

# **SEXUAL ACTIVITY AMONG ADOLESCENT SCHOOL GIRLS IN KISUMU COUNTY.**

**Investigator:**

**Dr Nyasoro Nicholas Ogweno**

*MBChB*

*Senior House Officer, Obstetrics and Gynecology, University of Nairobi.*

*November 2011*

**Supervisors:**

Professor. J.B. Oyieke.

*MBChB, M.MED Obs/Gyn, Associate Professor of Obstetrics and Gynecology, University of Nairobi, Consultant Obstetrician and Gynecologist Kenyatta National Hospital.*

Dr. J.N. Kiarie

*MBChB, M.MED Obs/Gyn, MPH, Senior Lecturer, University of Nairobi, Consultant Obstetrician and Gynecologist, Kenyatta National Hospital.*

A dissertation, submitted to the University of Nairobi, Department of Obstetrics and Gynecology in partial fulfillment of the requirements, for the award of Master of Medicine in Obstetrics and Gynaecology

University of NAIROBI Library



0536088 8

**DECLARATION**

This dissertation is my original work and has not been presented elsewhere. References to work done by others have been clearly indicated.

Signature.....

Date..20.12.11.

**Dr.Nyasoro Nicholas Ogweno**

**Approval:**

This dissertation has been submitted with our approval as University supervisors:

Signature.....

Date..03.01.12

**Prof. J.B Oyieke**

Signature.....

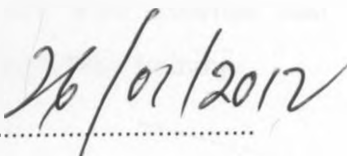
Date..3/1/2012

**Dr. J.N. Kiarie**

**CERTIFICATE OF AUTHENTICITY**

This is to certify that this dissertation is the original work of Dr. Nyasoro Nicholas Ogweno, MMed student in the Obstetrics and Gynaecology Department, College of Health Sciences, University of Nairobi, under the supervision of Prof. J.B.O.Oyieke AND Dr. J.N.Kiarie. It has not been presented in any other university for award of a degree.

Signed.....

Date.....

**PROF. KOIGI KAMAU**  
ASSOCIATE PROFESSOR OF OBSTETRICS AND GYNAECOLOGY.  
CONSULTANT OBSTETRICIAN AND GYNACOLOGIST  
CHAIRMAN  
DEPARTMENT OF OBSTETRICS/GYNACOLOGY  
UNIVERSITY OF NAIROBI.

## ACKNOWLEDGEMENT

To my University of Nairobi supervisors, Prof. J.B. Oyieke and Dr. J .N. Kiarie for their immense guidance, support and patience through this process. ▣

To Dr's: Aggrey Akula, Janet Wasiche for their guidance and encouragement, Population Council, Kenya for providing research material and encouragement. To my late father J.E.O Nyasoro for immense support throughout my postgraduate studies, lastly to my wife Roseline and son Keith for patience and encouragement during my postgraduate training.

<b>TABLE OF CONTENTS</b>	<b>page No.</b>
Section 1.1-Abbreviations.....	5
Section 1.2-Abstract.....	6
Section 2.1-Introduction.....	8
Section 2.2-Background and Literature Review.....	9
Section 2.3-Justification.....	14
Section 3.1-Research Question and Objectives.....	15
Section 3.2-Conceptual Frame Work.....	16
Section 3.3-Variables.....	19
Section 3.4-Methodology.....	20
Section 3.5-Data Plan.....	20
Section 3.6-Study Limitations.....	23
Section 3.7-Research Ethics.....	25
Section 4.1-Results.....	26
Section 4.2-Discussion of Results.....	42
Section 4.3-Conclusion.....	48
Section 4.4-Recommendations.....	49
Section 4.5-References.....	50
Section 5.1-Appendix A-Consent.....	54
Section 5.2-Appendix B-Questionnaire.....	58
Section 5.3-Appendix C-Tools and Guidelines.....	63
Section 5.4-Appendix D-Budget.....	64

## 1.1-ABBREVIATION

AIDS.....	Acquired immune-deficiency syndrome.
BMI.....	Body mass index
CSA.....	Center for the Study of Adolescence
HIV.....	Human immune-deficiency Virus.
KDHS.....	Kenya Demographic Health Survey.
KFS.....	Kenya Fertility Survey.
MDG.....	Millennium Development Goal.
S.T.I's.....	Sexually transmitted Infections.
UNFPA.....	United Nation Population Fund.
WHO.....	World Health Organization.

## **1.2-ABSTRACT**

**Background:** Adolescents are beginning sexual activity at a young age; most of them have no knowledge on dangers of having unprotected sex. Understanding motives that drive young girls to begin having sex is crucial as it will help in implementing evidence based policies on adolescent reproductive health.

**Objective:** To describe the circumstance and determinants of sexual debut and activity among school girls aged 13-15years in rural set up.

**Design:** Cross-sectional descriptive study.

**Setting:** Primary and Secondary schools in low socio economic (rural) area of Kisumu County.

**Participants:** School going girls between 13-15years.

**Methods:** Eligible girls who gave adolescent assent had their height and weight taken (for B.M.I), breast Tanner staging was done in a private area with a chaperon then the girls were allowed to answer a self administered questionnaire.

### **Results:**

Sexual activity was generally low, only 22% of the participants had begun sexual activities. Seventy nine percent of sexual debuts took place in home set ups. Sexual debut with neighbors was the most common at 42% while only 4% of sexually experienced girls reported having sexual debut with a stranger. Whereas sex suggestions (P value = 0.003), opinions about sexual status of their friends (P value <0.001) and drug use (P value = 0.02) were found to increase likelihood of engagement in sexual activities, religiosity (P value = 0.491) and single parented families (P value = 0.326) were found not to have any risk reduction in this study. Contraceptive use among the sexual debutants was found to be low, only 22.1% of the sexually active girls recalled using any form of contraception at sexual debut.

Age of partners at sexual debut was on average two years older. Seventy nine percent of girls reported having been promised items during sexual debut, with money being the most promised item at 49%.

### **Conclusion:**

Sexual activity among this age group was generally low. Contraceptive use at sexual debut was also low. Predictors of sexual activities included drug use, suggestion from friends to have sex and opinion about their peers' sexual status. Peer influence was a big determinant of sexual activity. Sexual debut with strangers is rare. Partners of sexual debutant girls were on average 2 years older.

### **Recommendations:**

Since the studied population was highly religious as shown by the number of times religious meetings were attended in the preceding month to this study, introduction of sex education in religious meetings from as early as preadolescent could provide an alternative way of educating this population.

Drug use by teenagers has to be addressed as an urgent issue and priority Political good will in addressing issues like drug use and implementation of existing laws. An interesting finding in this study was the venue of sexual debut which has not been reported in many studies on adolescent sexuality hence, need for further studies specifically designed to investigate why homes were the preferred venues of sexual debut.

Educating mothers on how to handle adolescent reproductive health issues should be encouraged as parents and more so mothers are the primary socializes of their adolescent daughters and need to have skills on how to handle the adolescent reproductive health matters.

Promotion of awareness and utilization of youth friendly services to reduce idleness and engage in productive time spending activities.



## 2.1- INTRODUCTION

Most African societies tolerated and even encouraged early marriages for a long time with little attention to adolescent reproductive health; however with advent of H.I.V and awareness to reduce fertility rates, continued ignorance of conditions influencing adolescent choices and sexual behavior is no longer justified.

The 2008/09 population census reports that Kenya's population is growing at about one million persons per year with a growth rate of 2.69% per annum, one of the highest in the world; measures to reduce fertility rates would definitely identify teenage sexuality as one area that will need attention. Early marriage and early onset of sexual activity has a direct impact on age at child bearing, thus the earlier the age of sexual debut, the more the chances of early age of onset of child bearing which lengthens the reproductive period and increases fertility(Aldaka et al,1991).

Various non-governmental organizations in collaboration with the Kenyan government have tried to address various aspects of adolescent reproductive health through various policies and bringing the adolescent reproductive health matters to the main stream of health care and development. One such policy is the 'return to school policy' started by Center for the Study of Adolescence (C.S.A) which allows pregnant school going girls to continue with education and go back to school after delivery. This has been faced by many hurdles including low awareness on the existing guidelines and the implementations as many girls are expelled from school due to pregnancy and only one out of ten returns to school after delivery.<sup>28</sup>

Kenya Demographic Health Survey ( KDHS) 2008/09, reports that 31% of those aged 15-19 years have sex before 15 years; 22-4% of males and 20% of females reported having had sex at least once by age 15 years. Despite this kind of evidence, introduction of sex education to our schools' curriculum has been opposed by various organizations. The idea of uniquely solving problems unique to our society has come thus need to carry out surveys on our adolescents to understand their sexuality and bring them on board to help in decision making on matters of adolescent reproductive health.

## 2.2-BACKGROUND AND LITERATURE REVIEW

The World Health Organization (WHO) defines adolescence as the period between ages 10-19 years, with the period 13-15 years being mid adolescence whilst in Kenya for the purpose of studies; adolescent is defined by both Kenya Demographic Health Survey (KDHS) and Kenya Fertility Survey (K. F.S) as ages between 15-19years.

Estimates indicate that more than half the world population is below the age of 25years, with nearly one third between the age's 10-24years this is the largest youth population in the history of mankind as reported by United Nation Population Fund (UNFPA, 2003). The numbers of youth are still growing, particularly in Sub-Saharan Africa. About 83% of all adolescents currently live in developing countries with Africa holding the largest population. In Kenya, the high fertility rate and declining mortality that are typical of the region have yielded a youthful population. Approximately 42% of Kenyans are younger than 15 years- (Kenya Population and household Census 2009) and over 60% of Kenya's population is below the age of 24years, with the larger proportion being adolescent, indeed more than one quarter of the country's population consists of young people aged 10-24 years.

Adolescence is a transition period of physical, emotional and social maturation that culminates in increased independence, autonomy and greater sense of one's personal identity (Kaaya et al, 2002). Key developmental processes during adolescence include sexual maturation and definition (Haffner, 1998). As young people clarify their sexual values, it's common for them to experiment with sexual behavior (Kelly, 2001), that may increase risk of sexually transmitted infections and result in poor reproductive health outcomes. Therefore, the needs of the reproductive health component of general health increase during adolescence, particularly among young women, hence need to understand (evidence based) and address any arising reproductive health problem.

Early sexual activity and premarital sex is common particularly in developed countries, Africa and the Caribbean. It is less common in Latin America, Asia or Middle East. Between twenty six to sixty percent (26-60%) of unmarried teens in Ghana, Kenya, Liberia, Togo and other Sub Saharan African countries report being sexually active

(Lema V.M, 1990; Maggwa A.B.N, 1988; Nichols et al,1986; Nichols et al, 1987;United Nations news 1989). In Kenya, Lema (1987) found a mean age at first coitus of 15 years with the youngest being 5 years. In the same study, he showed that 72.6% of sexually experienced (had had at least one sexual act) girls started coitus within the age bracket of 14-17years. Maggwa (1988) in a study on rural girls found that 42% of teenage girls between ages 13-19 years had at least had their first sexual contact. Wangwe (1995) found that 77.3% of teenagers aged 13-19years (in Baba Dogo village in Ruaraka Nairobi) were sexually experienced and 63.1% of these had had their first coital activity by age 15years.

Kenya Demographic Health Survey (KDHS) 2008/2009 found that the Median age at first sex among women 20-49 years was 18.2 years, with regional variations. Nyanza province had the lowest age of sexual debut at 16.4years.The survey further revealed 12% of women aged 20-49years had their first sexual contact by age 15years and about half the women in this age group had the first sexual contact by the eighteenth birthday. It further reports that 31% of those aged 15-19years have had sex before 15years; 22.4% of men and 20% of women reported having had sex at least once by age 15years. Different studies are obviously showing different results on the mean age at sexual debut (KDHS 2008; Wangwe, 1995; Lema V.M , 1987) but the fundamental issues are what are the circumstances and motives behind the first sexual act? Part of the explanations given as to young age at first sexual intercourse is reducing age of menarche, Buga (1996), showed that age at first coitus was found to be positively correlated to age at menarche and age at menarche has been shown to be decreasing over the years(Maggwa, 1988; Petit et al, 2004). Menarche is a sign of sexual maturity hence girls having early menarche may falsely think they are mature and experiment sexually.

Kreutner (1978) argued that the sporadic and unplanned nature of adolescent sexual activity discourages regular use of contraceptives( this is particularly true at the first coitus), coupled with erratic ovulation, increases risk of teenage pregnancy; an immature reproductive tract puts these young girls at a risk of Sexually Transmitted Infections (STIs).

