helps in developing capacity of teenage girls to understand their reproductive health in the context of access and use of information on reproductive health. Sexual and reproductive health is among the most fundamental aspects of life. Sexual health is about the enhancement of life and personal relations and not merely counselling and care related to reproduction and STIs. Teenagers have limited knowledge about sexual and reproductive health and know little about the natural process of puberty. This lack of knowledge about reproductive health may have grave consequences. At present, because of civilization, urbanization and change in lifestyle and education, the health of teenagers is a critical issue that requires attention. Sexually transmitted infections, including HIV/AIDS and other reproductive health problems are the greatest threats to their well-being (Shiferaw, Alemu, Assefa, Tesfaye & Amare, 2014). A study in Cambodia on youth friendly services showed that the barriers to youth access to reproductive health services include lack of confidentiality, shyness, poor relations with health staff, illiteracy and low prioritization by parents for reproductive health services (ADRA, 2007). Previous studies have demonstrated that education empowers young people

and increases the knowledge on reproductive health. However, this study comes in to fill the gap by looking at the relationship between education as a socio-economic factor and access to reproductive health information among teenage girls.

A study in Vanuatu showed that teenagers need more awareness provided in the communities and schools to increase knowledge about sexual and reproductive health and available information. It is easier for teenagers who are well informed to make the decision to seek care. Peer educators and nurses visiting schools and communities, teachers and a range of media (including comics, pamphlets, posters and radio) could be used to increase awareness (Kennedy *et al.,* 2014). Teenagers need to be better informed about sexual and reproductive health information so that they can make informed decisions to help them reduce reproductive health challenges like stigma in the society.

2.3.2 Poverty

Poverty is a state where individuals possess less than others in the society. It refers to the state of not being able to access what one needs for a living. According to United Nations (2007), poverty is lack of regular income and employment, lack of access to services such as education, healthcare, information, credit, water supply and sanitation, and lack of political power participation. Poverty is a factor that is forcing young people to engage in premarital sex in exchange of economic support hence exposing them to reproductive health risks (Godia, Olenja, & Lavussa, 2013). Only those who have money will access quality services and satisfy their needs. The poor are not just deprived of basic needs. They lack access to knowledge, education and skills development. Information needs of the poor must be understood followed by effective strategies that will facilitate access to the sources of the information they need. Perfection and effectiveness can only be achieved when one can access the information that will enable him/her gain the knowledge and skills on the tasks he/she executes (Mugalavai, 2012). Teenage girls, therefore, need to have information that will help them to make informed choices so that they can reduce the risks that may arise in their lives. Although socio-economic status may be a risk factor for teenage girls' pregnancy, school drop-out, and sexually transmitted infections including HIV/AIDS, the influence of poverty on sexual and reproductive health behaviours is not well understood.

The economic implications of reproductive health services include not only payment for the treatment, but also productive time of the youths is lost as they travel long distances to look for the services and the travelling expenses incurred (Taylor, 2003). This means that teenage

girls who come from poor families may lack transportation to reach the health care clinics so that they can get the correct reproductive health information or to receive guiding and counselling services. Socio-economic status can be measured for both individuals and society. Information determines one's worth and the more information one possess the greater the success. Poor individuals are incapable to regulate access to information on basic services such as health (Rajput, 2009). Those who are poor are more likely to live and work in worse physical environments and there would be increased adult and child mortality rates. Housing quality is also poorer for lower class families (Adler & Newman, 2002). Poor people live in environment characterised by semi-permanent houses, people may lack clean water, and the surrounding environment is not conducive. Socio-economic status, as measured by poverty, is associated with many measures of health status including adult and child mortality rates and reproductive health outcomes such as unintended pregnancy, infant mortality, unsafe abortions and school dropout. Very limited data are available for evaluating rates of reproductive health consequences by socio-economic status (poverty).

2.3.3 Income

Income is the amount of money individuals earn from their daily economic activities, be it employment, business or investments. When income is scarce, people tend to restrict their spending to essential items. Income fluctuations occur as a result of changes in the rates of economic growth. Although the association between income and health is stronger at lower incomes, income effects persist above the poverty level (Adler & Newman, 2002). People with higher incomes have more opportunities to live in safe and healthy homes, good communities and near high quality schools. Those with low incomes lack resources and transportation costs which can impact negatively on their health. They may face financial and life stress which can have health consequence (Adler & Newman, 2002). This was evident in Kaptembwo whereby since it is an informal settlement, many people earn little and this forced them to look for cheap housing without considering the surrounding environment. Parental income is among the important variables influencing teenage girls' sexual and reproductive health. Little is known on whether teenage girls are supported by their parents with the cost of services on reproductive health.

2.3.4 Place of Residence

Socio-economic factors such as family size, two-parent family, type of housing and housing environment affects adolescents' behaviour. Children from poor homes are likely to be street children, hawkers and more likely to live in a neighbourhood that will influence them

negatively (Udigwe, Prosper, Achunam, Echendu, & Chika, 2014). People living in the same environment can emulate certain behaviours from their friends because they spend most of their time in the same environment. Teenagers learn a lot of information from their peers which in turn equips their skills. Udigwe *et al.*, (2014) further explains that two parents are more likely to provide the best emotional support and life lessons necessary for a child development and psychological adjustment. Parents are the primary socializers of their children. They are in a unique position to help adolescents have responsible attitudes and behaviour towards sex and to educate adolescents into healthy sexual habits. Place of residence do not only determine the populations' characteristics and its social structure, but they also define the differential access to health care services. The study therefore sought to bridge the knowledge gap by looking at the relationship between the place of residence and the accessibility of reproductive health information among teenage girls.

2.4 Approaches used in Accessing Reproductive Health Information

People access information on reproductive health through delivery of right-based comprehensive sexuality education, access to family planning and comprehensive service delivery strategies. Teenagers need to have access to effective information and services for sexual and reproductive health (SRH) service interventions such as comprehensive sexual health education and counselling, access to condoms, contraceptives and HIV tests. This will help in the reduction of risks like unwanted pregnancy, unsafe abortion and chances of getting sexually transmitted infections (STI) and HIV/AIDS related infection (Mathews *et al*., 2015). Services should be delivered to meet the needs of all adolescents including those who are physically challenged in the society. This will help teenage girls to be aware of the services that are available. Based on the current study, approaches used in accessing reproductive health information included health promotion in schools, social media, school-based education, peer education, availability of reproductive health services and availability of family planning delivery strategies.

2.4.1 Heath Promotion in Schools

Health promotion in school is a method where the entire school works together in discussing health issues and wellbeing of students, staff and their community. Health promotion in schools requires closer relationship between health and education sectors around school health. Health advancement delivers an important chance to empower adolescents to make informed choices regarding key health-related behaviour (Banfield, McGorm & Sargent, 2015). Health promotion in schools should produce better health outcomes for students now

and in the future. Health promotion in schools focuses on enriching students' skills such as decision making, negotiation and problem solving, communication and critical thinking.

The components for distributing health promotion in school include; physical environment, social environment and community involvement (Banfield, McGorm & Sargent, 2015). All the said components will help teenagers in getting the required information concerning their health. Chin and McFarlane (2013) identified the elements of a Health Promoting in School (HPS) as a healthy school policy, the school's physical surrounding, social setting, individual health skills and competencies, links with the community and health services. Health promotion in schools has become a place where all members of the school community work together to provide students with integrated and positive experiences and structures which promote and protect their health. Health promotion in schools has holistic goals that aim to encourage the health and well-being of students, staff and even parents as well as to prevent sexual and reproductive health challenges. Little is known on whether a well-designed programme which links the curriculum with health promotion school actions is implemented in Kenya. Also, there is no clear picture if there is more comprehensive training in health promotion for teachers.

2.4.2 Use of Internet

Online resources are used to meet the reproductive health information needs. Many people are normally optimistic about the internet as an approach used in accessing information. The primary role of the internet is to deliver information and improve health of populations, especially in developing countries (Nwangwu, 2007). The internet is an attractive information approach for teenagers, especially for sensitive health issues. There is also a significant difference between the uses of internet for reproductive health information purposes with type of access. Those teenagers who have ever used the internet are far most likely exposed than those who have never been exposed to the internet.

There are initiatives that have recognised and are advocating for use of the internet as a reproductive health information approach for youths. The role of the internet is to deliver sexual and reproductive health information and improve health of young people because they are likely to go to the internet and obtain such information (Nwagwu, 2007). Many young people, for example teenagers, prefer using the internet because they can learn a lot on sexual and reproductive health without any restrictions from their parents. Teenagers can access information worldwide by forming most active group of internet users. Literature is

advocating for use of the internet as an approach in accessing reproductive health. Little is known about the opinions of young people regarding credibility of internet as a source of reproductive health information.

2.4.3 School-Based Sex Education

School-based comprehensive sex education programmes more frequently emphasise on the delay of sex activity, training in sexual negotiation, communication skills and information on contraceptive use. Both abstinence and comprehensive programmes aimed at this group tend to focus on puberty, pregnancy, HIV/AIDs information, and assertiveness and refusal skills (Ayalew *et al*., 2014). Provision of sex education will help all teenagers to develop positive values that will direct their decisions, judgment and behaviour. Sexual health education programmes aim to impart adolescents with the information they need to make informed decisions related to sexual issues. Sexual health education is improving and is reducing cases associated with irresponsible sexual behaviour within the adolescents' age group (Wiley & Terlosky, 2000). Despite the remarkable efforts made so far, according to literature, there is no clear picture whether teachers have abilities to use participatory teaching methods and whether they have background in health education and reproductive health knowledge. In addition, little is known on whether there is support from relevant authority concerning school-based sex education.

2.4.4 Peer Education

Peer education is a popular and flexible method that has been used in numerous diverse contexts like in schools, universities, teenage clubs and the community. Peers also acted as counsellors or condom distributors and they influenced other teenagers in doing the same. In the process, they learnt more on the importance of using condoms (Kesterton & de Mello, 2010). Condom is a method of contraception that provides protection from sexually transmitted infection including HIV/AIDs and also condoms prevent pregnancy. Condoms come in two types: female condoms and male condoms.

Peer education is popular in both government and teenagers. For government particularly, those with limited resources are attracted to peer education as a health and behaviour communication intervention. This is because of its potential to access and influence large numbers of teenagers. As programme effectiveness, peer education is dependent on appropriate recruitment methods, the quality of training peer educators receive, the supervision available to them, stakeholder cooperation, parental involvement and community

involvement which can be difficult to achieve in resource-constrained environments (Mason-Jones, Mathews, & Flisher,. 2011). Governments which advocate widespread use of peer education as an approach need to recognise barriers to implementation and ensure continuing checking and assessment of effectiveness and cost effectiveness. The Kenyan government also needs to ensure that teenagers get the right information on sexual and reproductive health to help them in reducing risks on sexual behaviour.

Fatemeh and Masoumeh (2013), asserts that peer education aims at assisting young people in developing the knowledge, attitudes, and skills that are necessary for positive behaviour modification through the establishment of accessible and inexpensive preventive and psychological support. Formal delivery of peer education in highly structured settings such as class teaching in schools is possible. Other methods may include informal tutoring in unstructured settings during the course of everyday interactions or individual discussions and counselling. Although different authors have supported peer education as an approach to health promotion, it is not known whether peer educators have adequate training to enable them to understand the purpose of the programme.

2.4.5 Availability of Reproductive Health Services

The kinds of health services needed to promote and safeguard sexual health include sexual education and prevention information, sexuality counselling, identification and referral for victims of sexual violence and female genital mutilation, voluntary counselling, testing, treatment and follow up for reproductive tract infection, cancers and associated infertility. World Health Organization requires all people, including teenagers, to have access to high quality and affordable health services, including those related to sexuality and sexual health without discrimination (WHO, 2015). Reproductive health services were made available to teenagers without considering only adult population. Teenage girls share the same characteristics and they should not be discriminated against in accessing sexual and reproductive health services.

