PERCEPTIONS AND BARRIERS TO CONTRACEPTIVE USE AMONG ADOLESCENTS: A CASE STUDY OF NAIROBI

By

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A thesis submitted in fulfilment of the requirements for the Doctor of Philosophy in the University of Nairobi

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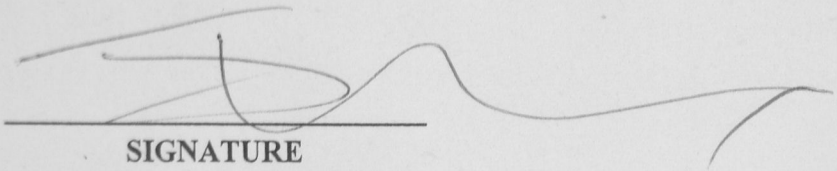

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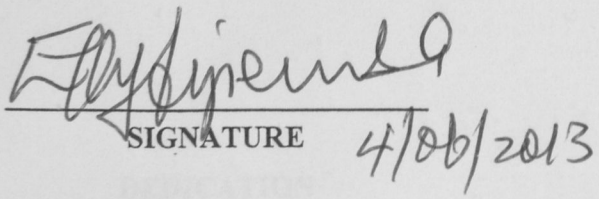

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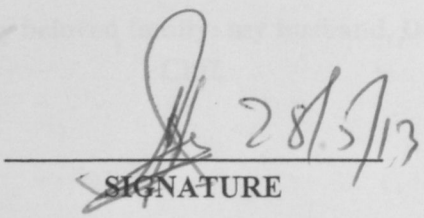

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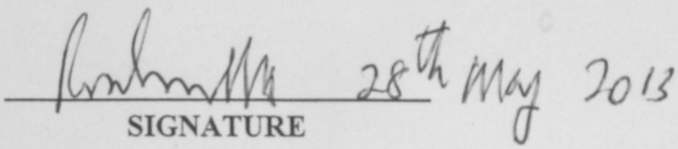

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DR MURUNGARU KIMANI

DEDICATION

This thesis is dedicated to my beloved family: my husband, Dickson; sons, Kahoro and Cliff.

ABSTRACT

Contraceptive use among teenagers is low worldwide and in the Kenyan context, little is known about factors that underlie the low use of contraceptives among adolescents aged 15-19 years. Similarly, little is known and documented about the perceptions of the adolescents regarding access and use of contraceptives. To develop more responsive interventions, it is important to understand adolescents' perceptions and the barriers that contribute to low contraceptive use among young people. In Kenya, the focus of the studies has been on whether adolescents are sexually active, information and knowledge of contraceptives, assessment of clinic based family planning services and contraceptive use among high school students. Most studies have been conducted using secondary data without linking information from the adolescents with that of their parents and their teachers; this limits the level of exploring the perceptions. The goal of this study was to identify perceptions and barriers that affect contraceptive use among female and male adolescents in Nairobi, Kenya, to guide policy and programmes. This was achieved using several methods of data collection: adolescents' respondent interviews, focus group discussions and in-depth interviews with parents of adolescents and teachers of schools attended by those adolescents. The study used a household systematic random sampling design using Kenya Demographic and Health Survey enumeration clusters of 2009 and projections from the 1999 population census for adolescents aged 15-19 years in 8 administrative divisions in Nairobi.

The statistical methods used were bivariate and logistic regression analysis. The bivariate analyses show that socio-cultural, socio-demographic, knowledge, perception and barrier factors are associated with contraceptive use. However, socio-economic factors, free services and privacy of services at the clinic were found to have a weak association with contraceptive use. Among socio-demographic factors, contraceptive use increased by age while more males used contraceptives. More ever married adolescents used contraceptives. Significant socio-cultural factors were living arrangement and more adolescents living with their spouses used contraceptives. More adolescents not attending school and adolescents living in Dagoretti Division used contraceptives. Contraceptive use increased with the level of knowledge of pregnancy prevention methods, knowledge of how to use contraceptives and knowledge of how a contraceptive method works in the prevention of pregnancy and HIV/AIDS. However, knowledge of the risks of unprotected sex was not consistent with use and adolescents with moderate and low knowledge used contraceptives more than those with high knowledge.