Adolescent sexuality has been shown to have the greatest impact with women who started intercourse early having a higher sero-prevalence of HIV, carcinoma of the cervix

and proven tubal factor infertility compared to those who did not (Kavoo L.A.P,1988; Mulandi T.M, 1989; Okumu. C, 1989).

Pettit (2004) showed that age of first intercourse is a positive predictor of high risk sexual behavior (sexual behavior that makes one susceptible to STIs and pregnancy), while Mnyika et al (1997), observed that in both man and woman early sexual debut (age less than fifteen years of age) is associated with multiple sexual partner (Mnyika et al 1997). Khasiani (1985) in a study in Nairobi showed that sexual activity in adolescence is generally unprotected associated with serial monogamy increasing life time number of partners.

Consequences of early sexual activity include a whole spectrum of diseases ranging from curable STIs e.g. cervicitis to potentially life threatening sequel of unwanted pregnancies like clandestine abortions with life threatening complications like septic abortion. Teenagers with unwanted pregnancies are more likely than older women to have clandestine or illegal abortions due to legal, social and financial reasons. Youri (1993) found that among adolescents who got pregnant while still in school 47% had abortions while 53% gave birth. Rogo (1992) reported that 90% of adolescent pregnancies are unwanted. According to a study of 1058 female adolescent (Ilinigumugabo, 1995), 9% of them had attempted to have an abortion, 53% of those who attempted fell ill, and 25% had to be hospitalized. The consequences of unsafe abortion include hemorrhage, perforation of viscera, infection, chronic pelvic pain, infertility and death ( Wanjala et al,1988). Teen pregnancies that are carried to at least second trimester present with maternal and neonatal complications e.g. pre-eclampsia and eclampsia, low birth weight among others. Compared to women in their twenties pregnancy in adolescents carries higher risk of death related to pregnancy and child birth, obstructed labour, maternal disability, neonatal and infant mortality (Markovitz et al, 2005, Mayor 2004).

School dropouts due to teenage pregnancy result into missing out on basic education and reduced potential to achieve desired career.

Generally sexual debut among females takes place between a younger female and an older male partner who is also in most cases more sexually experienced and often exposed to other sexually active females with associated risk of transmission of STI'S. A study done in Uganda (Sewankambo, 2003) showed that age difference between female

and male partners was a significant risk factor for HIV transmission and HIV prevalence in young people and this risk is partly due to transmission from the older male partners. Much as the Kenyan government through the Division of Reproductive Health and C.S.A have introduced the 'return to school policy' poor implementation of this policy has resulted in severe limitation of educational and career achievements among girls who get pregnant while still in school, further the new role of taking care of the infant reduces academic achievement potential.

Many African societies place high value on virginity at marriage especially for females. However, with increasing globalization, urbanization and other social changes, there are destructive changes in sexual values of young people (Gage and Meekers 1993); with a general trend towards initiating sexual activity early and increased values on sexual gratification rather than on safer sex (Kelly 2001). Rural urban migration in particular as shown by Lema and Njau (1991) has weakened the extended family networks that regulated sexuality and contraception. In a medical news report, (by IRIN/news plus, 2009) teacher/ pupil sexual relationships in Nyanza province was noted to be placing young school girls at high risk of pregnancy and HIV infection. The province was cited to have a high teen pregnancy rate and the highest high school drop outs in Kenya the highest HIV prevalence in the country.

For the purpose of this study, sexual act was defined as any penetrative penovaginal contact.

To achieve Millennium Development Goal (MDG) 2 of universal primary education and MDG 3 on (elimination of gender disparity in primary and secondary education by 2015), it will be critical to address consequences of early sexual activity including school dropout due to unwanted pregnancy. Understanding the circumstances and determinants of sexual activity among this age group will be critical in developing strategies to prevent teenage pregnancy and reduce school dropouts due to pregnancies.

Teenage pregnancy is associated with high maternal mortality and morbidity and infants of young mothers are at a higher risk of death than those of older mothers ( Markovitz et al 2005). Therefore prevention of teenage pregnancy by understanding determinants of sexual debut and working at delaying sexual debut is key to the achievement of MDG 5, (reduction of maternal mortality) and MDG 4,( reduction of child mortality).

Few studies have been done on adolescent sexuality in Kenya, particularly on sexual debut and among mid adolescents and sexual behavior immediately after the sexual debut, some of the reasons to this trend in research include ethical concerns and focus on older population thought to be at immediate risk of contracting H.I.V and other sexually transmitted infections (S.T.Is) and in urgent need of contraception among others, hence this provides an opportunity to study this least understood group of adolescents.

In absence of curative treatment for HIV/AIDS which is mostly sexually transmitted, prevention remains the most effective weapon against the pandemic.

Increased understanding and knowledge of sexual behaviors of in-school adolescents can present opportunities for effective evidence based interventions to curtail unfavorable reproductive health outcomes.

F.

### 2.3-JUSTIFICATION:

Studies have shown that women who sexually debut at an earlier age are more likely to participate in high risk sexual behavior. Due to physiological and immunological immaturity of the female reproductive tract are more susceptible to HIV/AIDS infections and other STIs (Pettit 2001). Therefore there is need to identify the drivers of sexual debut and motivation to continue sexual activity in this vulnerable group, to help in adolescent counseling, inform policy makers and sex educators.

Early initiation to childbearing lengthens the reproductive period and subsequently increases fertility, with Kenya's population standing at 38.6 million and is estimated to be increasing at 1million per year(population growth rate of 2.69% per annum), the highest ever recorded, Kenya Population and Household Census-2009 prevention of teenage pregnancy, by delaying age of sexual debut is one major way of reducing the fertility rate.

Choice of Kisumu East District in this study was arrived at based on findings from KDHS 2008/09 showing that Nyanza province had the lowest age at sexual debut among all the provinces in Kenya; the District also had an organized educational office with proper register of schools within the district, as opposed to other district that had recently been subdivided and did not have proper records. The population in this District is predominantly rural.

The age bracket 13-15years chosen in this study has been based on the fact that few studies have been done locally on this age group, most studies ( e.g. K.F.S and K.D.H.S) focus on the older adolescent of 15years and above, leaving out the mid adolescents who are either beginning to have sex or are faced with the difficult decision of when and what are the safe sexual practices; KDHS 2009 reports that 31% of girls aged 15-19years had had their first sexual contact before the age of 15years, thus understanding factors that influence their decisions regarding sexual debut and sexual practices would be best captured in this age group.

### **3.1-RESEARCH OUESTION**

What are the circumstances and determinants of sexual debut among school girls aged 13-15 years in Kisumu rural in Kenya?

#### **OBJECTIVES**

##### **Broad Objective;**

To describe the circumstance and determinants of sexual debut among school girls aged 13-15years in Kisumu rural, Kenya.

##### **Specific objectives;**

Among girls aged 13-15 in rural set up

1. Determine the proportion of girls who are sexually experienced.
2. Describe circumstances around the sexual acts in terms of characteristics of sexual partner, condom use, promises, contraceptive use and expectations and venue of sexual debut.
3. Determine association between sexual debut and; physiological characteristics, religion, parenthood, peer influence and recreational drug use.



### 3.2-Conceptual frame work.

#### **Narrative**

In efforts to reduce HIV infection rates, control population growth, reduce maternal and infant morbidity and mortality, addressing adolescent reproductive health issues is very important. Teenage sexuality is one of the most grey areas in reproductive health. This is mostly as a result of perception that sexual debut or sexual activity should begin later on in life and matters sexuality are not to be discussed in adolescent. Much as the community is in denial the limited studies that have been done have shown that indeed young boys and girls are engaging in sex. Curious girls facing the challenges of secondary sexual characteristics, hormonal changes, peer influence and to some influence of recreational drugs, these compounded by lack of contraceptive knowledge, safe sex practices put the young girls at risks of pregnancy and sexually transmitted diseases.

Kenya's National Reproductive Health policy that operates on the theme of 'Enhancing the Reproductive Health status for all Kenyans' with emphasis that the high quality care reaches the ones who needs it most and the most vulnerable groups. This vulnerable group of girls need evidence based facts to help them make decisions. Introduction of sex education in schools, has been opposed based on social norms without any scientific or research backing or have been given low priority in terms of budgeting, policy implementation and work force yet there is demand for adolescent reproductive health services .

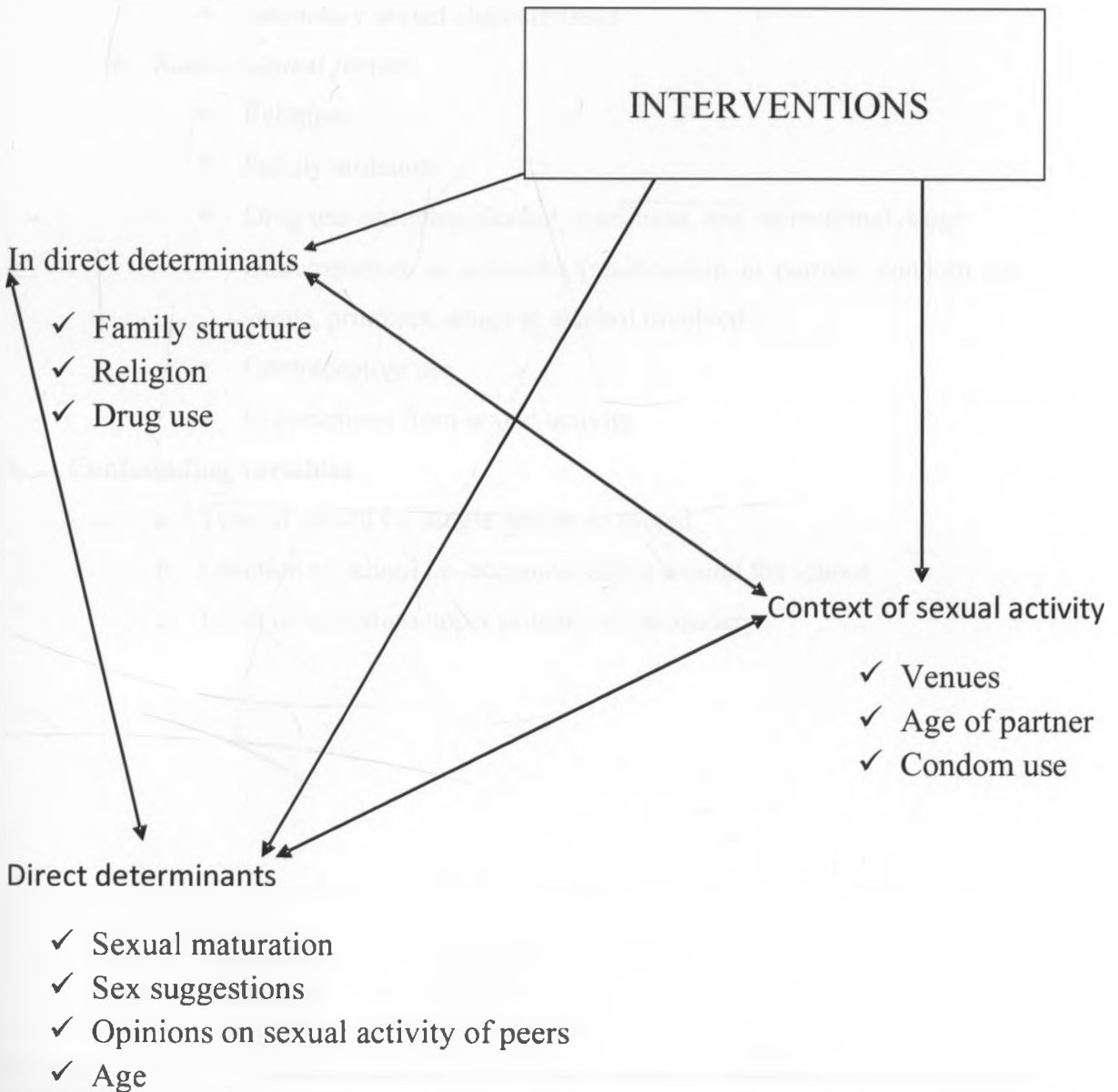
Well informed policy makers, backed by scientific evidence would be able to shift budgetary allocation, prioritization and monitor implementation more keenly. A well informed teenager can be able to delay onset of sexual activity and incase decides would have the knowledge and skills to practices and negotiate for safer sex.

Thus the most important tool in addressing matters of adolescent sexuality is educating the adolescent on possible factors that might influence her decision making, benefits and dangers of early onset of sexual activity, how the adolescent could deal with certain scenarios e.g. peer influence, encourage health seeking behavior in case of sexually transmitted diseases and pregnancies.