2.4.6 Availability of Family Planning Delivery Strategies

Service delivery strategies need to be tailored to reach many people in different locations such as rural and urban areas. The most common service delivery sites include clinics, community-based distribution programmes, commercial retail sales, workplace programmes, post-partum programmes and private physicians. Clinic-based approach is reasonable in areas where clients do not live far from the clinics. Community based distribution (CBD) is done in

areas that do not have clinics nearby. Family planning services may be made available through CBD programs (Worku & Gebresilassie, 2008). In this approach, CBD workers, generally village women, are trained so that they may also train their neighbours concerning family planning and distribution of certain contraceptives. Teenagers mostly preferred trained women in the society because they are close to them and therefore they shared the information on sexuality. Some teenagers feared health care workers because they treated them as strangers and therefore they are not free to give such information. Different authors have discussed different strategies used in accessing reproductive health information but there was no clear picture if these strategies were effective in accessing reproductive health information and therefore this study came in to bridge this knowledge gap.

2.5 Theoretical Framework

This study was guided by Wilson's General Model of Information Behaviour. Information behaviour refers to the manner in which users go about getting information that they need to use in given situations or circumstances and includes, needs, sources, seeking, searching, use of information and factors that influence the information behaviour of users (Fisher, Erdelez & Mckechnie, 2005). Information behaviour (IB) is a sub discipline within the field of library and information science. It defines how people need, look for, manage, give and use information in different contexts. It may also be described as information seeking behaviour or human information behaviour (Fisher, Erdelez & Mckechnie, 2005).

2.5.1 Wilson's General Model of Information Behaviour

Wilson's (1996) model is a major revision of that of 1981, drawing upon research from a variety of fields other than information science, including decision making, psychology, innovation, health communication and consumer research. The model pictures the cycle of information activities, from the rise of information need (context of information need) to the phase when information is being used (information processing and use) (Niedźwiedzka, 2003).

The figure below shows Wilson's General Model of Information Behaviour.

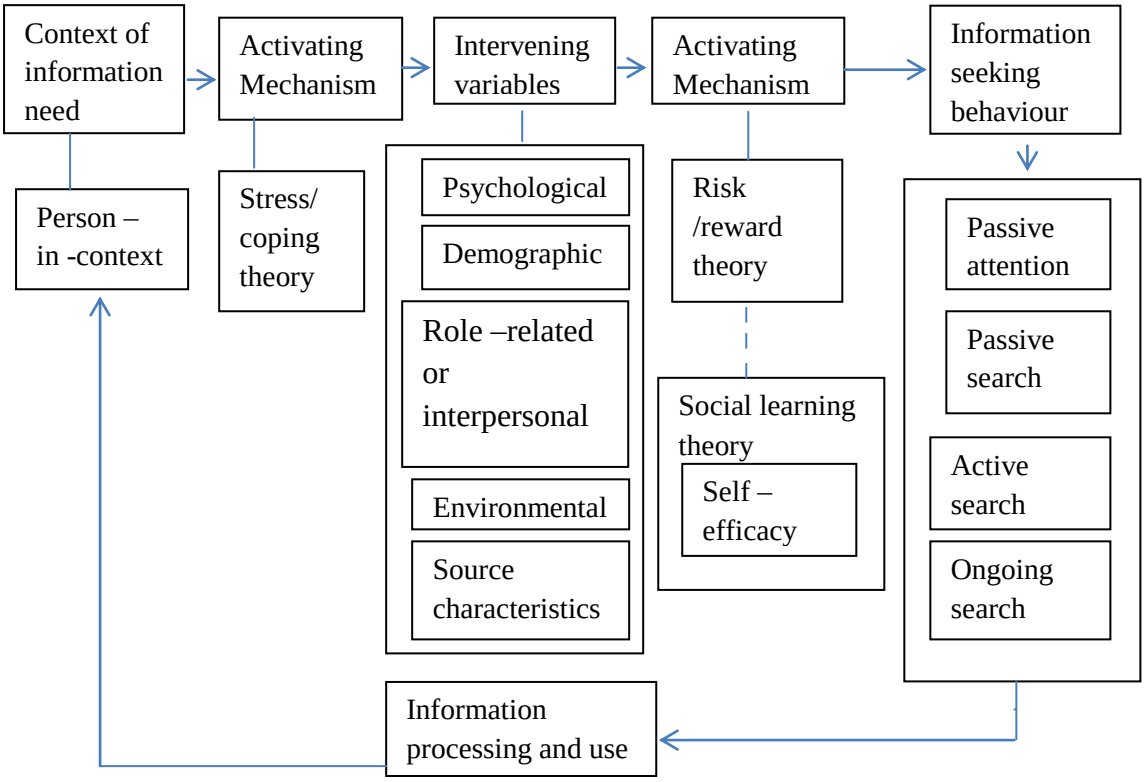

Figure 2.1: Wilson's General Model of Information Behaviour (Wilson, 1996).

Wilson's (1996) revised model of information behaviour starts from the rise of information need, to the information use phase. It explains three aspects of information seeking which include: why information seeking is more likely to occur in response to some needs more than others, why some information sources get more use than others and why people's perceptions of their own efficacy influence their success in meeting an information goal.

Wilson's model assumes two propositions. First, information needs are secondary needs, caused by primary needs, which in accordance with definitions in psychology can be defined as psychological, cognitive or affective. Cognitive needs rise as an attempt to find sense and order in the world, and are the realization of a need to explain and make sense out of phenomena, but also can be simulated by common, non- utilitarian curiosity. The rise of a particular need is influenced by the context, which can be the person him/herself, or the role the person plays in work and life, or the environment (social, political, economical, technological etc.) (Niedźwiedzka, 2003).

Activating mechanism refers to stress/ coping which may explain why some people's needs result in information seeking but others do not (Robson & Robinson, 2013). Stress/ coping theory offers possibilities for explaining why some needs do not invoke information seeking

behaviour. For example, in the current study, teenagers may seek or avoid reproductive health related information depending on how fast or slow they are accessing that particular information. Risk /reward theory may help to explain which sources of information may be used more than others by a given individual. In the current study, peers was the best sources of information because teenage girls prefer sharing information on reproductive health among their friends (peers) because they have similar experiences/age orientation. In risk/ reward, a person may be motivated to search for information if the danger of not possessing it appears high (Robson & Robinson, 2013). For the purpose of the current study, teenagers may seek for information on reproductive health so that they can reduce the risk associated with reproductive health for example unplanned pregnancies and sexually transmitted infections.

Social learning theory embodies the concept of 'self- efficacy', the idea of the conviction that one can successfully execute the behaviour required to produce the outcomes. A person believes in his/ her capability to perform a particular task such as searching for information (Wilson, 1999).

Wilson points out numerous significant determinants of information behaviour. Like the factors influencing the occurrence of information need, they can be psychological in nature, demographic (for example age, gender, social and economic status, education and job experience.), role related or interpersonal (the type of role one plays, for example, students, manager, researcher, etc.), the environment (could be economic or financial, political, economic factors), and the characteristics of a source (print, electronic, illustrated etc.) (Niedźwiedzka, 2003).

Wilson's model also showed that information seeking behaviour of individuals varies. In passive attention information is acquired without intentional seeking, for example watching television programmes. In passive search, people find information coincidentally while searching for other information. Others are active information seekers by participating in searching the information. However, when people find information, they process it for use and if they are not satisfied with the search, they may go back to start the search process again (Wilson, 1999). If information needs are to be satisfied, information processing and use becomes an essential part of a feedback loop (Kundu, 2017). In the phase of information processing and use, information obtained by a user is then processed, becomes an item of person's knowledge, and is used directly or indirectly, to influence the environment and, as a consequence, create new information needs. Teenage girls use information on reproductive

health so that they may reduce the risk relating to sexual health like unplanned pregnancies, STIs including HIV/AIDS and complications relating to abortion. Mental and physical information activities form a cyclic process, in which individuals elements of the contexts determine a person's behaviour at all stages, and where information obtained becomes a new element in a dynamic system (Niedźwiedzka, 2003).

Wilson's General Model was relevant because it focus on the micro- processes in the daily lives of teenage girls within particular contexts and social settings that could potentially influence teenage girls' information behaviour. The model was also relevant because the factor existed is that information usage is a process involving multiple phases. These phases include the identification of information needs, the decision to use information, selecting and acquiring information sources, finding and gathering, interpreting and processing the information and putting the information to use.

The model also helped the researcher to know how teenage girls shared information and how they used that information to help them solve the past, current and future problems. The model showed that when people find information, they process it for use and if they are not satisfied, they may go back and start the search process again and this will help them to fulfil their needs.

Wilson's model had weaknesses as pointed out by (Niedźwiedzka, 2003). The weaknesses of the model included;

- The model was more complex than its diagrammatic representation showed, for it subsumed the earlier models without showing all their details.
- Wilson's model separates psychological and demographic variables, while they can be put in one category of personal variables (inseparable from the person).
- Activating mechanisms can be found not only when a decision to seek information is being undertaken, but also at all other stages of information acquisition.
- Wilson's diagram suggests causative relation (arrows) between activating mechanisms and intervening variables, what can be misleading since these mechanisms are the general psychological or sociological phenomena, not an independent element of the context.
- Wilson separates psychological and demographic variables, while they can be put in one category of personal variables (inseparable from the person), unless we make the

diagram more detailed. If we do, as proposed here, several sub-categories of personal variables can be made, that is, physiological, affective, cognitive, demographic, etc.

From the discussion on Wilson's General model, it showed that, information obtained by a user is processed, becomes an item of person's knowledge, and is used directly or indirectly, to influence the environment and as a consequence, create new information need. An individual does not engage in seeking activities if he/she is convinced that the possessed knowledge is sufficient to understand the situation and make decision. The bigger the stress, the bigger is the motivation to look for information, up to certain point where the stress paralyses such activities. An activating factor is a necessity to cope with a situation or to solve a problem. Mental and psychological information activities form a cyclic process, in which individual elements of the context determine a person's behaviour at all stages, and where information obtained becomes a new element in a dynamic system.

2.6 Conceptual Framework

Figure 2.2 is the conceptual framework used in understanding the relationship between the dependent, independent and intervening variables in the study.