Results of the multivariate regression analyses showed that perception and barriers modify background factors on contraceptive use. The effects of background factors on contraceptive use diminished when perceptions and barriers were introduced into one model. The test of significance of the overall regression model showed that, partner communication had the strongest significant effect on contraceptive use. Other significant factors in the model were: knowledge of how to use contraceptives, opinion of adolescents to use contraceptives, ability to get contraceptives for self if adolescents wanted to, marital status and school attendance. Results of regression analysis showed that barriers were not significant in the influence of contraceptive use among adolescents. The study supported the hypothesis that sexual partner communication is associated with contraceptive use among adolescents. The study also proved that knowledge of how to use a contraceptive method and marital status are associated with higher levels of contraceptive use.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired immuno-deficiency virus
ASRH	Adolescent sexual and reproductive health
CBS	Central Bureau of Statistics
DHS	Demographic and health survey
FGD	Focus group discussion
HIV	Human immunodeficiency virus
IDI	In-depth interview
KSPA	Kenya Service Provision Assessment
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
NCAPD	National Coordinating Agency for Population and Development
NCPD	National Council for Population and Development
PATH	Programmes for Appropriate Technology in Health
STD	Sexually transmitted disease
STI	Sexually transmitted infection
UNFPA	United Nations Population Fund
WHO	World Health Organization

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CHAPTER ONE

BACKGROUND

1.1 Introduction

Low contraceptive use among adolescents has been reported globally. Despite the risks associated with early pregnancies, various surveys indicate sexually active 15-19 year old adolescents rarely use contraceptives (UNFPA, 2001). By age 20, over 40 percent of adolescents in Latin America and sub-Saharan Africa including Kenya have been pregnant at least once (Alauddin, 1999). In Kenya, only 19.6 percent of currently married youth aged 15-19 years use a modern contraceptive (KNBS et al., 2010). Only 5 percent of all adolescents in the country aged 15-19 years currently use any modern method of contraceptives (KNBS et al., 2010).

Low use of contraceptives affects fertility and maternal mortality. Worldwide, about 15 million babies are born to adolescent mothers each year. Eight out of 10 of these babies are born in developing countries (Moore, 1997; UNFPA, 2001; Alford et al., 2005; Advocates for Youth, 2007). Pregnancies among adolescents lead to complications during birth due to incomplete physiological body growth, anaemia, inadequate knowledge, and low use of reproductive health services (Impact: PRB; 1998). Engaging in unprotected sex also contributes to the risk of contracting sexually transmitted infections (STIs). Low contraceptive use among adolescents contributes to negative socio-economic effects, as girls drop out of school because of unplanned pregnancies. Inadequate schooling in turn affects quality of life, as women cannot secure paid employment that would enable them to adequately feed and educate their children thereby, contributing to a cycle of poverty in their families.

Despite the emphasis by the Ministry of Health on providing reproductive health services to adolescents and youth, the 2003 Kenya Demographic and Health Survey (KDHS) report indicates low use of contraceptives among adolescents in Kenya. The report further indicates that teenage fertility has edged upwards with the proportion of childbearing teenagers increasing from 2 percent at age 15 to 36 percent at age 19 (KNBS et al., 2010). Adolescents and youth are reported to seldom use effective family planning methods (UNFPA, 2001; CBS et al., 2004). The Kenya Government aims to promote and protect adolescent reproductive health rights by doubling the rate of contraceptive use among adolescents 15-19 years from the 4.2 percent recorded in 1998 to 8.4 percent by the year 2015 (NCPD and MOH, 2003). The Adolescent Reproductive Health Policy emphasizes the importance of research on adolescent sexual reproductive health and development related issues on little understood areas on adolescent health (NCPD and MOH, 2003).

Although the Kenya Government adopted a national family planning programme in 1967, it was not until 1984 when a policy framework was issued to guide the implementation of the population programme (NCPD, 1993, 2003). In 2000 the government launched the National Population Policy for Sustainable Development that builds on the Sessional Paper No. 4 of 1984.

Between 1967 and 1994 the focus of activities was married woman under the maternal and child health and family planning (MCH/FP) programme. However, after the 1994 International Conference for Population and Development (ICPD) more attention was given to adolescents and youth who had previously been marginalized with respect to reproductive health information and services. This move came after the government realized the numerous medical,

demographic, social, and economic challenges associated with poor reproductive and sexual health among the youth (UNFPA, 1994; NCPD, 1996). Although the population policy identifies development challenges associated with teenage pregnancies, it is explicit that no contraceptives will be given in schools. However, the population policy has no guideline on educating adolescents on sexuality issues or on preventing unwanted pregnancies.