Interaction between determinants of sex and context of sex is bidirectional in most instances, interventions then addressing some determinants is likely to influence the other important determinants. In trying to understand circumstances around sexual debut and sexual activity among adolescents, the complex interplay between direct and indirect determinants and context of sexual activity ought to be clear.

**Conceptual frame work.**

**Diagrammatic.**



### **3.3-VARIABLES**

#### **I. Outcome variables**

Adolescent sexual debut and sexual behavior

#### **II. Predictor variables**

##### *a. Physiological factors*

- Breast tanner staging
- Body mass index (weight and height gain)
- Age at menarche
- Secondary sexual characteristics

##### *b. Socio cultural factors*

- Religion
- Family structure
- Drug use including alcohol, marijuana, and recreational drugs
- Circumstances at coitarche (relationship to partner, condom use, venue, promises, drugs or alcohol involved)
- Contraceptive use
- Expectations from sexual activity

#### **III. Confounding variables**

- a. Type of school i.e. single gender or mixed
- b. Location of school i.e. economic status around the school
- c. Level of education upper primary vs. secondary

### **3.4- METHODOLOGY**

#### **Study site and setting;**

The study was carried out in Kisumu East District, Nyanza province, Western Kenya. Kisumu East District is about 380 kilometers from Nairobi, the capital city of Kenya. It has a population of 473649 as per 2009 population census. According to Education Management Information System.(E.M.I.S, 2008), it has a total of 252 registered schools.

#### **Design**

This is a cross sectional descriptive study among school going girls aged 13-15 years in upper primary and early secondary classes. Participants were enrolled from randomly selected schools in Kisumu East District. Participants were further randomly selected from the participating schools.

#### **Study population**

The study was carried out among school going girls ages 13-15 years in Kisumu East District. It has a population of 473649 and an approximate population of 381123 girls aged 13-15 years (2009 population census).

#### **Inclusion criteria**

All adolescents girls within the ages 13-15 years, both years included.  
Enrolled in selected schools.

#### **Exclusion criteria**

All adolescent girls within the age's 13-15 years both years included but declined to participate in the study.

**Sample size calculation** (Woolson 1987).

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

Where: Z is critical value for 95% confidence interval=1.96

P is proportion of girls estimated to be sexually active who are 13-15 years=63%

d is the level of precision= 5%

$$n = \frac{1.96^2 \times 0.63 \times 0.37}{0.05^2}$$

=359 girls

### **Sampling method.**

Multistage sampling method was used first to select the participant schools then secondly to select individual participants from the selected schools.

A list of all schools within the District with population of girls between the ages of 13-15 years, was obtained from the District Education Office, the list of schools was then arranged in alphabetical order (creating the school sampling frame) systematic sampling method was used to select the participating schools, selecting every 3<sup>rd</sup> school from the sampling frame, beginning with the fourth school on the school sampling frame. From the selected schools, using the school enrollment list or the class register as reference, a list of all eligible girls was obtained, arranged in alphabetical order then numbered from the first name being number one to the last number on the list (creating the participant sampling frame), a formula  $p=k/n$  was used to pick the individual study participants from the sampling frame.

Where             $p$ =the number of a participant on the sampling frame  
                     $k$ =population of eligible participants  
                     $n$ =the sample size (359 girls)

### **3.5-DATA PLAN.**

#### **Data collection**

- Research assistants were 4 nurses with reproductive health training.
- A questionnaire in English language was used to collect data on socio demographics, attitudes towards sex, religion, parenthood, peer influence and circumstances around the sexual acts.
- Weighing scale and tape measure were used to obtain weight and height. Calculators were used to calculate B.M.I. (see Appendix for B.M.I. Calculation formula)

#### **Training**

The research assistants were trained and mentored before the start of the study. Training involved B.M.I calculation, breast Tanner staging, how to administer the questionnaire and ethical issues regarding this study.

#### **Pre-test**

A pretest was carried out in the area of study, mid May 2011 in order to help adjust errors on the questionnaire. Pre test interviewers were the pre trained research assistants. Twenty interviews were carried out and the questionnaire modified based on the results.

#### **Data analysis and presentation of results.**

The questionnaire was pre coded; the coded answers from the questionnaire were entered onto a data sheet. Statistical Package for Social Scientists (SPSS) was used for data analysis. Descriptive analysis begun with summaries of age, tanner staging and B .M.I from the questionnaire, this data was presented descriptively in form of means or median for the continuous variables and mode for categorical variables and pictorial presentation using bar graphs and pie charts, tables were used to demonstrate important observations.

### 3.6-LIMITATIONS OF THE STUDY

- This study involved human sexuality, a sensitive topic regarding morality so the information relayed might not be accurate, resulting into inaccurate data and result interpretation, however, participants were be asked to fill in the questionnaire as accurate as possible and furthermore no identifiers were being used in the questionnaire and the sampling frame developed was locked up at all times also, the questionnaire was to be self administered unless the participant asked for help in form of interpretation of a question thus maintaining privacy.
- Failure to consent after participants have been picked, this was solved by registration of extra participants.
- Poor or improper interpretation of questions either due to language used in the questionnaire or level of intelligence; which could have resulted in either failure to answer a question or giving a wrong response to a question, hence reduced number of participants responding to a variable thus reducing the level of accuracy and statistical significance, making it hard to make inferences. This was addressed by enrolling research assistants who understood the local dialect and English language to help the participant in question interpretation whenever need be, secondly the questionnaire was pretested among the study population and adjustments made where necessary before the study begun.
- This study involved breast exam for Tanner staging and selected participants could have refused or become reluctant to give assent, which could have reduced the sample size and made it hard to make statistical inferences; to address this, the researcher gave a talk to participants before the study begun stated the purpose for that and introduced the research assistants who were to carry out the breast Tanner staging. Secondly, female research assistants were preferred for this reason to improve comfort and privacy.
- This study had 343 respondents out of the targeted 359 participants, giving a response rate of 96%. This shortfall had been anticipated and extra participants enrolled. The study was interrupted by heavy rains that made the roads inaccessible and caused absenteeism of the participants for up to 2 weeks, hence the shortfall.

- The eligibility criteria in this study was based on age and accurate age determination was needed. To address the age accuracy issue, the class teachers were asked to assemble the pupils before the onset of the study and the pupils were to verbally report their ages and write their dates of birth which was then to be counter checked with the ages in the school records.

n



### **3.7-RESEARCH ETHICS**

This study involved young adolescents ages 13-15years, eighteen years is the age of consent according to Kenyan laws but adolescent assent was obtained.

This study protocol was submitted to Kenyatta National Hospital/University of Nairobi Institutional Research Ethics and Review Board, the study was not to commence before approval by the board, and was approved, see appendix A .

This was a minimal risk study in that it did not interfere with participants daily activities. Confidentiality of the participants was upheld, this was achieved by training personnel involved in data collection, data entry personnel on research ethics and need for highest level of confidentiality. All collected data was locked up in safe only accessible to principal investigator, data collectors and data entry personnel.

Informed consent was obtained from the District Educational Office and the respective school administration.

Participant gave adolescent assent both verbal and in written form before start of the study.

Participants who were not willing to participate in the study were allowed to leave the study without and did not suffer any losses.

#### **Benefits of the study**

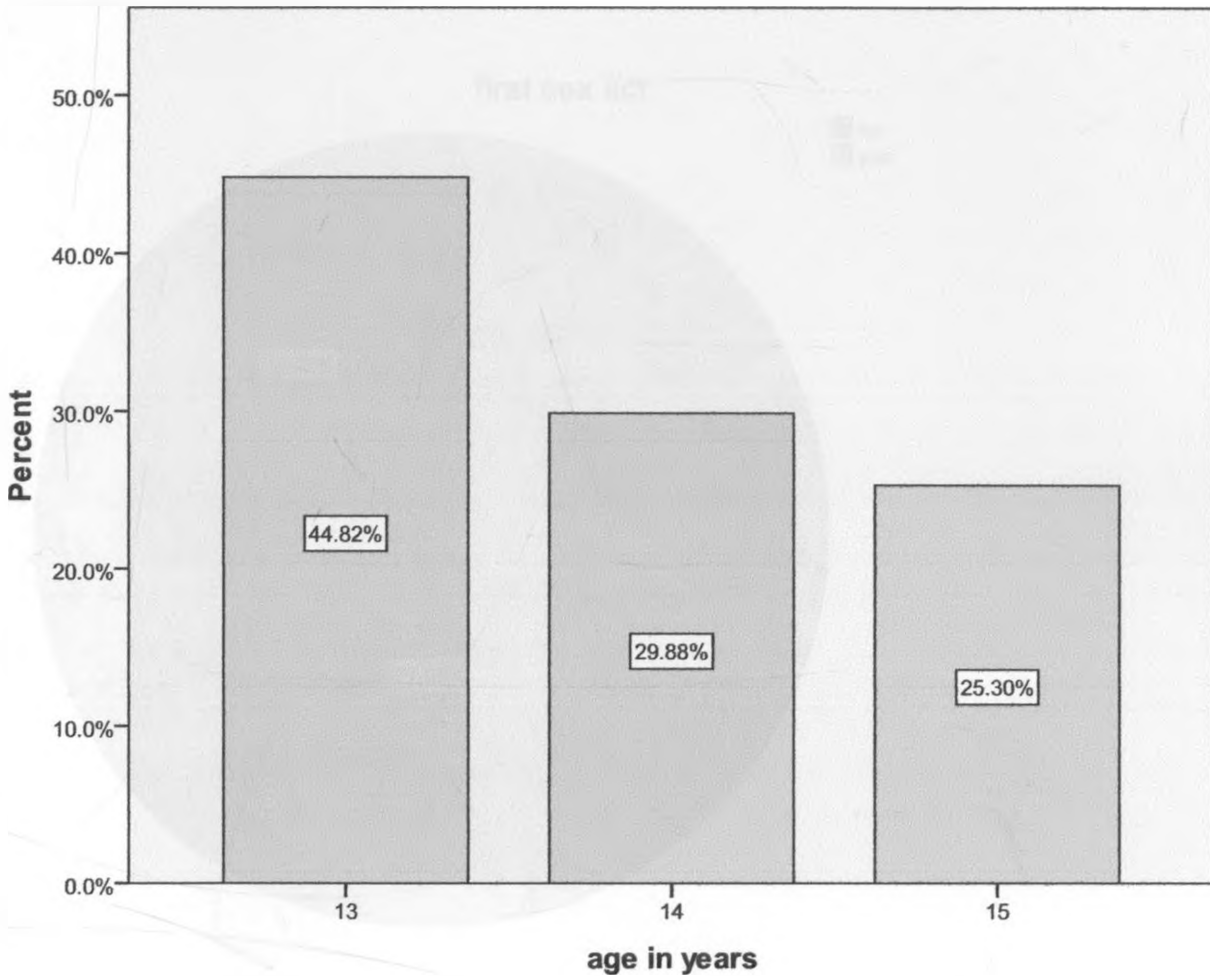
This study had no direct benefits to any individual but generally it will help understand issues around teenage sexuality to help develop youth friendly policies, holistically improving adolescent reproductive health.

## **4.1-RESULTS**

### **Age**

Three hundred and forty three participants out of a targeted three hundred and fifty nine participants were recorded giving a response rate of 96 %. Majority of participants were within the 13 years old. Majority of participants were thirteen years old (44.82%) fourteen year olds were 29.88% and fifteen year old were 25.30%, this gave a mean age of 13.8(SD 0.9) years (figure 1) .