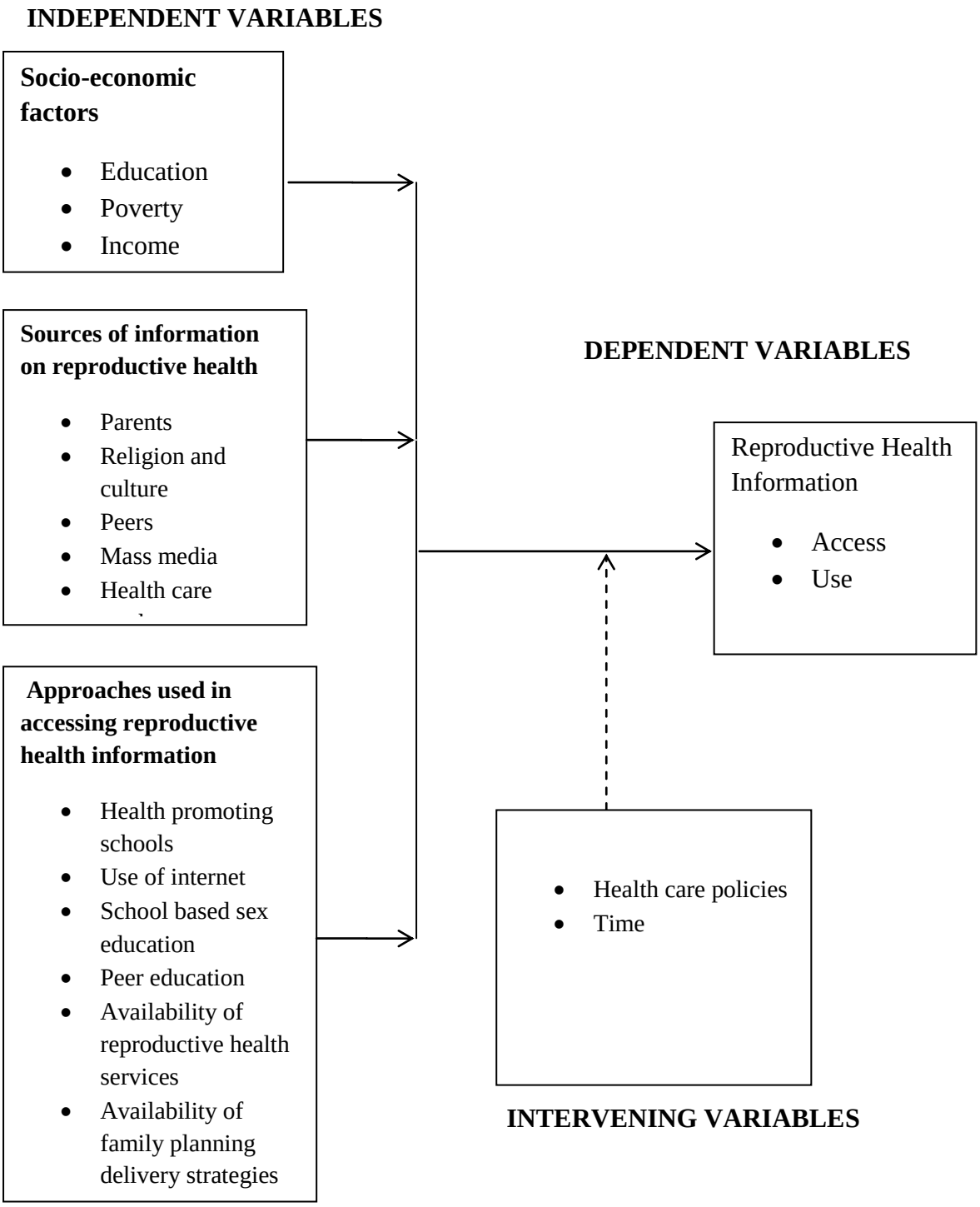

Figure 2.2: Conceptual framework

In the above conceptual framework, independent variable is a variable that the researcher has control over and can manipulate to determine the value of dependent variable. Determinants are the independent variables that are being examined if they have an influence on access and use of reproductive health information. Determinants have indicators (sources of information on reproductive health, socio-economic factors and effectiveness of approaches used). The dependent variable is the variable that is being observed or measured for changes that are thought to be caused by the changes in the independent variable. The dependent variable is the effect or outcome that the researcher is interested in examining. Dependent variables rely on other factors for example accessibility and usage of reproductive health information depends on determinants. The dependent variable was measured by asking respondents questions on their accessibility and usage of reproductive health information. An intervening variable occurs between independent and dependent variables. It is caused by the independent variable and is itself a cause of the dependent variable. Intervening variable can be known by the researcher as factors influencing access and use of reproductive health but are not necessarily being examined, for example policy and time.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter discusses the research design, location of the study, population of the study, sampling procedure, sample size, data collection and instruments, data collection procedure, data analysis, data analysis matrix table as well as ethical considerations.

3.2 Research Design

The study employed descriptive survey design that involves administering questionnaires to a sample of individuals (Mugenda & Mugenda, 2003). The design was suitable because a large number of people can be reached relatively easily and economically. A standard questionnaire provides quantifiable answers for a research topic (Creswell, 2007). This design was appropriate because it attempted to describe the determinants for access and use of reproductive health information among teenage girls in Kaptembwo, Nakuru Kenya.

3.3 Location of the Study

The study was conducted in Kaptembwo, Nakuru Kenya. Nakuru is located in Nakuru County. Nakuru is an agriculturally-rich county blessed with various tourist attractions such as craters and lakes. Nakuru borders seven counties; Laikipia to the north east, Kericho to the west, Narok to the south west, Kajiado to the south, Baringo to the north, Nyandarua to the east and Bomet to the west. It covers an area of 7496.5 square kilometres. The name Nakuru means '**a dusty place**' in the Maasai language - in reference to frequent whirlwinds that engulf the area with clouds of dust. Nakuru has an altitude of 1850m above sea level and located on 0017S36004E. It is 160km driving distance from Nairobi and 644km driving distance from Mombasa.

Nakuru is a cosmopolitan county hosting various races and tribes of Kenya, with different cultures, ideologies, religions, politics and social and economic aspirations. It is the agricultural capital of Kenya and is famous for its agro-based industries. These include production of cooking oil, soap, milk and milk products, wheat and maize flour, mineral water and agricultural implements (Municipal Council of Nakuru Strategic Plan, 2007).

Kaptembwo is an informal settlement located in Nakuru West constituency formerly Nakuru town. It has 14 villages. In most informal settlement areas in Kenya, there is poor infrastructure and high crime rate (Municipal Council of Nakuru Strategic Plan, 2007).

Young people face myriad social problems like prostitution, early child bearing, unemployment, drug addiction, alcoholism and domestic violence (Benguy *et al.*, 2013). This made the study locale a fairly ideal site to study the determinants for access and use of reproductive health which included sources of reproductive health information, socio-economic factors and approaches used in accessing reproductive health information among teenage girls. Kaptembwo was chosen because it is an informal settlement area which is a highly populated area compared to other estates in the town hence placed teenage girls at high risk. Such risks include teenage early pregnancies, sexually transmitted infections including HIV/AIDS, unsafe abortion, school drop outs, drug and substance abuse and forced marriages.

3.4 Population of the Study

Population is a complete set of individuals, cases or objects with some common observable characteristics (Mugenda & Mugenda, 2003). The target population in the study comprised all teenage girls who were aged between 13-19 years in and out of school in Kaptembwo, Nakuru Kenya. While teenage girls have the same reproductive rights as women, they face more obstacles in enjoying those rights. These include denial of access to reproductive health information and services, violence and exploitation and extreme hardship when faced with an unwanted pregnancy (NCAPD, 2010). The accessible population comprised of selected teenage girls from the ages 13-19 years from Nakuru West Secondary School (408 teenage girls), Kaptembwo Primary School (183 teenage girls) according to the school register, (2016) and Youth for Christ group Nakuru (90 teenage girls) making a total of 681 teenage girls.

3.5 Sample Size and Sampling Procedure

A sample is a subset of a population which is selected to represent the population during the study whereas sampling procedure is the process of selecting a sample from the population (Kothari, 2008). The current study adopted purposive sampling technique. From a study population of 681, a sample size was drawn using Nassiuma's (2000) formulae:

$$n = \frac{NC^2}{C^2 + (N-1)\,e^2}$$

$$n = \frac{681 \times 0.25^2}{0.25^2 + (681-1)\,0.02^2}$$

$$n = \underline{42.5625}$$

0.3345 n = 127.1300

Thus, the sample size is 127 samples

Where: n = Sample size,

N = Population,

C = Coefficient of variation,

e = Standard error.

C = 25% is acceptable according to Nassiuma (2000), e = 0.02 and N= 681

Proportionate sampling was used to determine the number of respondents in each school and the youth group. A diagrammatic representation of this is shown in Table 1, using the formulae provided by Thompson (2002).

From the total sample size ***n*** each sub-sample size (n_h) for each of the three schools and the youth group of Kaptembwo is calculated as follows:

$$n_h = n\frac{N_h}{N}$$

Where **h** is one stratum of three strata, **n** is the total sample size, n_h is the subsample for each stratum, N_h is the population in the stratum and ***N*** is the target population. For example, in Nakuru West Secondary School; n_h will be calculated as follows: 127 x ($^{408}/_{681}$) = 76 respondents. The same calculation procedure was applied in Kaptembwo primary school and Youth for Christ group Nakuru.

The sub-sample is as shown in the Table 3.1:

Table 3.1: Sub Sample of Teenage Girls at Kaptembwo, Nakuru Kenya

Strata	Nakuru West Secondary School	Kaptembwo Primary School	Youth for Christ group Nakuru	**Total**
Population (N_h)	408	183	90	681
Sample (n_h)	76	34	17	127

The researcher used purposive sampling technique which is a qualitative research technique where the researcher chooses specific people within the population to use for particular study or research project (Palys, 2008). Purposive sampling technique allowed the researcher to use cases that had the vital information based on objectives of the study. The researcher purposively selected Nakuru west secondary school which is a public secondary school and Kaptembwo primary school. Nakuru West secondary school was the only public secondary

school in Kaptembwo with the highest population of 750 (408 teenage girls and 342 teenage boys) from forms 1-4 (School Registers, 2016). Kaptembwo primary school also had the highest population of 2050 pupils from early childhood to class eight. The total number of teenage girls in Kaptembwo primary school was 183 from class 6-8 (School Registers, 2016). From the selected schools, the researcher used simple random sampling technique to select 76 teenage girls in Nakuru West secondary school, 34 teenage girls in Kaptembwo primary school (upper primary class 6-8). To select teenage girls who were out of school, the researcher purposively selected Youth for Christ group Nakuru which is a youth group formed to represent teenage girls who were out of school. This group represented teenage girls who have never gone to school and also those who have dropped out of school because of different challenges that they encountered.

The researcher used simple random sampling to select 17 teenage girls in the group. Simple random sampling provided equal opportunity of selection for each element in a population. It involved giving a number to every subject or member of the accessible population, placing the numbers in a container, mixed well and the ‘’lucky numbers’’ drawn constitute the sample. The key informants ((3 heads from three schools and the health care worker) were also interviewed to provide a deeper understanding of access and use of reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya.

3.6 Tools and Instruments

Questionnaires were used to collect data. A questionnaire is a research instrument used to collect information about the population. The questionnaires were administered to the entire sample of teenage girls in the two schools as well as those in the youth group (127 teenage girls in total). Questionnaires were administered to establish the sources of information on reproductive health, to investigate the socio-economic factors affecting access to reproductive health information and to determine the effectiveness of approaches used in accessing reproductive health information among teenage girls in Kaptembwo.

Interviews were used to get more information from the key informants (3 heads from three schools and the health care worker). Before conducting an interview, Gillham (2000) states that, the researcher should decide how the interview will be recorded. According to Greenfield (2002), there are three possible options used in recording. They include; note taking, tape recording or combination of the two. We interview people to find out more information that we cannot directly observe. Interviews helped to get more in-depth

information that was used to explain results in a detailed manner (Kothari, 2008). An interview schedule has a list of questions that the interviewer needs to ask the respondents. The aim of the interviews was to gather information that described sources of information on reproductive health, socio-economic factors affecting access to reproductive health information and the effectiveness of approaches used in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya. Interviews were appropriate in this study to give additional information concerning reproductive health information among teenage girls. Questionnaire and the interview schedule samples are attached in Appendix I and II respectively.

3.6.1 Validity

Validity is the extent to which a concept, conclusion or measurement is well-founded and corresponds accurately to the real world. Validity means that the research outcomes truly reflect the phenomenon the study is trying to measure (Mugenda & Mugenda, 2007). Validity as noted by Robinson (2002) is the degree to which results obtained from the analysis of the data actually represents the phenomenon under study. Validity was ascertained by having all the objective questions included in the questionnaire.