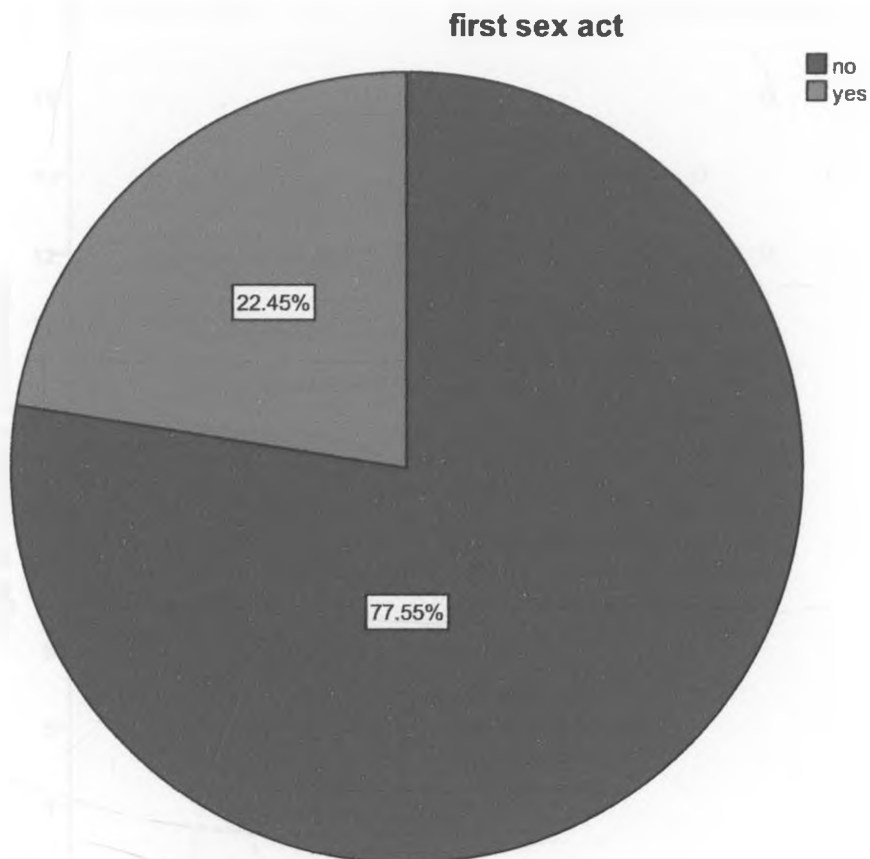
**Figure 1-age distribution**



## Proportion of sexually active girls

A majority of the participants had not had any form of sexual experience with only seventy seven (22.4%) girls reporting having had sex at least once and two hundred and sixty six (77.6%) reporting no sexual experience.

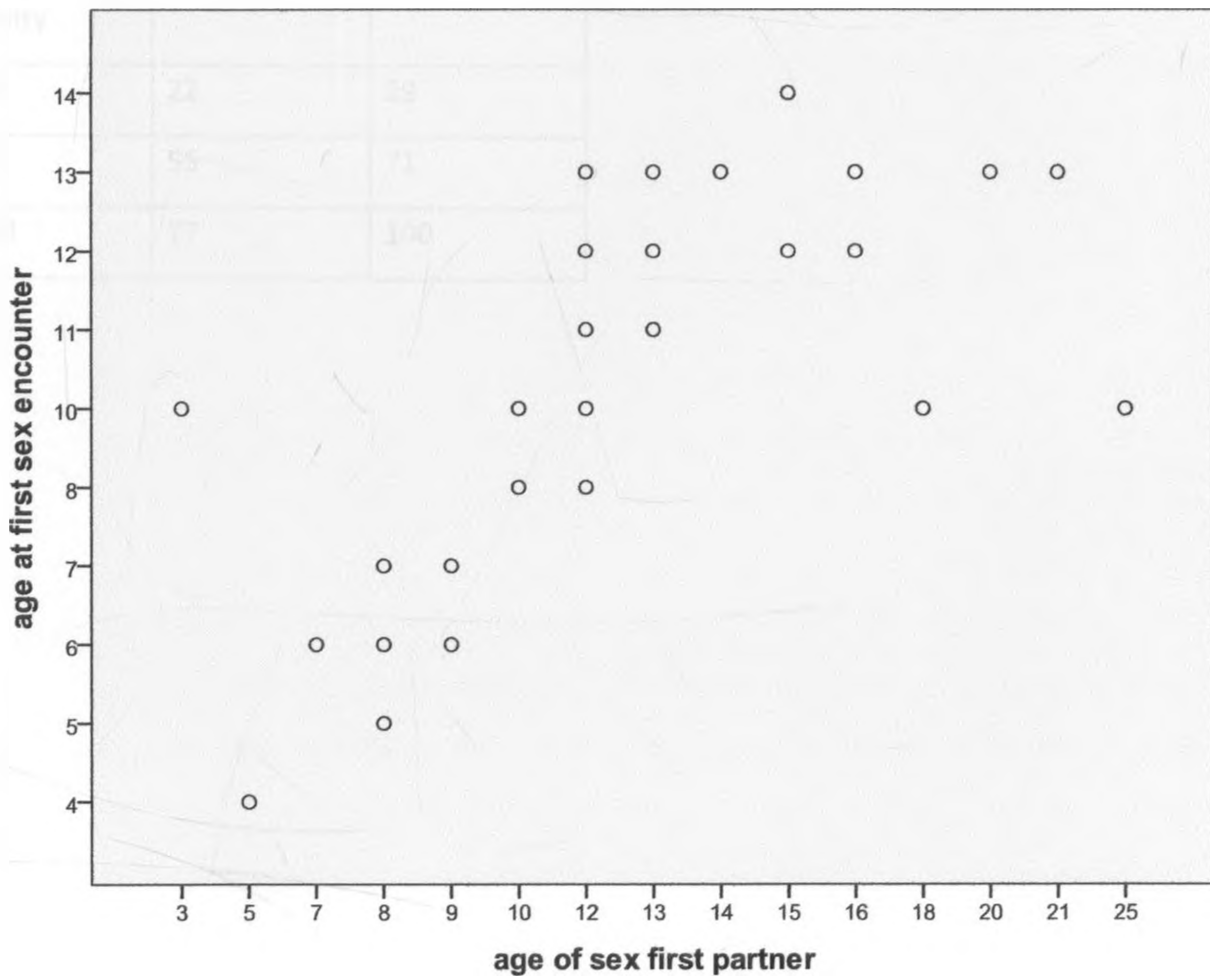
**Figure 2-Pie chart showing proportion of sexually experienced girls**



## Age at sexual debut

Among the sexually active girls the mean age at sexual debut was 10.3 (SD 2.6) years. The mean age of the first sex partner was 12.1 (SD 4.6) years, indicating that sexual partners were on average 2 years older.

**Figure 3-Relationship between age at sexual debut and age of first sex partners**



### **Sexually active in last 6 months**

Sexual activity was generally high among the sexually active group with a majority fifty five out of seventy seven (71%) having had sex in the preceding 6 months before the study was carried out.

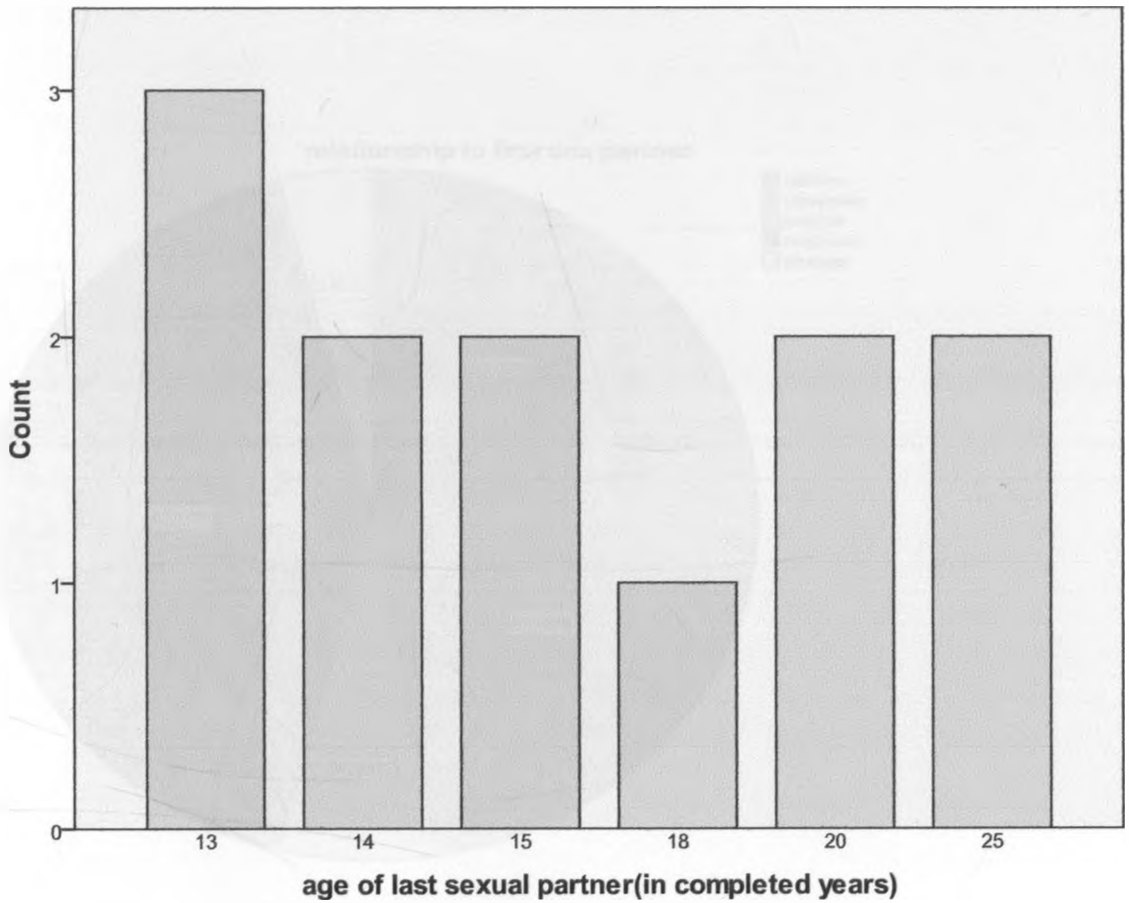
**Table 1-proportion of girls with recent sexual contact( within last 6 months of this study)**

<b>Sexual activity</b>	<b>N</b>	<b>Percentage</b>
No	22	29
Yes	55	71
Total	77	100

## Histogram showing distribution of age of last sexual partner.

For the girls who had had sexual encounter within last six months prior to this study, only 12 out of 55 (22%) girls could recollect the ages of their last partners in completed years. Mean age of last sexual partner was 15.8 (SD 6.2) years. This was a difficult parameter to evaluate since it depends on recall of the young girls.

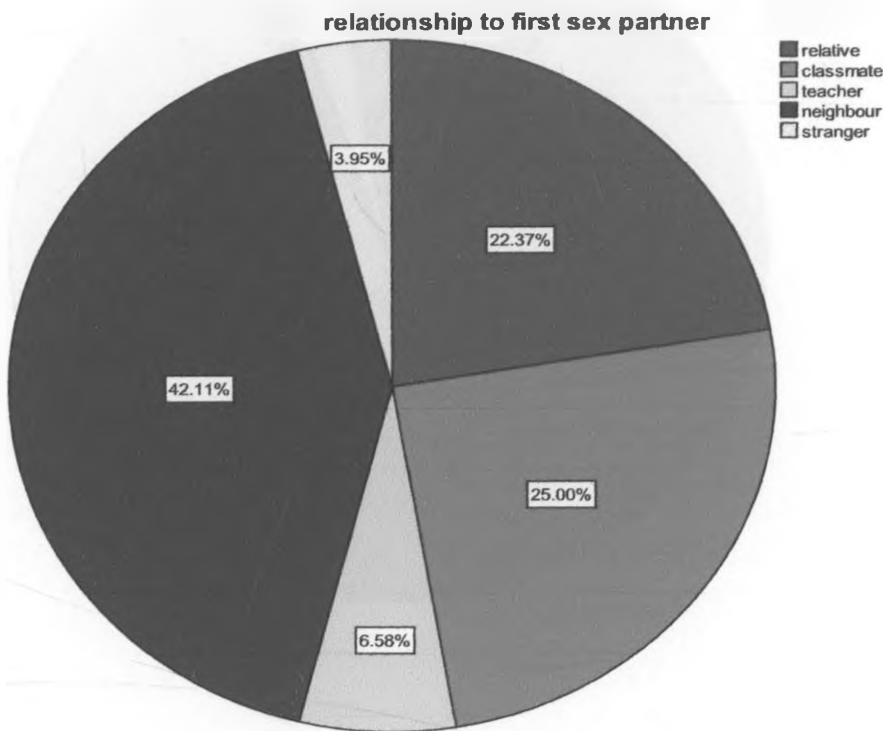
**Figure -4 Age distribution of last sexual partner.**



### Relationship to first sex partner

Sexual debut took place with partners well known to the participant as majority (96.05%) of sexually active participants reported to know their first sex partner. The first sexual partners were neighbors 42.1%, classmates 25%, relatives 24%, and teachers 6.58%. As we expected sexual debut with strangers was not common at 3.95%.