3.6.2 Reliability

Kombo and Tromp (2011) argue that, reliability is a measure of how consistent the results from a test are. In this study, reliability was ascertained by pre-testing the questionnaire with a selected sample of teenage girls from Pistis secondary school and Heshima primary school. According to Connelly (2008), literature suggests that a pilot study sample should be 10% of the sample projected for the larger present study (10% of 127) = 13. Prior to the main study, a pilot study was conducted with 13 teenage girls (aged between 13-19) of Heshima primary school and Pistis secondary school. Pilot study was done to help refine the questionnaire, enhance its legibility and minimise the chances of misinterpretation. To test the internal consistency of the items listed on the questionnaire, the researcher used the Cronbach alpha coefficient. Cronbach's Alpha is a statistic coefficient (a value between 0 and 1) that is used to rate the reliability of an instrument. A correlation coefficient of ≥ 0.7 will be considered acceptable (Maxwell, 2013). The results of the pilot test were considered in finalizing of the questionnaire. For the pilot, Cronbach alpha value of 0.872 was attained which exceeded the recommended level of ≥ 0.7, thereby indicating reliability.

3.7 Data Collection Procedure

The researcher sought an introductory letter from Egerton University Graduate School to assist in obtaining a research permit from the National Commission for Science, Technology and Innovation before starting the research process. The researcher visited the County Commissioner's Office and the County Director of Education to inform them of the intention to collect data. The researcher proceeded to the two schools and the youth group to obtain consent from the heads and the area chief. Questionnaires were then taken to the teenage girls in their classes. The questionnaire was also taken to the youth group at their meeting place and it was researcher administered.

The researcher herself distributed the questionnaires to the teenage girls who were purposively selected and waited for the respondents to complete and go back with the complete questionnaires. This helped the researcher to avoid loss of questionnaires and the researcher was able to clarify some questions to the respondents. After concluding quantitative data collected through the questionnaire, the researcher embarked on interviewing the key informants (heads from each school who were one female teacher and one male teacher as well as head of the youth group and health care worker in Rhonda Health Centre).

The purpose of the interview was to get more in-depth information that was used to explain in a detailed manner, the results found from quantitative phase. The researcher met the respondents (3 heads and the health care worker) and clearly explained the purpose of carrying out the research. The researcher interacted well with the respondents and recorded all the responses while ensuring that the most important points were noted. After the entire interview questions were answered, a complete interview schedule was then organised in readiness for analysis and interpretation.

3.8 Data Analysis

Both qualitative and quantitative techniques were used in data analysis. Quantitative data obtained through the questionnaires were analysed using Statistical Package for Social Sciences (SPSS) version 21 software. The data was then presented using descriptive statistics of mean scores, frequency tables and percentages. The influence was tested using Regression Coefficient. For qualitative data, data was analysed using narrative statements based on relevant themes. Table 3.2 shows the data analysis matrix.

Table 3.2: Data Analysis Matrix

S/N	Objectives	Independent variables	Dependent variable	Statistical procedures and tests
1	To establish the sources of information on reproductive health among teenage girls in Kaptembwo, Nakuru County, Kenya	Sources of information	Reproductive health	Frequencies, percentages and mean scores
2	To investigate the socio-economic factors affecting access to reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya	Socio-economic factors	Access to reproductive health information	Frequencies, percentages, mean scores and Regression coefficient
3	To determine the effectiveness of the approaches used in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya	The effectiveness of approaches used	accessing reproductive health information	Frequencies, percentages, and mean scores

3.9 Ethical Considerations

Ethics is defined as norms for conduct that distinguishes between acceptable and unacceptable behaviour (Sommer & Sommer 2007). The researcher adhered to the following ethical considerations: the researcher sought permission from relevant authorities including Egerton University graduate school, a permit from the National Commission for Science, Technology and Innovation (NACOSTI), research authorization from the County Commissioner's Office and the County Director of Education and consent from teenage girls' teachers.

The researcher ensured that the participants were fully informed about the research procedure and gave their consent to participate in the research before data collection took place. The researcher was careful to avoid causing physical or psychological harm to respondents by asking embarrassing and irrelevant questions, threatening language or making respondents nervous. The researcher also ensured that the participant's opinions were respected and kept confidential regarding any information acquired during the research process. The researcher assured the respondents that the information collected were to be used for academic purposes only. The researcher ensured that the participants felt free to withdraw from participation in the study without fear of being penalised.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the results of this study based on formulated objectives and research questions as presented in chapter one. The study investigated the determinants for access and use of reproductive health information among teenage girls who are in school and out of school in Kaptembwo, Nakuru County, Kenya. Descriptive and inferential statistics were used in the study. The results of the findings were discussed in relation to other studies as given in the following four sections: Demographic characteristics of the teenage girls in the study area, sources of information on reproductive health among teenage girls, effects of socio-economic factors on access to reproductive health information among teenage girls and effectiveness of the approaches used in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya.

4.2 Demographic Characteristics of the Teenage Girls in Kaptembwo

Three attributes of the teenage girls which were considered important to this study were age, education levels, and religion.

4.2.1 Age Distribution of the Teenage Girls

The teenage girls were asked to state their ages and the effect on their access to reproductive health information. The frequency distribution of the respondents by age is shown in Table 4.1.

Table 4.1: Age Distribution of Respondents

Age in Years	Frequency of the Teenagers	Percent of the Teenagers
13-15	41	32.3
16-19	86	67.7
Total	127	100.0

Majority of the respondents were in the age bracket of between 16 and 19 comprising of 86 (67.7%), while 41 (32.3%) were in the age bracket of between 13 and 15 years. The age distribution concerned could be explained by various factors. For example, from 16 years of age, teenage girls are sexually active, and they need information on reproductive health. This

information will help them to reduce the challenges related to reproductive health like school dropout, unplanned pregnancies, forced marriages and risks related to abortion.

Age is a demographic factor that affects access and use of reproductive health information. Age of the teenage girls was operationalized as the exact age of the respondents. Linear regression analysis was used to determine the effect of teenager's age on the access to reproductive health information. The index of access to reproductive health by the teenagers formed the dependent variable, while age formed the independent variable. The results of the regression model are presented in Table 4.2.

Table 4.2: Regression Model Summary for Age of Teenagers

Model	**R**	**R square**	**Adjusted R square**	**Standard error of the estimate**
1	.529[a]	.280	.274	5.376

[a] predictors: (constant), age of the teenagers

The model indicates an adjusted R^2 value of .274; this means that the independent variable age of the teenagers explained approximately 27.4 % of the variation in dependent variable which is access to reproductive health information. The regression coefficients of the model showing the beta, t statistics and the tolerance levels are given in Table 4.3.

Table 4.3: Regression Coefficients for Age of Respondents

	Unstandardized coefficients		Standardized coefficients			
	B	Std. error	Beta	T	P	VIF
(Constant)	12.171	3.267		3.726	.000	
Age	1.434	.206	.529	6.972	.000	1.000

a. Dependent Variable: index of access to reproductive health information

The regression analysis indicates that age of the teenage girls had a positive and significant influence with β= .529 and p=.000 on the access of reproductive health information. These results indicate that age of the teenage girls significantly influences the access to reproductive health information. The older teenage girls had higher access to reproductive health information than the younger teenage girls.

These results are in line with the study done by Sumter *et al.* (2008) on the developmental pattern of resistance to peer influence in adolescents which indicated that maturity affects decision making. As the teenagers become older, they gain more impulse control, responsibility and self-awareness. As teenage girls approach adulthood, they become more mature, which results in an improved capacity and responsibility to make decisions relating to their health.

These results are also in agreement with the report from KDHS 2008/2009 which revealed an increased uptake of family planning services among age 20-24 years as compared to 10-19 years old adolescents.

4.2.2 Formal Education Level of the Teenage Girls

The teenage girls were asked to state the highest academic level they had attained. The responses were grouped into three categories as follows: out of school, primary school, and secondary levels. The frequency distribution and percentages of the level of education attained by the respondents is shown in Table 4.4.

Table 4.4: Formal Education Level Attained by the Teenage Girls

Education level	Frequency of Teenage Girls	Teenage Girls' percentage
Secondary	73	57.5
Primary	43	33.9
Out of school	11	8.6
Total	127	100.0

Analysed data shows that majority of the respondents, 73(57.5 %) were in the secondary level of formal education, 43(33.9 %) were in the primary level and 11(8.6 %) were out of school. Education was associated with access and use of reproductive health information. The level of formal education has implication on access to reproductive health. People with high education level have a better chance of accessing reproductive health information. Formal education helps teenage girls in understanding reproductive health policies and their implications. The findings of the current study are consistent with Engen (2013) on Adolescent Reproductive Health in Cameroon: prevention of adolescent pregnancies through access to sexual and reproductive health measures in Cameroon who noted that the literacy

level and girls' access to formal education have an impact on their capacity to protect and enhance their reproductive and sexual health.

4.2.3 Religion of the Respondents

The respondents were asked to state their religion and the results are shown in Table 4.5.

Table 4.5: Religion of the Respondents

Religion	Frequency	Percentage
Christianity	108	85.0
Islam	19	15.0
Total	127	100.0

Majority of the respondents 108(85%) were Christians, while the remaining 19(15%) were Muslims. The Catholic Church does not encourage the use of reproductive health information and services among the Christians (Rachel *et al.*, 2011). However, the findings revealed that this trend may be changing since teenage girls from Christian backgrounds are accessing reproductive health information and services. This may show that, despite their Christian background, teenage girls are beginning to appreciate the benefits of reproductive health information and services.

4.3 Sources of Information on Reproductive Health among Teenage Girls in Kaptembwo, Nakuru County, Kenya

The first objective of this study was to establish the sources of information on reproductive health among teenage girls in Kaptembwo, Nakuru County, Kenya.

4.3.1 Sources of Reproductive Health Information in Kaptembwo

In this study, the term sources of reproductive health referred to the different individuals and organizations that were involved in providing information relevant for sexual and reproductive health. The information includes family planning, antenatal care, safe delivery and postnatal care, prevention and treatment of infertility, prevention of abortion and management of consequences related to abortion, treatment of reproductive tract infection, prevention, care and treatment of STIs including HIV/AIDS and information, education and counselling.

The descriptive statistics showing the different sources providing reproductive health information to teenage girls in Kaptembwo is presented in Tables 4.6.

Table 4.6: Sources of Reproductive Health Information to Teenage Girls in Kaptembwo

Sources of information	Frequency	Teenager's response in %	Rank
Peers	43	33.9	1
Religious Teachings	32	25.2	2
Parents	22	17.3	3
Health Care Workers	17	13.4	4
Mass Media	13	10.2	5
Total	127	100	

The results show that, five different sources were identified as the ones that provide the teenagers in Kaptembwo with reproductive health information. Based on the frequency of the teenage girls that identified a given source, peers were ranked as number 1 (one), whereas mass media was ranked as number 5 (five).

Thirty-three-point nine percent (33.9%) of the teenage girls reported that they received their information on reproductive health from their peers. These findings showed that teenage girls prefer sharing information on reproductive health among their friends (peers) because they have similar experiences/age orientation. These findings relate to Nobelius *et al.* (2010) on Sexual and Reproductive Health Information Sources Preferred by Out-of-school Adolescents in Rural Southwest Uganda who noted that the peer group is the only place where majority of teenagers feel they can openly discuss, and debate information gathered from other sources. Sex related matters among teenagers are discussed mostly with age-mates because they trust one another. Teenage girls may lack confidentiality among other people, especially parents.

These findings confirmed similar findings on the interview schedule by head teachers. The source of reproductive health information was derived from the question which sought to establish where the teenage girls get reproductive health information. The responses were as follows:

Female teacher (FM) teacher explains that:

> *Teenagers normally feel shy when discussing sexual and reproductive health information with their teachers. Most of them prefer sharing information with their friends. Teenage girls believe that, parents are free with teachers and therefore sharing information with a teacher might also extend to their parents. Generally, teenagers are not free in sharing sexual and reproductive health information with us. When it comes to any reproductive health information, teenage girls shy off but when teachers are not around, they are free with any visitor offering to talk to them concerning any reproductive health information.*
>
> *Teenage girls in our school get reproductive health information through guidance and counselling lessons. We combine teenage girls from different classes who are above 13 years and there we disseminate reproductive health information. We also contact the experts in case we require other reproductive health information and because teenagers are in the same age category, they are free in sharing any information on reproductive health. There are some units in social science and Christian religious education also dealing with reproductive health* (Field Data, 2017).

The findings imply that even though teenage girls are shy in discussing reproductive health issues, teachers felt that it is important to discuss such topics with them so that they can know the truth and make their informed choices. Some teenage girls are ignorant. They may be having information on reproductive health, but they keep on closing their eyes and imagining that miracles will happen. Some may pretend that they know nothing about reproductive health information. Teenage girls have information, but they still fall into challenges like abortion, pregnancies and Sexually Transmitted Infection including HIV/AIDS.

The same question was explained by **M teacher** as follows:

> *Mostly, form four teenage girls are free in discussing reproductive health issues than form one teenage girls. This is because most of them are above 15 years and they find it normal discussing such topics with their classmates. Form one teenage girls feel ashamed when you introduce such topics in class and you find most hiding their faces.*
>
> *We normally hold guidance and counselling sessions in our classes where we invite experts from community health volunteers to help our teenagers in solving some*

issues relating to reproductive health. We normally form groups according to teenager's ages and invite outsiders to discuss such matters because teenagers will be free with them than their parents and teachers (Field Data, 2017).

Religious teachings were ranked number two (2) by teenage girls (25.2 %). This implies that teenage girls who normally attend religious services are less likely to be sexually active than those who do not. Religious teachings helped teenage girls to make informed decisions concerning sexual and reproductive health. These findings relate to Caldwell's (2000) findings which showed that religious teachings have a prominent place in people's understanding of HIV/AIDS in Africa; and therefore, may be an important source of reproductive health information. On the contrary, (Nobelius *et al*., 2010) noted that in Rural Southwest Uganda, teenagers feel that religion has no impact on their daily lives, and none say that they have gained any useful information about sexual and reproductive health at the church.

Seventeen point three percent (17.3 %) of teenage girls acknowledged that they received their information on reproductive health from their parents (mothers). Parents normally pass reproductive health information as form of warnings and threats. Parents are worried about their children's sexual health. Mostly the topic of discussions is mainly abstinence, unplanned pregnancy and prevention of STIs including HIV/AIDS. These findings agree with the findings of Melaku, Yamane, John, & Hailemariam, (2014) on Sexual and reproductive health communication and awareness of contraceptive methods among secondary school female students in northern Ethiopia which reported that, majority of the female students were free in discussing sexual and reproductive health issues with their parents.

Discussing sexual and reproductive health issues with parents had a positive effect on contraceptive awareness of students. Students who are aware of contraceptive use are much better than those who are not aware. This will reduce the challenges associated with sexual and reproductive health like unplanned pregnancies, abortion and school dropout among teenage girls. These results are consistent with Li, Shah & Zhang, (2007) who investigated where Chinese adolescents obtained knowledge of sex. They noted that parents have the legal authority to make health decisions on behalf of their teenagers, grounded on the principles that young people lack the maturity and decision to make fully knowledgeable decisions before they mature. Parents are the most trusted entities in the lives of teenagers. Ayalew *et al*., (2014), in a study on Adolescent –Parent Communication on Sexual and Reproductive

Health Issues among High School Students in Dire Dawa, Eastern Ethiopia, noted that parents need to be close to their teenagers so that they can share any information concerning sexuality.

Thirteen point four percent (13.4 %) of the teenage girls reported that they received their information on reproductive health from health care workers. These findings showed that most teenage girls don't seek reproductive health information from health care workers because their services largely lacked privacy. Teenage girls believed that health care workers, especially nurses, may share information with their parents. Jarrett *et al.,* (2011) pointed out that adolescents do not seek health care information from health care providers because of concerns about confidentiality, lack of trust in healthcare providers, embarrassment, lack of awareness and knowledge of services and lack of knowing how to access services. In addition, Goicolea (2010) noted that health care workers need to be knowledgeable, non-judgmental, confidential, and allow adequate time for consultation in issues regarding to information for sexual and reproductive health. It is for local authorities, working with health and other associates, to carry on taking the lead in the reduction of teenage pregnancies.

These findings are also illustrated by the interview schedule question which sought to find out whether teenage girls are free in discussing any sexual and reproductive health information with health care workers. Nurse **A** in Rhonda Health Clinic gave the reason as follows:

> *Some teenage girls are free and some shy off when discussing information on reproductive health. It is up to the nurse to use some tactics to get more information from them. They avoid a lot of questions and others may judge information in a wrong way. You must be keen when passing such information to teenage girls so that you may not hurt them. Teenage girls react in different ways and if you understand them, they are good. Sometimes it is difficult to make decisions because you find it difficult to give information on reproductive health to a young girl. When teenage girls come for services, we are willing to take them on guiding and counselling sessions before embarking on the right reproductive health methods. Teenagers normally come for reproductive health information without the knowledge of their parents. If the case is serious like abortion, we involve their parents. Most teenagers will run away if you always involve their parents* (Field Data, 2017).

Health care workers need to be open to teenage girls and share all information relating to reproductive health. Parents hardly discuss contraception and experimental sexual topics with their children. Nurses therefore need to take such responsibilities so that they can help teenage girls in reducing challenges like unplanned pregnancies which may lead to abortion.

Ten point two percent (10.2 %) of the teenage girls reported that they received their information on reproductive health from mass media. Even though mass media techniques have the advantage of covering wider community members in sensitization of reproductive health issues, mass media was ranked the last source of information on reproductive health. This may be attributed to the fact that Kaptembwo is an informal settlement with majority of low-income earners and unemployed. Majority may not own such media as radio, television, newspaper and magazines. Kibombo, Musisi and Neema (2014), reveal that mass media such as press, magazines, radio and television broadcasts influence access to information on sexual and reproductive health. There are a number of programmes targeting teenage girls that are aired on radio and television related to teenagers' sexual and reproductive health. Teenage girls may find it confidential watching some programmes in the absence of their parents and this will help them to discuss with their friends. Magazines are favourite and most young generations, especially teenagers, read more on sexual behaviour, which may influence them.

According to Wilson's general model of information behaviour, risk/reward theory helps to explain which sources of information may be used more than others by a given individual. Based on the findings in the current study, peers were ranked as number 1 (one), whereas mass media was ranked as number 5 (five). Peers were the best source of information among teenage girls in Kaptembwo, Nakuru County Kenya. Teenage girls preferred sharing information among their friends because they had similar experiences and they were also free to each other. Teenage girls were motivated by their peers because they were interacting in sharing information on reproductive health. Having knowledge in reproductive health will help to reduce the risks associated with reproductive health like school dropout, early marriages, complications related to abortion, unplanned pregnancies and sexually transmitted infections including HIV/AIDS.

4.3.2 Evaluation of Reproductive Health Information given by Health Care Workers

The researcher sought to find out the reception of the heath care workers that can help teenage girls to access reproductive health information and services. The descriptive statistics showing the reception by health care workers among teenage girls are presented in Table 4.7.

Table 4.7: Reception by Health Care Workers

Reception	Frequency of Teenagers	Teenagers' percentage
Friendly	90	70.87
Not friendly	37	29.13
Total	127	100.0

Analysed data showed that, 90 (70.87%) of the teenage girls said that, the health care workers were friendly to them when passing information on reproductive health while 37 (29.13%) said that, health care workers were not friendly. These findings show that health care workers were willing to discuss any information concerning reproductive health with the teenage girls.

4.3.3 Level of Cooperation between Health Care Workers and Teenage Girls

The researcher sought to find out the level of cooperation among health care workers in passing information on reproductive health to teenage girls. The descriptive statistics showing the level of cooperation among health care workers is presented in Table 4.8.

Table 4.8: Level of Cooperation between Health Care Workers and the Teenage Girls

Cooperation level	Frequency of Teenage Girls	Percentage of Teenage Girls
Good	12	9.45
Average	45	35.43
Fair	70	55.12
Total	127	100.0

The result shows that majority of teenage girls 70(55.12%) state that, the level of cooperation among health care workers was fair. 45(35.43%) stated that the level of cooperation was average and 12(9.45%) said that the level of cooperation among health care workers was good. These findings indicate that health care workers were willing to pass information on reproductive health but teenage girls were reluctant in asking questions concerning information on sexual and reproductive health.

4.4 Effects of Socio-Economic Factors on the Access to Reproductive Health Information

The second objective of this study was to establish how the socio-economic factors affect the access of information on reproductive health among teenage girls in Kaptembwo, Nakuru, Kenya. Four socio-economic characteristics were investigated in this study to ascertain their effect on the access to reproductive health information among teenage girls. They included: education, poverty, income and place of residence. Simple linear regression was used to determine whether significant effects existed between these socio-economic variables and access to reproductive health information by the teenagers in Kaptembwo, Nakuru, Kenya.

4.4.1 Level of Access to Reproductive Health Information

The variable level of access to reproductive health information by the teenage girls was operationalized as an index that combined responses by the teenage girls on the following eleven (11) topics of reproductive health information relevant to the teenagers: Female Genital Mutilation (FGM), early or unwanted pregnancies, abortions, Sexually Transmitted Diseases (STI), Sexual information and services (use of condoms, prevention of unwanted pregnancies, abstinence from sex, use of contraceptives), early and forced marriages, management of STI, and the management of HIV/AIDS.

The teenage girls were required to assess the level of access using a 5-point score ranging from Very low, Low, Medium, High and Very High. From each of the different approaches used in information provision, the scores were then added to form a combined index called level of access to reproductive health information. The descriptive statistics and the frequency distribution of the index are given in Table 4.9.

Table 4.9: Frequency Distribution of the Index of Level of Access of Reproductive Health Information by the Teenagers

Index categories	Frequency	Percentage
20-30 (Low)	36	28.3
31-40 (Medium)	69	54.4
41-50 (High)	22	17.3
Total	127	100

Mean 34.7, median 35, mode 35, standard deviation 6.31, minimum 21, maximum 47

The majority of the teenagers 69(54.4 %) in the study area had a medium level of access to reproductive health information. The index was used to determine the relationships between the socio-economic conditions of the teenage girls and their level of access to reproductive health information. Mbeba (2012), in a study on the barriers to sexual and reproductive health services and rights among young people in Mtwara district, Tanzania, pointed out that none of the 38 facilities in Mtwara district had designated areas for provision of youth friendly services since services provided were mostly adult centred. Sexual and reproductive health services offered include condom provision, contraceptives and postnatal care. The findings further showed that, most teenage girls aged between 10-18 years in Mtwara rural district did not have a place within their communities where they could visit and talk about relationships, sex, contraception, sexually transmitted infection and HIV/AIDS. The community members and service providers in the district thought it was inappropriate for girls aged 10-18 years to access sexual and reproductive health services, especially family planning.

On the contrary, Similo (2015) found that adolescent girls in Filabusi, Zimbabwe, did not have adequate access to sexual and reproductive health information. However, the community library in Filabusi was strategically set to provide information on health and sexual matters. Respondents in the study revealed that they did not seek sexual and reproductive health information with the elderly people in the community. Instead, they discussed such issues with their friends. The study further found that sexual matters were not talked about at home. Parents and extended family members like aunts, uncles and grandparents are traditionally the main communicators of sexual and reproductive health values and they usually guide young people on issues relating to sexual and reproductive health.

The findings are also illustrated by the interview schedule questions which sought to find out whether teenagers normally go to health care facilities to seek reproductive health information and services. The health care worker explained as follows:

> *Teenage girls normally come to seek reproductive health information and services because most of them are married and if not married, they already have children. As nurses, we take our responsibilities to ensure that these teenage girls get the right information on the best methods of family planning.*
>
> *Most teenage girls come mostly for family planning and HIV/AIDS testing. They normally come privately seeking for those services and as a nurse, I will take her through counselling process before embarking on the service required. They also come for anti-natal care because they are required to bring their children for immunization and to be given advice on the nutrition required to prevent diseases. Teenage girls mostly know morning after pills and they mostly go for them because they can access them in the chemists. Only those who have given birth are willing to be introduced to family planning methods* (Field Data, 2017).