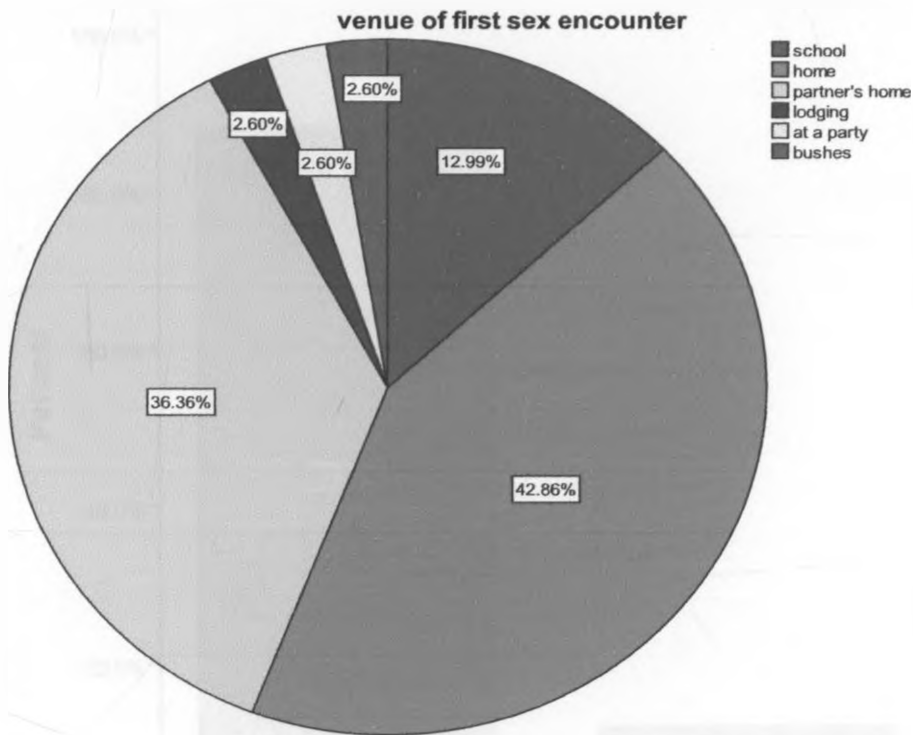
Figure 5-Relationship of the girls to their first sexual partner.



### Venue of first sex

Interestingly, home set ups were the commonest venues reported by sixty (79.3%) of sexual debutants against what we expected. Thirty two (42.9%) had sexual debut at their home and twenty eight (36.4%) had debut at partners homes. Other venues were school 13%, lodging 2.6% and in bushes 2.6%.

**Figure 5-pie chart showing distribution of venues of first sexual encounter**

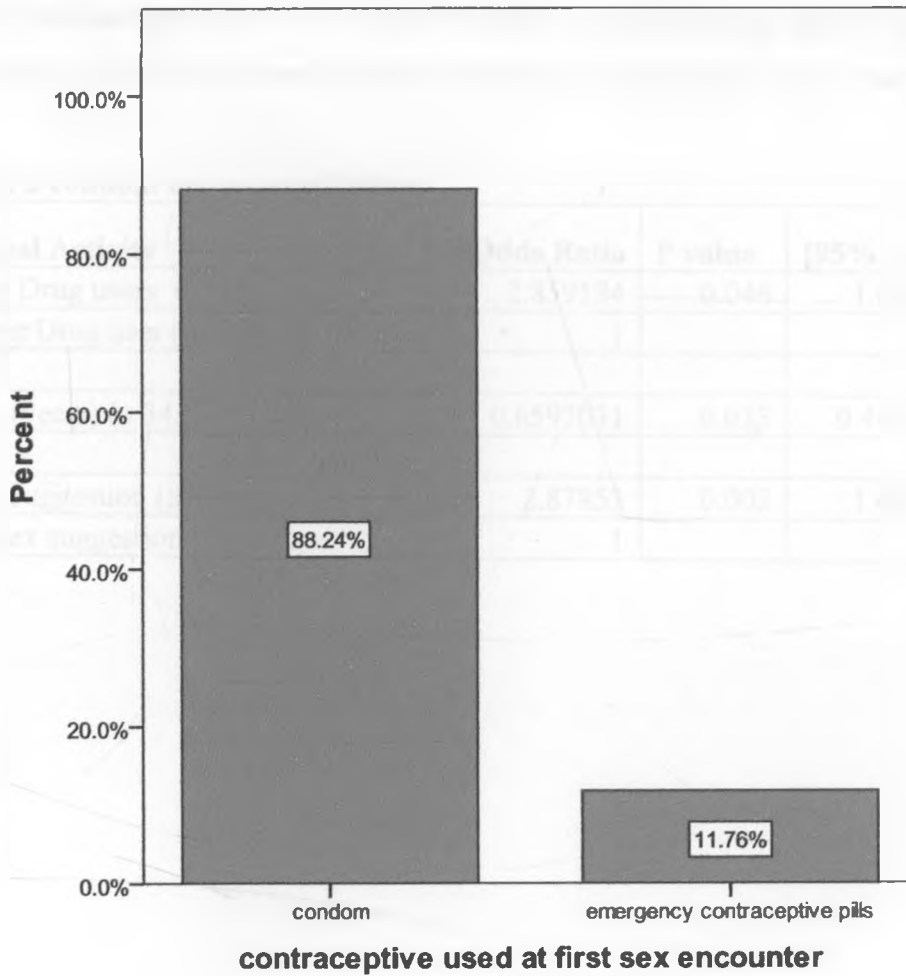




### Contraceptive use at sexual debut

Contraceptive use at sexual debut was not common; only 17 (22%) girls reported using any form of contraception. Condoms were the most commonly used (88.24%) while the other cited method of contraception was emergency pill (11.76%).

**Figure 6-contraceptive use at first sexual encounter.**



### Condom use

This study found that the older the age of the sexual debutant girl, the higher (P value = 0.046) the odds of using a condom at sexual debut with an odds ratio OR (95% CI) =1.49(1.006-2.23).Willingness by the debutant girl to have sex was also shown to be a significant determinant of condom use at sexual debut, those not willing were significantly less likely (P value = 0.029) to use condoms at first sex encounter OR=0.058 (0.005 -0.744).Table below shows multivariate analysis of condom use among sexual debutant girls. The very wide confidence intervals in drug use and sex suggestions may have been brought about by the low numbers of participants who reported the same.

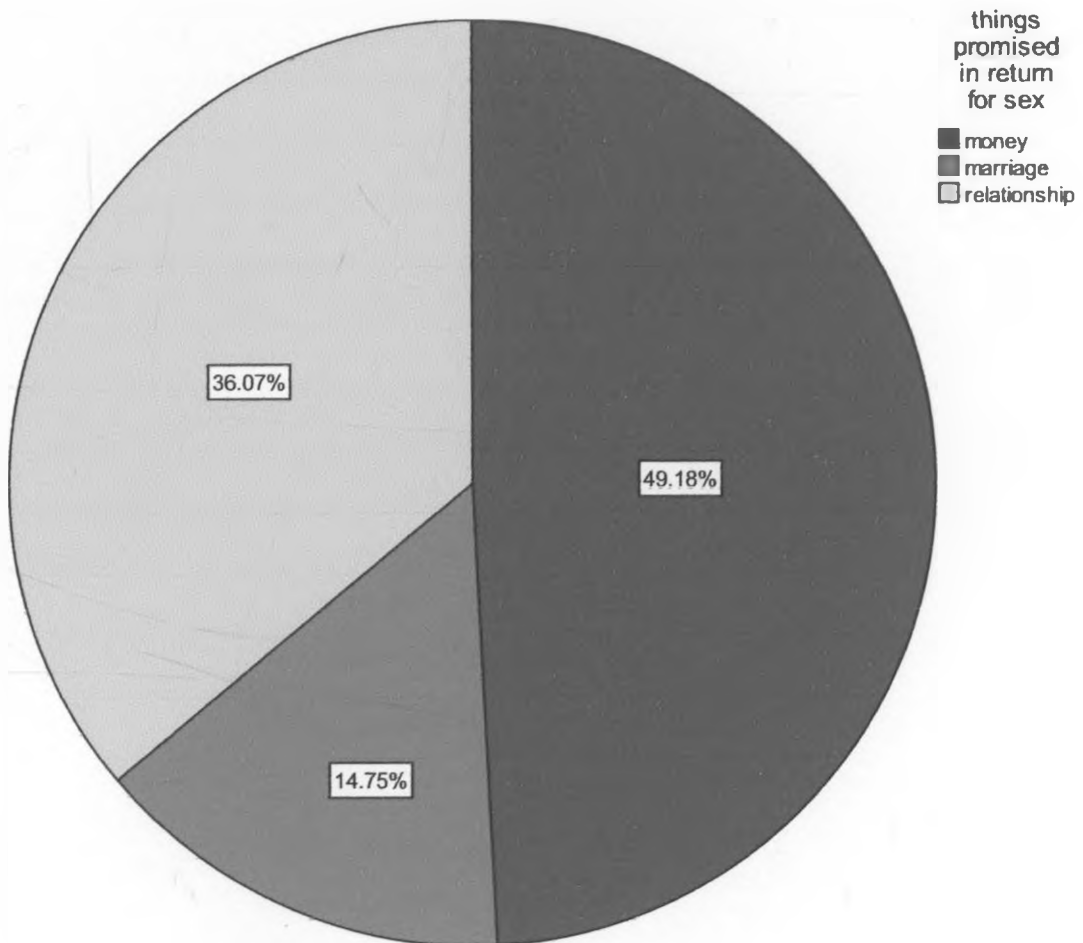
**Table 2-condom use at sexual debut**

Sexual Activity	Odds Ratio	P value	[95% Confidence Interval]	
Ever Drug users (n=25)	2.859184	0.046	1.018531	8.026204
Never Drug user (n 318)	1			
Age (years) (n 343)	0.6592031	0.033	0.4491598	0.9674701
Sex Suggestion (n=82)	2.87853	0.002	1.488809	5.565481
No sex suggestion (n=241)	1			

### Items promised at sexual debut.

As expected, there were items that were promised by sex partners during sexual acts. Majority of the sexually experienced girls 79.2% reported having been promised items in return for sex at sexual debut by their first partners. Money was the most reported item by 49.18%. Other promised items were subsequent relationship 36.07% and marriage 14.75%. This study did not however look at the relationship between age of the girls and the promised items.

**Figure 7-Distribution of promised items at sexual debut**



Majority of the girls (65%) reported to have had expectations after sexual debut. The most reported expectation was a subsequent relationship (74.4%). Other expectations reported included money (28.2%), marriage (15.4%), and sexual experience (10.3%).

**Table 3-expectations after sexual debut**

<b>Expectation after sexual debut</b>	<b>n (%)</b>
subsequent relationship	29(74.4)
money	11(28.2)
marriage	6(15.4)
sex experience	4(10.3)

N/B: the percentages add up to more than 100% due to multiple responses.

### Physiological variables

The girls who had recognizable secondary sexual characteristics were not more likely than their counter parts with less recognizable secondary sex characteristics to have begun having sex.

**Table 4- table showing physiological variables.**

<b>PHYSIOLOGICAL VARIABLES</b>	<b>No n(%)</b>	<b>Yes n(%)</b>	<b>P value</b>
<b>Armpit hair n=337</b>			0.621
Armpit hair present	182 (64.5)	38 (69.1)	
Armpit hair absent	100 (35.5)	17 (30.9)	
<b>Breast changes n=312</b>			1
Noticed enlargement	262 (91.3)	50 (90.9)	
No enlargement noticed	25 (8.7)	5 (9.1)	
<b>Pubic hair n=338</b>		a	0.687
Pubic hair present	227 (80.2)	46 (83.6)	
Absent pubic hair	56 (19.8)	9 (16.4)	
<b>Height n=332</b>			0.688
Increased in height	222 (79.9)	45 (83.3)	
No increase in height	56 (20.1)	9 (16.7)	
<b>Hips n=317</b>			0.923
Increase in size	167 (63)	33 (63.5)	
No size increment	98 (37)	19 (36.5)	
<b>Age in completed years at 1st menstrual period n=343</b>			0.98
median(IQR) inter quartile range	13 (12,13)	13 (12,13)	
<b>breast tanner staging n=332</b>			0.153
B1	37 (13.4)	9 (16.4)	
B2	155 (56)	23 (41.8)	
B3	85 (30.7)	23 (41.8)	
<b>B.M.I n=339</b>		o	0.6171
	284(83.7)	55(16.2)	
Mean (SD)	19.10(4.49)	19.42(2.68)	

key:

**B1= Breast Tanner stage 1 ( see Appendix C)**

## Religion

Majority of participants were Christians, while Muslims were minority at 1 percent, probably due to site of study. Roman Catholics 53.6%, 44% were protestants, only 3 girls had no religious affiliation. Most participants were active in religious activities and 221 (65.6%) reported attending at least one religious meeting in the previous month. The mean number of times religious meetings were attended was 3.1(range 0-4).

There was no difference noted in religion between sexually experienced and none sexually experienced girls. Identifying with any religion did not reduce the risk of sexual activity P value=0.742, neither was the frequency of attending religious meetings associated with reduction in risk of sexual activity.

**Table 4-Religious affiliations**

<b>Religious denomination n=336</b>	<b>No (%)</b>	<b>Yes(%)</b>	<b>P value</b>
			0.742
Roman catholic	148 (52.7)	32 (58.2)	
Protestant	126 (44.8)	22 (40)	
Muslim	3 (1.1)	1 (1.8)	
None	3 (1.1)	0 (0)	
Other	1 (0.4)	0 (0)	
Attended any religious meeting in last one month	187 (65.8)	34 (64.2)	
No religious meetings attended	97 (34.2)	19 (35.8)	
<b>number of times attend attended religious meeting</b>			0.491
median(IQR-inter quartile range)	3 (2,4)	3 (3,4)	

## Family structure.

A small proportion (40%) of participants were single parented. Most single parented girls had mothers as single parents (81.1%). The most cited reason for single parenthood reported by seventy seven (57.9%) of single parented participant was orphan hood, working in a different town was reported by fifty five (42.1%). Single parenthood was not shown to increase the risk of sexual activity in daughters of single parents P value=0.326, non sexually active 38.6 percent versus sexually active 47.1 percent; neither was gender of single parent shown to have any significant statistical difference between sexually active and none sexually active, P value=0.723; nor did orphan hood as a cause of single parenthood P value=0.363.

**Table 5-Association between sexual activity and family structure**

Variable	No(%)	Yes(%)	P value
<b>Parenthood n=331</b>			0.326
Both parents	172 (61.4)	27 (52.9)	
Single parent	108 (38.6)	24 (47.1)	
If single parented		<sup>s</sup>	0.723
Mother	87 (78.4)	21 (84)	
Father	24 (21.6)	4 (16)	
<b>reason for living without any parent</b>	<b>N=140</b>		0.363
Orphaned	64 (55.7)	17 (68)	
parents work in different town	51 (44.3)	8 (32)	

## Peer influence

Majority (56.8%) of the girls who were sexually active thought their friends had sex while only (43.2 %) of the sexually active ones did not think their peers had sex, P value= $< 0.001$ , showing that opinion regarding sexual activity of their peers was a strong determinant of sexual activity. Suggestion by friends to have sex was also noted to be a strong determinant of sexual activity (P value=0.003) with 42.6% of sexually active girls having had suggestions to engage in sexual activity while only 21.9% of the non sexually active have had friends suggest to them to engage in sexual activity.

**Table 6 – Association between sexual activity and peer influence**

Variable	No (%)	Yes (%)	P value
<b>gender of majority of friends n=340</b>			1
Female	265 (93)	51 (92.7)	
Male	20 (7)	4 (7.3)	
<b>Thought of friends having sex n=231</b>			$<0.001$
Thinks friends are having sex	50 (25.8)	21 (56.8)	
Does not think friends are having sex	144 (74.2)	16 (43.2)	
<b>Sex suggestions n=323</b>			0.003
Friends have suggested	59 (21.9)	23 (42.6)	
No friends have suggested	210 (78.1)	31 (57.4)	



## Drug use

Drug use was not common among the participants, only nineteen (5.6%) girls had ever used alcohol, two (0.6%), marijuana and four (1.2%) miraa. Overall drug use was reported by 7.3% of the study participants. Girls who reported drug use were three times more likely to have ever had sex than those who had never used drugs (12.7% vs. 4.2%  $p=0.02$ ). with an odds ratio of 3.35(1.05,9.75)

**Table 7- Association between drug use and sexual activity.**

Variable	No(%)	Yes (%)	P value
<b>Drug use n=343</b>			0.02
Have used recreational drugs	276 (95.8)	48 (87.3)	
No recreational drugs used	12 (4.2)	7 (12.7)	

e.

## 4.2-DISCUSSION

This study is one of the few school based studies done on adolescent sexuality, more so touching on sexual debut and involving girls 13-15 year olds. Other similar studies include 'Factors influencing timing of first sexual intercourse among young people in Kenya' (Tenkorang, Mticka-Tyandale,2008).However this study involved both boys and girls, school going , age 11-17years and reported social pressures as one of the key determinants of early onset of sexual activity, which is similar to our findings that peer influence had a key role in determining onset of sexual activity. The aim of our study was to identify determinants of sexual debut and sexual activity among school going girls aged 13-15years, to educate in policy making and assess implementation.

This study found low levels of sexual activity in this age group of girls as expected and in keeping with other local studies KDHS 2008 and Tenkorang (2008). In this study, no relationship between religiosity, parenthood, physiological changes at puberty and sexual activity was found. Sexual debut with older partners was not found to be common in this study. In keeping with other studies (Tenkorang 2008) and as expected sexual debut with strangers was found to be rare in this study. Venue of sexual debut was mostly at home differing from what we expected. This study found that contraceptive and condom use among sexual debutants was low, similar findings were reported by Wangwe (1995) . Majority of school girls in Kisumu East District were Christians, Muslims were a minority in this study population which is expected for the area studied. Attendance of religious meetings was fairly high in the participants. Differing from what was expected; religiosity was not found to be a negative predictor of sexual activity.

Studies done globally on the effect of religion on adolescent sexuality in general have found that religion reduces sexual activity in adolescents, for example, Wilcox et al.(2001) found religiosity delays onset of sexual activity and possibly reduce sexual activity thereafter. However, Bendan and Corwyn, (1997) in their study have argued that religiosity might not always influence sexual activity and there might be reciprocal association between sexual activity and religiosity, thus religion is not always a negative predictor of sexual activity in adolescents as we found in our study. In our study, religion was not exhaustively evaluated, attitudes towards religion for example, ones view on

importance of religion could give further insight of association since attendance of religious meeting as investigated in this study could have been due to influence from guardians, and not out participants choice thus not representative. Reciprocal influence of sex on religion among the sexually active could also have been a possible influence, also self reporting bias might have led to this, as the participants might have wanted to look more religious than they might be. Since churches/religious meetings is where social norms are taught and reinforced, the high attendance of religious meetings could be used as a venue for sex education, with emphasis on abstinence but also introduction of safer sex practices whenever possible.

In terms of family structure, majority of girls lived with both parents in this study population. Our study found that forty percent of our study participants were from single parented homes, most of which were headed by single mothers, this was also found in KDHS- 2008. The commonest reason for single parenthood in our study was orphan hood while in KDHS-2008 was rural urban migration. Families especially parents remain one of the most powerful socializing influences on sexual attitudes and behaviors of adolescents (Miller, Benson and Galbreth., 2001; Crosby And Miller., 2002)

Interventions such as encouraging positive communication between parents and adolescents in order to address issues of adolescent sexuality will have to look at parents role and target both parents with priority given to mothers being the dominant gender in parenthood. Not as predicted in our study, girls from single parented families were not found to have any statistical significance in terms of risk of engaging in sexual acts. This finding is not consistent with other studies done globally, for example, E.W.

Young., (1991) found that adolescents from two parented families compared to single parented families were significantly less likely to report having ever had sex, i.e. two parent family structures were protective against onset of sexual activity. Main effect of family structure is delay in onset of sexual debut ( Samuel .W Sturgeon, 2008) , hence two parent family structure which has been shown to delay onset of sexual activity should be encouraged as much as possible in matters concerning adolescent sexual and reproductive health, for example, work policies that tolerate transfer of spouses from their families should be discouraged to ensure a two parented family structure is maintained.

As expected for girls of this age group, friendship was with same gender, there were sex discussions among peers but few participants reported having been suggested to by friends to have sex. Importantly, the sex suggestions was associated with sexual activity, however, being a cross-sectional study, we could not establish whether the discussions preceded sexual activity or discussions were sparked by sexual activity. Our study also found that girls who thought their friends had sex were more likely to engage in sexual activity regardless of the true status of sexual activity among the friends, similar findings were also reported by Newcomer et al (1980). This finding would be an important informing point since the peers are having sex discussions, guiding this discussions and giving accurate information to the girls would probably change their opinions and probably reduce sexual activity.

Overall recreational drug use was not common among girls in Kisumu East District, this finding was as we had expected in girls of this age group further reflected by Ndetei (2001) in the report on Information, Needs and Resources Analysis (I.N.R.A). Drug use in this study was shown to increase the probabilities of engaging in sexual activities. Similar findings have also been reported by Mugisha et al (2003). This is probably due to the fact that the drug users were probably risk takers and had a high probability of engaging in sexual activity, also drug use could have impaired judgment making it easier for partners to lure the girls into sexual activity. Benda and Corwyn (1998) in their analysis argued that the association between drug use and sexual activity could be viewed as a 'syndrome' of problem behavior, stemming from a single source e.g. low self control. This study being a cross-sectional study was not able to establish cause effect relationship between drugs and sexual activity. However, as stated above drug use could be viewed as a syndrome of problem behavior and if identified should be used as identifiers of adolescents with behavior problem that might also include high risk sexual behaviors. Further, strict implementation of drug policies should be implemented by National Campaign against Drug Abuse Authority (N.A.C.A.D.A) as it is in Alcoholic Drinks Control Act-2010..

Secondary sexual characteristics were observed and reported in this group of girls. Generally a majority were within the expected stage of sexual maturation, as had been predicted. No significant statistical association was noted to increase probability of sexual

activity in the studied physiological variables. This finding was unexpected. However, few descriptive studies have been done to show the relationship between secondary sexual characteristics and onset of sex among girls hence lacking comparative data. therefore research on secondary sex characteristics and association with sexual debut needs to be looked into further.

In Kenya, there have been several studies in variable set ups focusing on the age of sexual debut with average age reported at 15 years. In this study, since not all girls were sexually active, we could not calculate the average age for all girls, however our study found that 22% of girls were sexually active which is similar to findings in KDHS-2008 where 20% of women reported having had sex at least once by age of 15 years. This low but significant level of sexual activity among girls younger than 15 years in this study is a matter of concern especially in trying to reduce teenage pregnancies, HIV/AIDS and reducing incidences of sexually transmitted infections. In our study, distribution of age of sexual debut ranged from 4-15 years old, the mean age of sexual debut among the sexually active girls was found to be 10.3 years, which is very young. Thus sex education ought to begin in preadolescent or in early adolescent as this might help in delaying onset of sexual activity and reduce risks of STIs.

Sewankambo,(2003) found that intergenerational sex was a significant risk factor in HIV transmission and HIV prevalence among young people although there were reports of sex with older partners. As expected in our study most girls reported sexual debut with partners of similar age group, generally within two years of age difference, also reported by Tenkorang, (2008). Curiosity of the playmates could have led to sexual experimentation amongst the playmates of the same age group. This important finding indicates that in an attempt to reducing implications of early age of onset of sexual debut, both boys and girls of the same age group need to be educated in matters concerning sex. As expected sexual debut with strangers in our study was rare which has also been reported by, Tenokrang (2008). This probably is due to the fact that sexual activity is an intimate activity and some level of trust between the partners more so by the girl is required. If focus on sex education is to be considered as part of tackling teenage sexuality, then focused group discussion including both boys and girls of same age group, in schools and neighborhoods is an important avenue.

An interesting finding in this study was on the venue of first sex. Very few descriptive studies have been done on venue of sexual debut. In our study, we found that sexual debut was more rampant at homes. This is interesting in that homes naturally would be considered safe due to supervision of activities by guardians. Sexual debutants probably know that they are trusted not to indulge in risky behavior around their homes or within the neighborhood thus lower levels of supervision from guardians and little suspicion, allowing the debutant to engage in sexual activity at the least expected venues. Most free time of young adolescents is spent either playing with school mates or neighbors at home could also partly explain this finding in that the unsupervised playing sessions could have led to sexual experimentation. Not many studies have been done on venues of sexual debut, and this needs further research input to further understand reasons for various preferences on venues of sexual debut.