These findings imply that most teenage girls are not free in seeking reproductive health information because they don't want to be seen by other women. Teenage girls need to be welcomed and they will feel free in sharing any information relating to reproductive health. Nurses are responsible in guiding teenage girls on the best family planning methods which will help them to make their informed decisions relating to their sexual and reproductive health. Outreach services helped teenage girls to be aware of services offered.

Health care worker further explained that:

> *When teenage girls visited the health care clinics, they are given equal treatment as other women. In our clinic, we normally call experts who are dealing with such information like community heath volunteers to have a talk with the teenage girls. Teenagers are given information on how to take care of themselves to avoid unplanned pregnancies and also guidance and counselling services to mould their lives. We normally ensure that these teenagers get the right information so that they can make the right decisions concerning their lives* (Field Data, 2017).

These results indicate that, community health volunteers are responsible in raising awareness on reproductive health services and approaches to be used by teenage girls in accessing

reproductive health information and services. They can also invite teenage girls to certain places so that they can pass information on how to reduce reproductive health threats like unplanned pregnancies, STI including HIV/ AIDS and school dropout. Guiding and counselling services are mostly directed to schools because this is the right time to pass information on reproductive health to teenage girls.

4.4.2 Effect of the Level of Education of the Teenage girls on Access to Reproductive Health Information

Linear regression analysis was used to determine the effect of teenager's level of education on the access to reproductive health information. The index of access to reproductive health by the teenagers formed the dependent variable, while the level of formal education attained formed the independent variable. The results of the regression model are presented in Table 4.10.

Table 4.10: Regression model summary for level of formal education attained by teenagers

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.303[a]	.092	.085	6.037

[a] predictors: (constant), level of formal education attained by the teenagers

The model indicates an adjusted R^2 value of .085; this means that the independent variable level of formal education attained by the teenagers explained approximately 8.5 % of the variation in dependent variable which is access to reproductive health information. The regression coefficients of the model showing the beta, t statistics and the tolerance levels are given in Table 4.11.

Table 4.11: Regression Coefficients for Level of Formal Education Attained by the Teenagers

	Unstandardized coefficients		Standardized coefficients			
	B	Std. error	Beta	t	P	VIF
(Constant)	27.405	2.118		12.937	.000	
Age	2.932	.824	.303	3.560	.001	1.000

a. Dependent Variable: index of access to reproductive health information

The regression analysis indicates that the level of formal education attained by the teenagers had a positive and significant influence with β= .303 and p=.000 on the access to reproductive health information. These results indicate that the level of formal education attained by the teenagers significantly influences the access to reproductive health information. The teenagers with a higher level of education accessed reproductive health information more than the teenagers with a lower education level. This finding may be as a result of educated teenagers being aware of their vulnerability to poor reproductive health than their less educated counter parts. When there is usually lack of understanding of sexual and reproductive health issues, it makes it difficult for behavioural change to occur among the targeted audience regardless of their awareness.

These results are in line with the findings by Engen (2013) on Adolescent Reproductive Health in Cameroon: prevention of adolescent pregnancies through access to sexual and reproductive health measures, pointing out that, access to sexual and reproductive health information is an important element in promoting and improving adolescents' reproductive health. Offering them with sexual and reproductive health education, either in a school setting or in a health facility empowers them with the skills and knowledge needed to make informed responsible decisions regarding their sexuality. This in turn may lead to a reduction in the challenges relating to sexual and reproductive health like pregnancies and mitigation of other reproductive health concerns.

4.4.3 Effect of Poverty Levels on the Access of Reproductive Health Information to the Teenagers

Linear regression analysis was used to determine the effect of teenager's poverty level on the access to reproductive health information. The index of access to reproductive health by the teenagers formed the dependent variable, while the level of poverty formed the independent variable. The results of the regression model are presented in Table 4.12.

Table 4.12: Regression model summary for level of poverty

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.350[a]	.122	.155	5.883

[a] predictors: (constant), level of poverty of the teenagers

The model indicates an adjusted R^2 value of .122. This means that the independent variable level of poverty of the teenagers explained approximately 12.2 % of the variation in dependent variable access to reproductive health information. The regression coefficients of the model showing the beta, t statistics and the tolerance levels are given in Table 4.13.

Table 4.13: Regression Coefficients for poverty levels

	Unstandardized coefficients		Standardized coefficients			
	B	Std. error	Beta	t	P	VIF
(Constant)	39.733	1.339		29.667	.000	
Poverty levels	-2.511	.604	-.350	-4.156	.000	1.000

a. Dependent Variable: index of access to reproductive health information

The regression analysis indicates that the poverty levels had a negative and significant influence with β= -.350 and p=.000 on the access to reproductive health information. These results indicate that, the level of poverty significantly influences the access to reproductive health information. Teenagers who came from poor background accessed reproductive health information at a lower rate.

These results relate to World Health Organization (2003) which states that, poor people have higher than average child and maternal mortality, higher levels of diseases and more limited access to health care and social protection. When people become ill or injured, the entire

household can become trapped in a downward spiral of lost income and high health care costs. Investment in health is increasingly recognized as an importance means of economic development and a prerequisite for developing countries.

Based on the interview schedule which sought to find out whether there are some teenage girls who have dropped out of school, **FM teacher** explains that,

> *Many teenagers have dropped out of school because of pregnancies. Because they come from a slum area, most of them prefer going into early marriages or engage in prostitution because their parents cannot support them financially. If you follow them to their homes, they shy off because they feel embarrassed* (Field Data, 2017).

4.4.4 Effect of Parent's Income on the Access of Reproductive Health Information to the Teenage Girls

Effects of formal employment of the parents on the access to reproductive health information among teenage girls were examined. Financial support from the parents was also examined.

Effect of Formal Employment of the Parents on the Access to Reproductive Health Information among Teenagers

Linear regression analysis was used to determine the effect of the parent's formal employment on the teenager's access to reproductive health information. The index of access to reproductive health by the teenagers formed the dependent variable, while the formal employment of the parents formed the independent variable. The results of the regression model are presented in Table 4.14.

Table 4.14: Regression Model Summary for Formal Employment of the Parent

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.392[a]	.153	.147	5.830

[a] predictors: (constant), level of formal employment of the parents

The model indicates an adjusted R^2 value of .153; this means that the independent variable formal employment of the parents explained approximately 15.3 % of the variation in dependent variable access to reproductive health information. The regression coefficients of the model showing the beta, t statistics and the tolerance levels are given in Table 4.15.

Table 4.15: Regression Coefficients for Formal Employment of the Parents

	Unstandardized coefficients		Standardized coefficients			
	B	Std. error	Beta	t	P	VIF
(Constant)	37.030	.712		51.986	.000	
Formal employment	4.930	1.036	.392	4.757	.000	1.000

a. Dependent Variable: index of access to reproductive health information.

The regression analysis indicates that formal employment of the parents had a positive and significant influence with β= .392 and p=.000 on the access to reproductive health information. These results indicate that the formal employment of the parents significantly influences the access to reproductive health information. The teenage girls with parents with formal employment had a higher access to reproductive health information while teenage girls whose parents were not employed accessed reproductive health information at a lower rate.

Effect of Parental Financial Support to Teenage Girls on their Access to Reproductive Health Information

Linear regression analysis was used to determine the effect of the parent's provision of money to their teenagers and their access to reproductive health information. The index of access to reproductive health by the teenagers formed the dependent variable, while the provision of money by the parents formed the independent variable. The results of the regression model are presented in Table 4.16.

Table 4.16: Regression Model Summary for Financial Support by Parents

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.309[a]	.096	.088	6.025

[a] predictors: (constant), financial support by the parents

The model indicates an adjusted R^2 value of 096; this means that the independent variable parental financial support explained approximately 8.8 % of the variation in dependent variable access to reproductive health information. The regression coefficients of the model showing the beta, t statistics and the tolerance levels are given in Table 4.17.

Table 4.17: Regression Coefficients for the Financial Support by the Parent

	Unstandardized coefficients		Standardized coefficients			
	B	Std. error	Beta	t	P	VIF
(Constant)	37.419	.919		40.722	.000	
Formal employment	4.109	1.130	.309	3.637	.000	1.000

a. Dependent Variable: index of access to reproductive health information

The regression analysis indicates that financial support by the parents had a positive and significant influence with β= .309 and p=.000 on the access to reproductive health information. These results indicate that the financial support by the parent significantly influences the access to reproductive health information. The teenagers with financial support from their parents also had a higher access to reproductive health information.

Effect of Two Parent's Family on the Access of Reproductive Health Information

The number of parents (also referred to as two-parent families) was investigated. The linear regression analysis was used to determine the effect of number of parents on the teenager's access to reproductive health information. The index of access to reproductive health by the teenagers formed the dependent variable, while the number of parents formed the independent variable. The results of the regression model are presented in Table 4.18.

Table 4.18: Regression Model Summary for Two Parent's Family

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.181[a]	.033	.025	6.231

[a] predictors: (constant), number of parents

The model indicates an adjusted R^2 value of .033; this means that the independent variable number of parents explained approximately 3.3% of the variation in dependent variable access to reproductive health information. The regression coefficients of the model showing the beta, t statistics and the tolerance levels are given in Table 4.19.

Table 4.19: Regression Coefficients for two parent's family

	Unstandardized coefficients		Standardized coefficients			
	B	Std. error	Beta	t	P	VIF
(Constant)	35.729	.745		47.971	.000	
Number of parents	2.290	1.112	.181	2.060	.041	1.000

a. Dependent Variable: index of access to reproductive health information

The regression analysis indicates that number of parents (or two parent families) had a positive and significant influence with β= .181 and p=.000 on the access to reproductive health information. These results indicate that the number of parents significantly influences the access to reproductive health information. The teenagers with both parents also had a higher access to reproductive health information because they get financial support from both parents.

Wilson's general model of information behaviour points out various factors influencing the occurrence of information need. These factors can be psychological in nature, demographic (age, gender, social and economic status, education and job experience), role related or

interpersonal, the environment (could be economic or financial, political and economic factors). Based on the current study, Wilson's model is linked to the findings by indicating the effects of socio-economic factors on the access to reproductive health information among teenage girls in Kaptembwo, Nakuru County. The socio-economic factors included: education, poverty and income. Analysed data indicates that teenage girls with higher level of education accessed reproductive health information more than the teenage girls with the lower level of education. The findings also indicate that poverty level affects access to reproductive health information among teenage girls in Kaptembwo, Nakuru County, Kenya.

4.5 Effectiveness of Approaches used in Accessing Reproductive Health Information

The third objective was to determine the effectiveness of the approaches used in accessing reproductive health information among teenage girls in Kaptembwo, Nakuru, Kenya.

4.5.1 Effectiveness of different Approaches Used by Teenage Girls in Accessing Reproductive Health Information

The Teenagers were asked to assess the level of effectiveness of the different approaches used in providing reproductive health information to them using a 5-point semantic differential scale. The frequency distribution and the means of their assessment are given in Table 4.20.