Sexual activity among adolescents have been found to be associated with low, incorrect contraceptive use (Khasiani, 2005; Wangwe, 1995). This was also reported in our study. Condoms were the most favored contraceptive method at sexual debut compared to other contraceptive methods investigated, our study however did not investigate correctness of the condom use, and this might need further evaluation, especially in adolescent boys. This could have been due to the relative ease of getting and using a condom with subsequent fewer side effects compared to hormonal contraceptive methods. The sporadic nature, unpredictability and secrecy involved in sexual acts in young boys and girls could have made it hard to use a condom. Furthermore the process of acquiring a condom would expose intentions of sexual acts by minors, thus making it difficult to get and use a condom at sexual debut. Condom use was mostly associated with older sexual partners and was less likely to be used at sexual debut if the girl was not willing to start sexual activity. Older sexual partners were probably sexually experienced and understood risks of engaging in sex and how to protect themselves, the girls who were less willing to engage in sexual debut might not have analyzed the risk of engaging in sex thus might not have thought of the need to protect themselves from consequences of sex. Sexual activity with low contraceptive use carries a risk of pregnancy. Teenage pregnancies are associated with various problems including high risk of clandestine abortion with associated risk of post abortal sepsis, hemorrhage, chronic pelvic pain and death,

Wanjala et al.,(1996). Teenage pregnancies carried to viability have a high risk of maternal mortality, infant mortality, obstructed labour and complications, eclampsia and pre eclampsia (Markovitz et al,2005; Mayor 2004). Other associated problems of teenage pregnancy include school dropout, family rejection. Correct consistent condom use needs to be emphasized as a content of sex education since the message of abstinence might not always work in reducing HIV/ AIDS infections, S.T.Is and unwanted pregnancies. .

The main predictors of sexual activity included age in years, drug use and suggestions to have sex. Against our prediction, this study found that older girls were less likely to engage in sexual activity. Most studies including KDHS 2008 have shown that there is a steady rise in onset of sexual activity among adolescent with increasing age. Zaba et al, (2004) argued that this kind of trend could be as a result of self reporting bias especially in consideration that message of abstinence has been largely conveyed to the youths. As found in Tenkorang study, peer influence was identified as a huge determinant in adolescent sexuality. In addressing teenage sexuality, reduction of drug use is paramount and needs urgent and priority focus. Peer influence also needs to be addressed as a content of sex education.

15

η

### 4.3-CONCLUSION

- Most girls in this study were not sexually active. Sexual activity begun at an early age.
- Condom and contraceptive use among the sexually active adolescents was low probably due to difficulty in accessing them, ignorance or lack of knowledge as to risks of engaging in sexual activities.
- Despite findings in our study, family structure and especially parenthood is still an important pillar in addressing adolescent sexuality.
- Religion being an institution that imparts social norms, has a significant role in addressing adolescent sexuality especially in cases where family support has failed.
- Drug use is known to have negative impact on sexual activities and general health, thus urgent need to address adolescent drug use.
- Development of secondary sexual characteristics does not increase the risks of engaging in sexual activities.
- Peer influence is a huge determinant in onset of sexual activities.



#### **4.4-RECOMMENDATIONS**

1. Risk reduction measures and benefits of delaying onset of sexual activity should be a major content of sex education. Sex education should begin from preadolescent .
2. Focused group discussions in religious meetings and youth friendly centers involving both boys and girls with the aim of demystifying the inaccurate opinions and educating both gender on consequences of early sex , and safe sex options incase abstinence does not work.
3. Involving religious groups and politicians in studies of adolescent reproductive health might help change the perception and reduce objection to contents of sex education.
4. Implementers of Alcoholic Drinks Control Act-2010 ( mainly N.A.C.A.D.A) must be encouraged to make sure the public upholds the law as it is since it bans underage drug use and punishes retailers who sell drugs to minors
5. Parents should be more vigilant at homes and should supervise the kind of child play going on.
6. Parents especially mothers need to be educated on sex education and encouraged to have positive communication with their adolescent on sexual issues which might help in strengthening the message of abstinence and safe sex.

## 4.5-REFERENCES

1. Kenya population and house hold census 2009/08. [http// Kenya –information guide.com/kenya-population.html](http://Kenya-information-guide.com/kenya-population.html).
2. Aldakha, Arjun, Mohammed Ayad and Sushi Kumar 1991. The role of nuptiality in fertility decline: A comparative analysis in proceedings of the demographic and health surveys World conference, Washington D.C 1991 Vol. 2 Columbia Maryland.
3. Center for the study of adolescence 'return to school policy' [www.csa Kenya.Org/pdf/csa% 20 pregnancy-final %20- edited. Pdf](http://www.csa Kenya.Org/pdf/csa%20pregnancy-final%20-%20edited.Pdf)
4. Kenya demographic and health survey (K.D.H.S) 2008 [www.measuredhs.com/pubs/pdf/ SR178.pdf](http://www.measuredhs.com/pubs/pdf/SR178.pdf)
5. S.F Kaaya, A.J Flisher, J.K Mbwambo, H.Schaalma, L.E Aaro & K.Klepp. A review of studies of sexual behavior of school students in sub-Saharan Africa, Scandinavian journal of Public Health 30 (2002), pp148-160.
7. D.W Haffner facing facts- sexual health for American Adolescents, Journal of Adolescent Health 22(1998) pp. 453-459.
8. G.F Kelly, Sexuality today. The human perspective 7<sup>th</sup> edition, Mc Graw-Hill, New York, NY(2001)
9. Lema, V.M: Factors associated with Adolescent sexuality Amongst adolescent secondary school going in Nairobi J. Obstet. Gyn E.Central Afr. 8:38- 1990
10. Maggwa, A.B.N: Knowledge attitude and practice survey of sexual, contraceptive and teenage pregnancy among teenagers living in rural set-up in Kenya. M.Med Thesis University of Nairobi 1988.
11. Nichols, D. Ladipo, O., Paxim, J., and Otolonin, E. Sexual behavior, contraceptive practices and reproductive health among adolescents. Studies in Family Planning 17, No.2 100-106, 1986
12. Nichols , D., Woods. T., Gates D.S. and Sharman J. Sexual Behavior, contraception practice and reproductive health among Liberian adolescents. Studies in Family Planning 18, No3: 169-176, 1987.
13. United Nations, Dept. of International Economics and Social Affairs, Adolescent Repro behavior. Evidence from Developing countries, vol 2 United Nations News 1989.

er

14. Lema 1987, A Study to determine knowledge, attitude and practice and use of contraceptive in reproductive health, sexual knowledge and behavior among adolescent secondary school girls in cosmopolitan city in Africa, Nairobi Kenya, M.Med Thesis University of Nairobi 1987- pg 30.
15. Wangwe W.B, Sexual, contraceptive and reproductive behavior of teenage girls in a low socio-economic area in Nairobi. M.Med Thesis, 1995.
16. Anna L. Sautham. Metropathica hemorrhagic and non- psychogenic amenorrhea, Adolescent gyn. By Felix P. Heald. (2010) John Hopkins University Press.
17. Petit A.E., van der Starten A, Dumber M.S., Shiboski S.C., Pandin N.S, Early age of first sex a risk factor for HIV infection among women in Zimbabwe. AIDS 2004;18 1435-42.
18. Mnyika K.S., Klepp K.I., Kvale G., Oleking'ori N. Determinants of high risk sexual behavior and condom use among adults in Arusha region in Tanzania. Int. J. STD/AIDS: 1997 Mar: 8 (3): 176-83
19. Kavoo L.A.P.: Seroprevalence of H.I.V antibodies among patients with cancer of the cervix at K.N.H. M.Med Thesis, University of Nairobi 1988.
20. Mulandi T.M.: A Prospective study of STD's and their effects on Cervical cytology in a rural area in Kenya. M.Med thesis, University of Nairobi, 1989.
21. Okumu C., Social background to Tubal infertility at K.N.H, Nbi, Kenya M.Med thesis University of Nairobi, 1989
22. Khasiani 1985, adolescent fertility in Kenya with special reference to high school teenage pregnancy and child bearing, the Pathfinder Fund, Nbi 1985.
23. Gage A.J., Meekers D., Sex, contraception and child bearing before marriage in sub- Saharan Africa, International Family Planning Perspectives, 19 (1993), pp. 14-18 33
24. Kelly R., Gray R., Sewankambo N.K., Serwadda, Wabwire- Mangen, Lutalo T., Waweru M.J., Age difference in sexual partners and risk of H.I.V-1 transmission in rural Uganda . J.Acquir. Immun. Defic. Syndr. 2003 Apr 1; 32(4): 446-51.

25. Youri, P., 1993. Female adolescent health and sexuality study in Kenyan secondary school An interim report. Amref, Kenya.
26. Rogo K.O 1992. Induced abortion in Kenya. Paper prepared for the International Planned Parenthood Federation .Center for the Study of Adolescence. Nairobi, Kenya.
27. Ilinigumugabo, A., 1995. Psychosocial and Health Consequences of Adolescent Girls in four rural communities in Kenya. Center for Family Studies Research Report series No1. CAFS, Kenya.
28. Wanjala S.H.M., Murugu .N.M., Mati J.K.G Mortality due to abortion in K.N.H: Medical porgies and social implications. Ciba foundation symposium 155, 41 London. American Journal of public health, Oct 1988.Int developments of abortion laws: 1977-88
29. Mayor. S (May 2004) pregnancy and child birth are leading causes of death in teenage girls in developing countries. BMJ 328 (7449): 1152-a.
30. Markovitz P. Barry, Rebeka Cook, Louise H. Flick, Terry L. Lect. Socio-economic factors and adolescent pregnancy outcomes: Distinction between Neonatal outcome and post neonatal deaths. BMC Public Health 2005, 5:79 doi :10 1186/ 1471-2458-5-79.
31. Lema V.M. and Njau, W.P. 1991 Abortion in Kenya: A traditional approach to unwanted pregnancy . Center for the Study of Adolescence.
32. INRI/ news plus. Medical news. 2009. [www.newsmedical.net/news/2009/03/31/47693.aspx](http://www.newsmedical.net/news/2009/03/31/47693.aspx).
33. Buga G.A.B., Amoko D.H.A., Adolescent and sexual behavior. Knowledge and attitude of sexuality among school girls in Transkei South Africa, The E.A med Journal vol.73, No .2 Feb 1996 .
34. Muganda R, Onyando, (2008). Counting the costs of teenage pregnancy and school dropout in Kenya: Down the drain. Center for the study of adolescence. C.S.A, Nairobi. <http://www.csakenya.org/pdfs/CSA%20Pregnancy-FINAL%202-EDITED.pdf>

35. Tenkorang E.Y., E. Maticka-Tyndale. Factors influencing the timing of first sexual intercourse among young people in Nyanza, Kenya. *International Family Planning Perspective* Vol.34, No.4, December 2008.
36. Wilcox, B.L., Wright M.L.C., and Randall B.A (in press). The impact of religiosity on adolescent sexual behavior: A review of the evidence. *Journal of Adolescent Research*, in press.  
<http://jar.sagepub.com/content/19/6/677.abstract>.
37. Benda and Corwyn, 1998; Adolescent deviant behavior: Multiple contingency table analyses overlap between behaviors: *Journal of Social Service Research* 24 29-59.
38. Miller B.C., B. Benson and K.A. Galbreth, 2001 'Family relationship and adolescent pregnancy risks: A research synthesis'. *Developmental review*, 21, 1-38.
39. Crosby, R. A., and K.S Miller (2002) Family influence on adolescent females' sexual health. In G.M., Wingood and R.J Clevente, (Eds) *Handbook of Women's Sexual and Reproductive Health*.(pp 113-127).
40. E.W. Young. The effects of family structure on the sexual behavior of adolescent. *Adolescence* 26, No.104 (1991): 977-986.
41. Samuel W. Sturgeon, 2008- Systematic review of research literature examining the Relationship between Family Structure and Adolescent Sexual Activity. [http:// www.family facts.org/ featured finding/ff\\_01.pdf](http://www.familyfacts.org/featured_finding/ff_01.pdf)
42. Newcomer, Susan F., M. Gilbert and J. Richard Udry. Perceived and Actual Same Sex Peer Behavior as Determinants of Adolescent Sexual Behavior. 1980
43. Ndetei. 2001, report on Information, Needs and Resources Analysis (I.N.R.A).
44. Mugisha Fredrick, J.Arinitwe-Mugisha and B.O.N., Hagembe (2003). Alcohol, Substance and Drug use Among Urban Slum Adolescent in Nairobi, Kenya. *Cities*, Vol. 20 No.4 (2003), pp231-240.

45. Zaba, B., E. Pisani, E., Slaymaker and T. Ties Boerma. 2004 "Age at First Sex: Understanding Recent Trends in African Demographic Surveys." *Sexually Transmitted Infections* 80 (Supplement 11): 28-35.