Table 4.20: Effectiveness of the Approaches Used in Providing Reproductive Health Information

Approaches used in assessing information	Effectiveness of the approach in %					
	Very Low	Low	Medium	High	Very High	Mean
Heath Promoting in Schools	6.3	0.8	8.7	44.9	39.4	4.10
Internet	7.9	27.6	29.9	20.5	14.2	3.05
School based sex education	3.1	27.6	48.8	14.2	6.3	2.92
Peer education	3.9	0	2.4	74.0	19.7	4.05
Availability of health care services	6.3	6.3	29.1	37.8	20.5	3.59
Availability of family planning delivery strategies	7.9	0	0	74.0	18.1	3.94

n=127

The results were ranked in the following order starting from the highest in terms of its effectiveness in providing information on reproductive health; health promoting in schools (4.10), peer education (4.05) , availability of family planning delivery strategies (3.94) , availability of health care services (3.59) , internet (3.05) and school-based sex education (2.92). Health promoting in schools was ranked highly (a mean score of 4.10) by the teenagers in terms of its effectiveness in providing information on reproductive health to them and school-based sex education was ranked the lowest (mean score of 2.92). Health promoting in schools is an important component programme that empowers young people with information and life skills that enable them to make safe and healthy life choices. Health promoting in schools helps students to learn about values and interpersonal skills and sexual and reproductive health rights.

4.5.2 Variation in Assessment among Primary School, Secondary School and Out of School Group

A variation existed in the way the three groups of respondents (primary school, secondary school and out of school) assessed the effectiveness of the different approaches in providing reproductive health information to them. The F-test was used to assess the differences in assessment between the three groups and the results are depicted in Table 4.21.

Table 4.21: Assessment of the Effectiveness of the Different Approaches Used in Providing Information

	Effectiveness of the approach (in means)			
Approaches used in assessing information	**Primary**	**Secondary**	**Out of school**	**F-test**
Health promoting in schools	3.82	4.28	3.82	p=.006
Internet	1.76	3.64	3.00	p=.000
School based sex education	3.55	2.61	3.05	p=.000
Peer education	4.17	3.94	4.29	p=.100
Availability of reproductive health services	3.70	3.42	4.17	p=.048
Availability of family planning delivery services	3.76	3.93	4.35	p=.048

n=127

The results (Table 4.21) indicate that statistical significant differences were found to exist between the three groups (primary school, secondary school and out of school) in their assessment of the different approaches used in providing reproductive health information. Significant differences were found in health promotion in schools, internet, school-based sex education, availability of reproductive health services as well as availability of family planning delivery services. No significant differences were found for peer education.

The assessment shows that for the primary group the following approaches were popular to them: peer education (mean 4.17), health promoting in schools (mean 3.82), school-based sex education (mean 3.55), availability of family planning delivery services (mean 3.76) and finally availability of reproductive health services (mean 3.70). The teenagers in secondary schools ranked the following four approaches highly: health promotions in schools (mean 4.28), peer education (mean 3.94), availability of family planning delivery services (mean 3.93), and internet (mean 3.64). The group (out of school) found the following approaches more significant to them: availability of family planning delivery services (mean 4.35), peer education (mean 4.29), availability of reproductive health services (mean 4.17), and health promoting in schools (mean 3.82). These results imply that, when disseminating reproductive health information to teenage girls, one should consider the level of education. Choosing the right approach will also increase access to reproductive health information among teenage girls.

In Wilson's general model of information behaviour, activating mechanisms explain why some people need results in information seeking but others do not. The model is connected to the findings in the current study by explaining that teenage girls sought reproductive health information depending on the effectiveness of the approaches used in accessing reproductive health information. Analysed data showed that Health promotion in schools was ranked the highest by teenage girls in terms of its effectiveness in providing information on reproductive health. Choosing the right approach will increase access to reproductive health information among teenage girls.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, conclusions and the recommendations.

5.2 Summary of the Findings

The target population in the study comprised all teenage girls who were aged between 13-19 years in and out of school in Kaptembwo, Nakuru Kenya. The accessible population comprised of selected teenage girls from ages 13-19 years from Nakuru West Secondary School (408 teenage girls), Kaptembwo Primary School (183 teenage girls) and Youth for Christ Group Nakuru (90 teenage girls), making a total of 681 teenage girls. Data was collected from a sample of 127 teenage girls aged between 13-19 of Nakuru West Secondary School, Kaptembwo Primary School and Youth for Christ Group Nakuru.

Majority of the teenage girls were in the age bracket of between 16 and 19 comprising of 86 (67.7%), while 41(32.3%) were in the age bracket of between 13 and 15 years. These results indicate that age of the teenagers significantly influences their access to reproductive health information. The older teenagers had higher access to reproductive health information than the younger ones.

Analysed data shows that majority of the teenage girls (57.5 %) were in the secondary level of formal education, (33.9 %) were in the primary level and 8.6 % were out of school. Education was associated with access and use of reproductive health information. The level of formal education has implication on access to reproductive health.

Majority of the teenage girls (85%) were Christians, while the remaining 15% were Muslims. The findings revealed that teenagers from Christian and Islamic backgrounds are accessing reproductive health information and services.

5.2.1 Sources of Information on Reproductive Health among Teenage girls in Kaptembwo, Nakuru.

Thirty-three point nine percent (33.9 %) of the teenage girls reported that they received their information on reproductive health from their peers. These findings show that teenage girls prefer sharing information on reproductive health among their friends (peers) because they have similar experiences/age orientation. Twenty-five point two percent (25.2 %) of the teenage girls reported that they received their information on reproductive health from

religious teachings. Seventeen point three percent (17.3 %) of teenage girls acknowledged that they received their information on reproductive health from their parents (mothers). Thirteen point four percent (13.4 %) of the teenage girls reported that they received their information on reproductive health from health care workers. These findings show that most teenage girls do not seek reproductive health information from health care workers. Ten point two percent (10.2 %) of the teenage girls reported that they received their information on reproductive health from mass media.

Analysed data showed that seventy point eight seven percent (70.87%) of the teenage girls said that, the health care workers were friendly to them when passing information on reproductive health while 29.13% said that, health care workers were not friendly. These findings show that health care workers are willing to assist teenage girls in accessing reproductive health information.

The result shows that, majority of teenage girls (55.12%) state that, the level of cooperation among health care workers was fair. (35.43%) state that the level of cooperation was average and 9.45% state that, the level of cooperation among health care workers was good. These findings indicate that, health care workers were willing to pass information on reproductive health but teenage girls were reluctant in asking questions concerning information on sexual and reproductive health.

5.2.2 Effects of Socio-Economic Factors on the Access to Reproductive Health Information

Four socio-economic characteristics were investigated in this study to see their effect on the access of reproductive health of the teenagers. They included: education, poverty, income and place of residence. The majority of the teenagers (54.4 %) in the study area had a medium level of access to reproductive health information. 28.3% had low level of access to reproductive health and 17.3% had high level of access.

The level of formal education attained by the teenagers significantly influences the access to reproductive health information. It was found that those teenage girls who were in Secondary School accessed reproductive health information with greater percentage compared to respondents with lower levels of education.

Regression analysis indicates that the poverty levels had a negative and significant influence with β= -.350 and p=.000 on the access to reproductive health information. These results indicate that, the level of poverty significantly influences the access to reproductive health information. The teenagers with a higher level of poverty accessed reproductive health information at a lower rate.

Regression analysis indicates that formal employment of the parents had a positive and significant influence with β= .392 and p=.000 on the access to reproductive health information. These results indicate that the formal employment of the parents significantly influences their access to reproductive health information.

Regression analysis indicates that financial support by the parents had a positive and significant influence with β = .309 and p=.000 on the access to reproductive health information. These results indicate that the financial support by the parent significantly influences the access to reproductive health information.

Regression analysis indicates that number of parents (or two parent families) had a positive and significant influence with β = .181 and p=.000 on the access to reproductive health information. These results indicate that the number of parents significantly influence the access to reproductive health information.

5.2.3 Effectiveness of Different Approaches Used in Providing Information

The results show that health promotion in schools was ranked highly (a mean score of 4.10) by the teenagers in terms of its effectiveness in providing information on reproductive health to them and school-based sex education was ranked the lowest (mean score of 2.92).

The assessment shows that for the primary group, the following approaches were popular: peer education (mean 4.17), health promotions in schools (mean 3.82), availability of family planning delivery services (mean 3.76) and finally availability of reproductive health services (mean 3.70). The teenagers in secondary schools ranked the following four approaches highly: health promotions in schools (mean 4.28), peer education (mean 3.94), availability of family planning delivery services (mean 3.93), and internet (mean 3.64). The group (out of school) found the following approaches more significant to them: availability of family planning delivery services (mean 4.35), peer education (mean 4.29), availability of reproductive health services (mean 4.17), and health promotions in schools (mean 3.82).

5.3 Conclusions of the Study

Majority of the teenage girls reported that they received their information on reproductive health from their peers because they have similar experiences. The level of formal education attained by the teenage girls significantly influences the access to reproductive health information. Health promotion in schools was ranked highly by the teenage girls in terms of its effectiveness in providing information on reproductive health. The study further concludes that determinants (sources of information, socio-economic factors and approaches) have been found to be interacting with access and use of reproductive health information among teenage girls.

5.4 Recommendations

This section presents the recommendation of the study to the National government, County government and the public. The recommendations include:

i) Sex education should take place both at home and in school. There is need for parents to be confident and step up to educate their teenage girls about sexuality. At the same time, sex education should be mandatory for primary schools and secondary schools.

ii) National Government and County Government should fund family planning programmes to ensure that any teenage girl, regardless of income, has access to reproductive health information and services.

iii) There should be a consensus among teachers, religious leaders, parents, policy makers and all other stakeholders. The consensus should aim at promoting sex education in schools.

iv) Social media should be used as an alternative important communication channel for reaching teenage girls concerning all issues on sexual and reproductive health. This would include utilizing social networking and internet forums to disseminate sexual and reproductive health information. Most teenage girls prefer internet because it is confidential to them. Teenage girls can access reproductive health information through their mobile phones.

v) All teenage girls need to know all contraceptive options, how to use them, their effectiveness and what can happen when they have unprotected sex.

vi) Different methods of reproductive health services should be made available and should cover a broad range of contraceptive methods so that teenage girls can access without traveling long distances. This is necessary to ensure that all teenage girls have the knowledge to make informed decisions about their sexual and reproductive health.

vii) Parents should create a conducive environment that will enable the teenage girls to ask questions, express their thoughts and ideas and seek clarifications on sexual and reproductive health issues.

viii) There should be training of more peer educators to complement the health service providers in passing teenage girls friendly reproductive health information to their peers.

ix) The government and other stakeholders should try mobile clinic approach and incorporate them in school health services so that these services are taken to schools on specific days.

x) The ministry of health should invest in improved pre-service and in-service health care workers training on how to handle teenage girls' sexual and reproductive health.

xi) There is need for parents to provide finances to enable teenage girls to seek for reproductive health information.

5.5 Suggestions for Further Research

Based on the findings of this study, the researcher recommends that further research studies be done on the following areas to further understand access and use of reproductive health information:

i) A comparative study between informal and formal settlements needs to be done to gauge their access and use of reproductive health information among teenage girls.

ii) The same study in the same study area needs to be done involving teenagers with disabilities.

iii) Role of teachers in promoting access and use of reproductive health information among teenagers in primary schools and secondary schools in Nakuru.

iv) Use of social media in accessing reproductive health information among adolescence in the same study area.

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APPENDIX A: QUESTIONNAIRE

Dear Respondent,

My name is Janet Chepkoech, a student at Egerton University pursuing Master of Information Science. I am undertaking a research on "The Determinants for Access and Use of Reproductive Health Information among Teenage girls in Kaptembwo, Nakuru County, Kenya." I am kindly requesting for your cooperation in filing this questionnaire to the best of your knowledge. The information you provide will be treated with utmost confidentiality and will be used purely for academic purposes only.

Thank you.

Contacts

0721336563.

Instructions: Tick (√) in the box where applicable.

SECTION A

Background information

1. How old are you?
   - 13-15 years ☐
   - 16-19 years ☐
2. What is your current level of education?
   - Out of school ☐
   - Primary level ☐
   - Secondary ☐
3. What is your religion?
   - Christian ☐
   - Muslim ☐
   - Any other ☐

SECTION B

Sources of reproductive health information among teenage girls

4. Please state where you normally get information on reproductive health by ticking only one preferred source in the box below.