## 5.1-APPENDIX A:

### **Client information and consent form**

**Study:** SEXUAL ACTIVITY AMONG SCHOOL GOING GIRLS AGED 13-15YEARS  
IN RURAL KENYA.

**.Principal Investigator:** Dr Nyasoro Nicholas Ogwen, Masters of medicine student,  
Department of Obstetrics and Gynecology, University of Nairobi. Cell No. 0726629608

### **Supervisor**

Professor J.B OYIEKE

Department of Obstetrics and Gynaecology,  
University of Nairobi.

DR. J.N KIARIE,

Consultant

Obstetrician Gynaecologist

KNH/UON

Professor A.N GUANTAI

SECRETARY

ETHICS AND RESEARCH COMMITTEE.

KNH/UON-ERC

P.O. Box 20723, Nairobi

020726300

### **Researcher's statement**

I am asking you to participate in a research study. The purpose of this form is to give you information about the study on Sexual activity among school going girls aged 13-15years in rural Kenya. The participant schools and the participating individuals are selected

randomly from Kisumu East District hence you have been randomly selected to participate in this study, based on our randomization criteria.

This information will help you decide whether to participate in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what you would be asked to do, the possible risks and benefits, your rights as a volunteer and anything else about the research. When all your questions have been answered, you can then decide whether to participate in the study or not. If you wish, a copy of this form will be will given to you for your records.

### **Purpose and benefit**

The purpose of this study is to determine the circumstances and what determines decision(s) you have made so far in your life regarding your sexual activities. This study will benefit you in various ways, may be not directly as an individual but it will help me identify sexuality problems faced by girls in this age group thus help us make decisions in trying to improve the adolescent sexual health both in your community and at the national level. You will be given feedback from this study upon completion at a feedback meeting organized by the District Education Office. No monetary, gifts or any form of incentives will be given to the participants.

### **Procedure**

My research assistants and I will obtain information about you using a questionnaire. The procedure will involve a physical breast examination by a qualified female nurse, without touching your but this will involve you exposing your chest to the research assistants in a well secured private corner that is screened off from the rest of the room. Subsequently your weight and height will be recorded and by the research assistant, weight measurements will involve you standing on weighing scale without your shoes or carrying any heavy objects, height measurement will involve measuring your height from top of your head to toe by use of a tape measure. You will then be required to fill in a questionnaire that would take about 10-15 minutes of your time , generally the whole process is about 20 minutes.



**Risk, stress or discomfort**

Completing your questionnaire would take approximately 10-15 minutes of your time.

Physical exam, height and weight measurement will take at most 5 minutes.

Emotional stress might be experienced since this study involves sensitive parts of your life i.e. your sexual life, assessment of your breast development. Privacy and confidentiality will be upheld at all times, furthermore highly qualified female nurses will be the only ones doing the breast exams.

**Confidentiality**

All the information obtained from you will be treated with utmost confidentiality. Your name will not appear on the questionnaire. A study number will be used instead. All the information received from you will be on the questionnaire and all the questionnaires will be locked up by the researcher and only he and the data entry personnel will have access to this locker.

You may choose to withdraw from the study, refuse to answer questions without any repercussions.

**Participant's statement.**

I voluntarily agree to participate in the study on sexual activity among school going girls aged 13-15yrs in rural Kenya. I understand that participation in the study does not entail financial benefit. I have been informed that information obtained will be treated with utmost confidentiality. I also understand that I can withdraw from this study at any point without any repercussions.

I have had a chance to ask questions. If I have questions later, I can ask the researcher. If I have questions later about my rights as a research subject or complaints about the study, I can call the ethical review committee at Kenyatta National Hospital on phone number 020726300.

No coercion has been used to influence my decision to participate in the study whose nature, benefits and risks have been explained to me by Dr/Mr./Mrs.

.....  
Subject's Name.....

Subject's signature.....  
Date.....

OR

Subject's left thumb print..... Date.....  
Witness(Teacher/ Administrator) signature.....  
Witness name.....  
Date.....

I ASSURE THAT I HAVE FULLY EXPLAINED TO THE ABOVE STUDY VOLUNTEER/AUTHORIZED REPRESENTATIVE, THE NATURE AND PURPOSE, PROCEDURES AND THE POSSIBLE RISK AND POTENTIAL BENEFITS OF THIS RESEARCH STUDY.

Investigators signature..... Date.....

**QUESTIONNAIRE**

**STUDY NO:**

**CODE:** 1 – YES      2 –NO      3 - DO NOT KNOW

**SECTION A : SOCIAL CHARACTERISTICS**

1. Date of birth (dd/mm/yy) ..... Age in completed years .....

2. Age in completed years at first menstrual period

3. Religion

a. Denomination

i. Roman Catholic

ii. Protestant

iii. Muslim

iv. None

v. Others specify.....


b. Have you attended any religious meetings in the last one month

c. If yes to (b) state the number of times

4. Current living situation

i. Live with both parents?

ii. Live with single parent ( if yes state which parent)

a. Mother

b. Father

iii. Live with none of the parents (if yes state reason)

a. Orphaned

b. Parents working in different town from resident town


5. Have you ever used any of the stated recreational drugs

- I. Alcohol
- ii. Marijuana
- iii. Miraa (khat)
- iv. Others: please specify.....


6. Secondary sexual characteristics

- i. Do you have any armpit hair?
- ii. Have you noticed your breast enlarging?
- iii. Do you have any pubic hair?
- iv. Have you noticed any increase in height?
- v. Have you noticed any increase in hip size?


**SECTION B: EDUCATION**

7. What class are you currently in?

--

8. What position did you attain in the last school term? (please state total number of students in class)

--

9. How far are you planning on going with your studies?

- I. Primary level
- ii. Secondary level
- iii. University /College


10. Are majority of your friends

- I. Female
- ii. Male


**SECTION C : SEXUAL ACTIVITIES**

11. Sex Discussions

- i. Do you discuss sex with your friends?
- ii. If yes do you think any of them have had sex?


12. Have any of your friends ever suggested to you to have sex?

--

13. Have you ever had sex? (if yes continue with Section C; if No proceed to Section D)

i. How old when you first had sex (age in completed years)


ii. What was the age of your first sexual partner? (if known)

iii. What was the relationship between you and your first Sexual partner

- a. Relative
- b. Classmate
- c. Teacher
- d. Neighbour
- e. Stranger


iv. Where was the venue of your first sexual encounter

- a. School
- b. Home
- c. Partner's home
- d. Lodging
- e. At a party
- f. Bushes


v. Were you under the influence of any recreational drug?

vi. Were you willing to have you first sexual encounter?

vii. Were you promised anything in return for sex ?(if yes , what was promised)

- a. Money
- b. Marriage
- C .Relationship


viii. Was any contraceptive used during this encounter? ( if yes, select from options below)

- a. Condom
- b. Emergency Contraceptive pill
- c. Intra-Uterine Contraceptive device
- d. Others , please specify


ix. Did you plan to have your first sexual encounter?

x. Do you regret having your first sexual encounter?


14. Have you had sex in the past 6 months? (if yes answer the following questions if NO proceed to Q>15)

- i. How many partners have you had in the past year?
- ii. Did you use a condom in your last sexual act?
- iii. How many weeks ago was your last sexual encounter?
- iv. Do you have any expectations out of your current sexual relationship? (if yes what are the expectations)
  - a. Relationship
  - b. Money
  - c. Marriage
  - d. sexual Experience
  - e. Others, please specify.
- v. What is the age of your last sexual partner (if know)
- vi. Were you under the influence of any recreational drugs in your last sexual act?

**SECTION D: NONE SEXUALLY ACTIVE**

15. For those who have abstained from sex, what are your reasons for abstinence

- i. Waiting for marriage
- ii. Fear of
  - a. Pregnancy
  - b. Diseases
  - c. Parents
  - d. Teachers
- iii. Waiting for right partner
- iv. Have been told not to
- v. Others, please specify

16. Would you have sex before marriage if you had an opportunity?

17. Are you planning on having sex before marriage?

18. What age do you think is appropriate to start having sex at?

## SECTION E: PHYSIOLOGICAL PARAMETERS

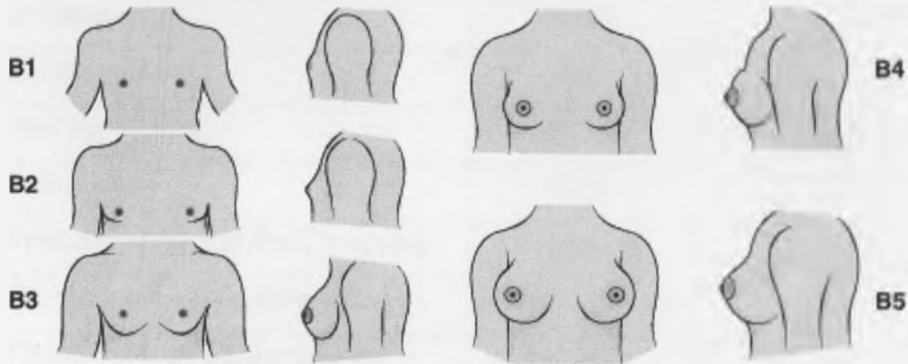
Body Mass Index =

Breast Tanner Staging =

### 5.3-APPENDIX C: TOOLS AND GUIDELINES

$$\text{BODY MASS INDEX} = \frac{\text{WEIGHT (KILOGRAMS)}}{\text{HEIGHT(M)}^2}$$

#### BREAST TANNER STAGING



- KEY;** B1-TANNER STAGE 1  
B2- TANNER STAGE2  
B3-TANNER STAGE 3  
B4- TANNER STAGE4  
B5-TANNER STAGE 5



**5.4-APPENDIX D****BUDGET**

<b>ITEM</b>	<b>Quantity</b>	<b>Unit Price (Ksh)</b>	<b>Total (Ksh)</b>
Writing Pens	1box	200 .00	200 .00
Notebooks	5pcs	60.00	300.00
Tape measure	4pcs	100 .00	400 .00
Printing Paper	5irms	400 .00	2 000 .00
Weighing Scale	4pcs	1500 .00	6 000 .00
Internet Surfing	200 hrs	60 .00 per hr	12,000 .00
Calculators	4pcs	500 .00	2 000 .00
Printing drafts and final proposal	10 copies	500 .00	5 000 .00
Photocopies of questionnaires	400 copies	4 .00	1600 .00
Photocopies of final proposal	6 copies	100 .00	600 .00
Binding copies of proposal	6 copies	60 .00	3600 .00
Ethical review fee	1	1 000 .00	1 000 .00
<b>Subtotal</b>			<b>34,700 .00</b>

**Personnel**

Research Assistant	4	5000	20000 .00
Biostatistician	1	15 000 .00	15 000 .00
<b>Subtotal</b>			<b>35 000 .00</b>

**Data Collection, Data Analysis and Thesis Development**

Printing of thesis drafts	10 copies	1 000 .00	10 000 .00
Printing final thesis	6 copies	1 000 .00	6 000 .00
Binding of thesis	6 copies	300 .00	1 800 .00
Dissemination cost			10 000 .00
<b>Subtotal</b>			<b>27 800 .00</b>
Contingency (10% of total budget)			<b>9750 .00</b>
<b>Grand Total</b>			<b>107 250 .00</b>



KENYATTA NATIONAL HOSPITAL  
Hospital Rd. along, Ngong Rd.  
P.O. Box 20723, Nairobi.  
Tel: 726300-9  
Fax: 725272  
Telegrams: MEDSUP\*, Nairobi.  
Email: [KNHplan@Ken.Healthnet.org](mailto:KNHplan@Ken.Healthnet.org)  
2<sup>nd</sup> March, 2011

Ref: KNH-ERC/ A/35

Dr. Nyasoro Nicholas Ogweno  
Dept. of Obs/Gyane  
School of Medicine  
University of Nairobi

Dear Dr. Ogweno

**RESEARCH PROPOSAL: "SEXUAL ACTIVITY AMONG SCHOOL GOING GIRLS AGE 13-15 YEARS IN RURAL KENYA"**  
(P415/11/2010)

---

This is to inform you that the KNH/UON-Ethics & Research Committee has reviewed and **approved** your above revised research proposal for the period 2<sup>nd</sup> March 2011 – 1<sup>st</sup> March 2012.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimens must also be obtained from KNH/UON-Ethics & Research Committee for each batch.

On behalf of the Committee, I wish you a fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely,

**PROF A N GUANTAI**  
**SECRETARY, KNH/UON-ERC**

c.c. The Deputy Director CS, KNH  
The HOD, Records, KNH  
The Dean, School of Medicine, UON  
The Chairman, Dept. of Obs/Gynae, UON  
Supervisors: Prof. J.B. Oyieke, Dept. of Obs/Gyane, UON  
Dr. J.N. Kiarie, Dept. of Obs/Gynae, KNH