Religious teachings	
Peers	
Mass media	
Health care workers	
Parents	

5. How is the level of access to reproductive health information in your area?
   - Very low ☐
   - Low ☐
   - Medium ☐
   - High ☐
   - Very High ☐

6. How is the reception by the health care workers in your health centre?
   - Friendly ☐
   - Not friendly ☐

7. How do you rate the level of cooperation with health care workers in giving you information on reproductive health?
   - Good ☐
   - Average ☐
   - Fair ☐
   - Poor ☐

SECTION C

Socio-economic factors affecting access and use of reproductive health information among teenage girls

8. What is your current level of education?
   - Out of school ☐
   - Primary ☐
   - Secondary ☐

9. Using a Likert scale below, where the Likert items have a score range of 1-5 with 5 being Very High, 4 being High, 3 being Medium, 2 being Low while 1 being Very Low, show the effects of the following socio-economic factors on access and use of reproductive health information. Please tick ( ) all as appropriate.

	Score Range				
Likert Item	**1**	**2**	**3**	**4**	**5**
Level of Education					
Level of Poverty					
Formal employment					
Financial support					
Two parent family					

10. Is your parent (s)/ guardian (s) employed?

    Yes ☐

    No ☐

11. Do you get any financial support from your parents/ guardians?

    No ☐

    Yes ☐

12. Do you live with both of your parents?

    Yes ☐

    No ☐

SECTION D

13. **The effectiveness of Approaches used in accessing and using reproductive health information among teenage girls**

Using a likert scale below, where the likert items have a score range of 1-5 with 5 being Very High, 4 being High, 3 being Medium, 2 being Low while 1 being Very Low. Please tick ( ) all as appropriate.

	Score Range				
Likert Item	**1**	**2**	**3**	**4**	**5**
Health promotion in schools					
Use of internet					
School based sex education					
Peer education					
Availability of reproductive health services					
Availability if family planning delivery strategies					

APPENDIX B: INTERVIEW SCHEDULE

SECTION 1: Preliminary section

1. **Appreciation and Introduction:**

I want to first and foremost thank you for agreeing to participate in my study. I know that your time is very valuable and so I would not want to take much of it. Before beginning the interview, I want to tell you more about the purpose of my study and let you know what kind of questions I will be asking you, and address issues of confidentiality.

2. **Overview of Purpose and goals:**

My hope for this research is to get to find out whether selected socio-economic factors (Education, income, poverty and place of residence), sources of information and approaches used affect access and use of reproductive health information among teenage girls. In the course of our conversation, I will ask you questions about your professional and personal background to help me better understand who you are. There are no rights or wrong responses. Instead, I am interested in learning about your own unique opinion and viewpoint.

3. **Confidentiality:**

As a researcher, I will write about what you tell me. When I write about your experience, I will use a pseudonym for you. I may quote things that you say in my thesis, but I will never use your name. I will also like to assure you that your responses will be purely used for academic purposes and under utmost confidentiality such that no one will be able to know that you participated in this research.

4. **Recording:**

In order to be able to make sure that I can give you my complete attention during the interview, I will only make occasional notes. With your permission, I will digitally record our conversation so that I can have the interview transcribed. If you want to see any part of the transcript, I can provide you with a copy.

SECTION 2: Personal Background

Before we start, I would like to share with you a little bit about myself.

1. Where I was born.
2. Education.

Do you have any queries for me before we start?

If you have any questions at any time during the interview, please feel free to let me know.

SECTION 3: Interview Schedule Questions for School Head Teachers Only

1. Are the teenage girls aware of reproductive health in your school?
2. How is the reaction of the teenage girls in the discussion of reproductive health?
3. Is it good to discuss reproductive health information topic in class?
4. Are the teenage girls free with you in discussing any topic on reproductive health?
5. Where do they get reproductive health information?
6. Is there any unit in your lessons dealing with reproductive health information?
7. Are there teenage girls who have dropped out of school because of reproductive health related issues?
8. What challenges do you encounter dealing with teenage girls who are not aware of reproductive health information?
9. Do you normally hold meetings with parents and discuss the way forward concerning reproductive health information to their teenage girls?

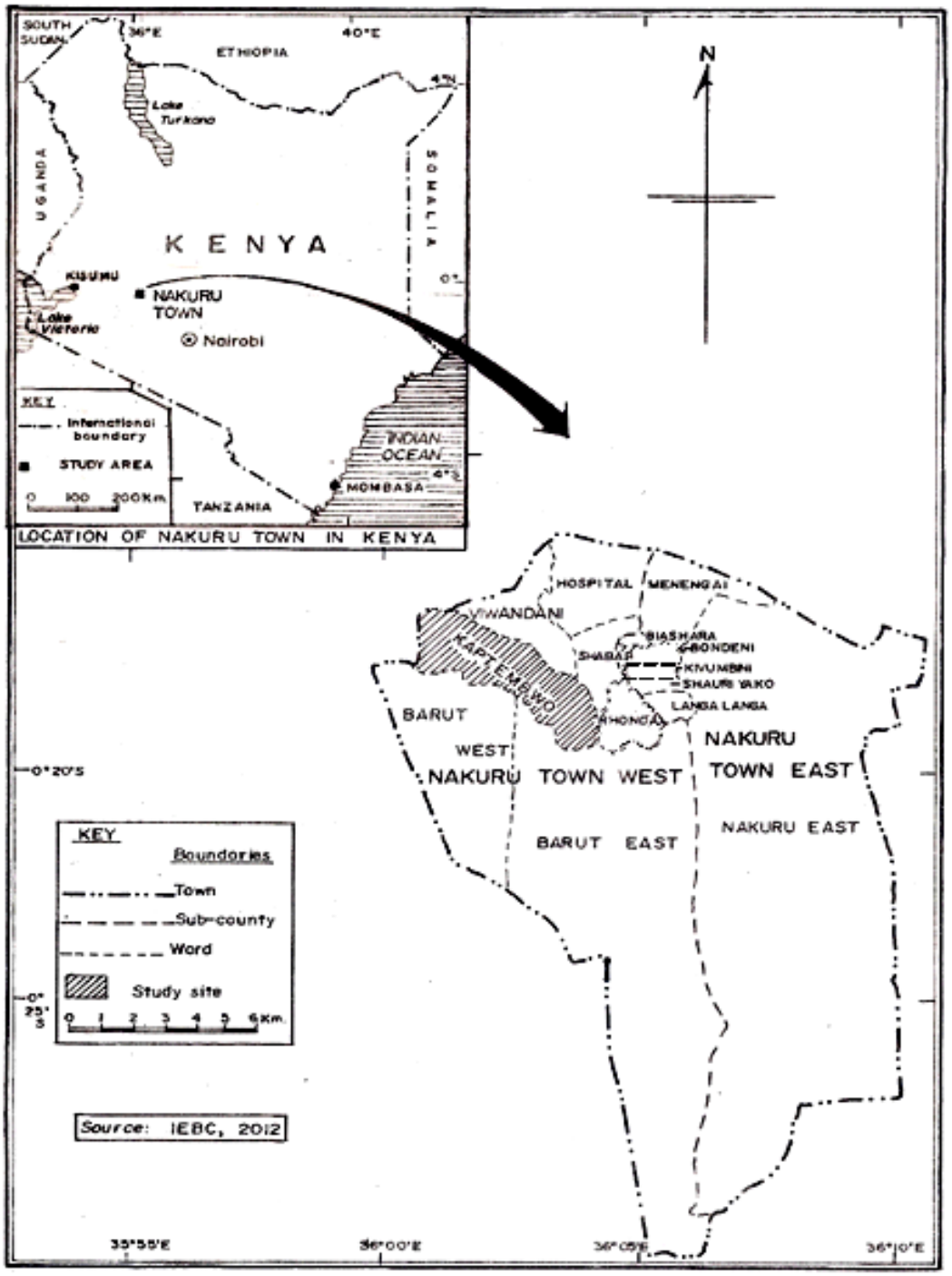
SECTION 4: Interview Schedule Questions for Health Care Workers in Rhonda Health Centre

1. How often do teenage girls visit your health care centre to seek reproductive health information?
2. Which information are they inquiring most? Is it reproductive health information or general health information?
3. Are you free to share information on reproductive health with teenage girls?
4. Are the teenage girls free with you in sharing information on reproductive health?
5. Do you normally go to schools and households to raise awareness on reproductive health information?
6. Do you encounter challenges when passing any information on reproductive health to teenagers?

SECTION 5: Interview Schedule Questions for the Head in Youth for Christ Group Nakuru

1. What causes teenage girls in this group to drop out of school at this early age?
2. Do they get help from their parents in terms of finances?
3. Are the teenage girls in this group aware of reproductive health information?
4. Do you normally encourage them to seek reproductive health information?
5. Where do they get reproductive health information?
6. Are they free in sharing reproductive health information with you?
7. How is the reaction if they heard a topic on reproductive health?
8. Do you encounter challenges when passing any information on reproductive health to teenagers?

APPENDIX C: MAP OF NAKURU TOWN



APPENDIX D: RESEARCH AUTHORIZATION DOCUMENT

THIS IS TO CERTIFY THAT:
MISS. JANET CHEPKOECH
of EGERTON UNIVERSITY, 0-20100
NAKURU,has been permitted to conduct
research in *Nakuru County*

on the topic: *THE DETERMINANTS FOR ACCESS AND USE OF REPRODUCTIVE HEALTH INFORMATION AMONG TEENAGE GIRLS IN KAPTEMBWA, NAKURU, KENYA*

for the period ending:
5th April,2018

.....
Applicant's Signature

Permit No : NACOSTI/P/17/66718/16541
Date Of Issue : 5th April,2017
Fee Recieved :Ksh 1000

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No.A 13677

CONDITIONS: see back page

APPENDIX E: RESEARCH AUTHORIZATION FROM COUNTY COMMISSIONER

THE PRESIDENCY
MINISTRY OF INTERIOR AND
CO-ORDINATION OF NATIONAL GOVERNMENT

Telegrams:" DISTRICTER", Nakuru
Telephone: Nakuru 051-2212515
When replying please quote

COUNTY COMMISSIONER
NAKURU COUNTY
P.O. BOX 81
NAKURU

Ref. No. ***CC.SR.EDU 12/1/2 VOL.II/144***

26TH April, 2017

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION – JANET CHEPKOECH

The above named student has been given permission to carry out research on "***The determinants for access and use of reproductive health information among teenage girls in Kaptembwa, Nakuru Town west***" Nakuru County for the period ending **5th April, 2018**.

Please accord her all the necessary support to facilitate the success of her research.

JUDITH A ONYANGO
FOR: COUNTY COMMISSIONER
NAKURU COUNTY

APPENDIX F: RESEARCH AUTHORIZATION FROM THE COUNTY DIRECTOR OF EDUCATION

MINISTRY OF EDUCATION
State Department of Basic Education

Telegrams: "EDUCATION",
Telephone: 051-2216917
Fax: 051-2217308
Email: cdenakurucounty@yahoo.com
When replying please quote
Ref. NO.
CDE/NKU/GEN/4/1/21 VOL.V/59

COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY
P. O. BOX 259,
NAKURU.

26th April, 2017

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION:
JANET CHEPKOECH –
NACOSTI PERMIT NO.P/17/66718/16541

Reference is made to letter ref. NACOSTI permit No. P/17/66718/16541 dated 5TH April, 2017.

Authority is hereby given to the above named to carry out research on ***"The determinants for access and use of reproductive health information among teenage girls in Kaptembwa, in Nakuru County Kenya,"*** for a period ending 5th April, 2018.

Kindly accord her the necessary assistance.

MOSES. KIARIE
FOR: COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY

Copy to:

Egerton University
P. O. Box 536-20115
EGERTON