Existing literature indicates several factors that contribute to low contraceptive use among adolescents. These include age at first sex; socio-cultural factors; socio-economic factors; environmental factors; knowledge; and perception factors. Perception and barriers are two main factors known to influence contraceptive use in many societies (Gage, 1998). Perceptions are shaped from awareness and knowledge acquired from the social and physical environment and therefore influence behaviour from within a person (Bandura, 1986). As operationalized in this study, a barrier is anything that makes it difficult to obtain a contraceptive method. Barriers include costs and availability of commodities. Lack of sexual and reproductive health information or unawareness of contraceptive source would also act as barriers (Prince and Hawkins, 2007). Low levels of contraceptive use may also arise from perceived risk of side effects (Otoide et al., 2001), fear of infertility (Nahar et al., 2000), low self-esteem (Hall et al., 2004), risk to pregnancy (Calves, 1999; Hulton et al., 2000; Bruckner et al., 2004) and perception of parental support (Meekers and Klein, 2002). Although barriers to contraceptive use could be generalized to both adults and youth, adolescents and youth face unique challenges in accessing contraceptive information and services. Furthermore, many African countries sanction sexual intercourse only in marriage and use of contraceptives may be viewed by youth as an

admission of engaging in sex (Brown, 2001). In addition, while contraceptive use requires prior planning, sexual intercourse among the youth is reported to be erratic and unplanned (UNFPA, 2001).

Among demographic factors, age and early age at first sex are factors associated with low contraceptive use. According to Kiragu and Zabin (1995), adolescents often base sexual and reproductive decisions on insufficient knowledge rather than on considerations of the consequences of these decisions. Marrying young may also contribute to low contraceptive use due to cultural taboos regarding discussions about contraceptives or sexual matters in general (Alauddin, 1999). The age difference between husband and wife may also affect discussions about contraception and therefore contribute to lower use of contraceptives.

Socio-cultural factors have been found to affect contraceptive use. In most cultures in Africa and other developing countries, premarital sex and use of contraceptives by adolescents are unacceptable (Brown, 2001). As a result, young people may avoid accessing sexual and reproductive health services because they do not want to be viewed as being sexually active. According to de Belmonte et al. (2000), in Bolivia adolescents did not use reproductive health services as this was seen as an admission of being sexually active which could lead to being punished or ridiculed by their peers; this negatively affecting contraceptive use by this group. However, increased contraceptive use has been associated with parental support in other countries (Gage, 1998; Meekers and Klein, 2002).

Socio-economic barriers that affect contraceptive use among adolescents include contraceptive costs and associated costs (e.g. transport to health facilities). Potential loss of work-time also deters contraceptive use when clients have no free time to visit the clinics (Casterline et al., 2001). Economic hardships may contribute towards early sexual activity and childbearing and in some cases girls may also believe that by having a child, they can escape poverty by persuading their partners to marry them (Gage, 1998).

Environmental factors tend to influence contraceptive use. Clinic policies and protocols that are not youth-friendly and poor quality services may deter adolescents from seeking these services. According to the literature reviewed, characteristics of youth-friendly services include: welcoming and non-judgmental staff, privacy, convenient clinic opening hours, short waiting time, convenient locations, affordable services and anonymity (Youthnet, 2010). According to Harper et al. (2004), 59 percent of teenagers in the United States of America said that they would not obtain contraceptives if they had to inform their parents.

Alauddin (1999) found that low education level for girls affects decision making power in relation to delay of marriage or first birth. Access to reproductive health information also influences contraceptive use. Sources of reproductive health information include radio, television and printed materials. Lack of access to appropriate information and services was found to discourage contraceptive use among married adolescents in Asia (Darobi, 2002). Furthermore, clients who are exposed to radio and television were found to use contraceptives more than those who were not exposed (Casterline et al., 2001). Inaccurate information may also affect appropriate decision making on using contraceptives. For example, Gage (1998) reported that

young unmarried adolescents in Mauritius believed that they could not get pregnant because they were "good girls" who engaged in "light sex" and only when they were in love. Clients in urban environments have been found to be more likely than their rural counterparts to use contraceptives due to their access to information and higher education levels (Fikree et al., 2001).

As indicated above, Kenya records high adolescent fertility and low contraceptive use. This presents health and development challenges. This study focuses on barriers and perceptions hindering contraceptive use among adolescents in Kenya.

1.2 Statement of Research Problem and Question

Although awareness of contraceptives is above 98 percent in Kenya, use of contraceptives among currently married youth below 20 years old is only 19.6 percent although about 36 percent of youth give birth before they are 19 years old (KNBS et al., 2010). Furthermore, although awareness of contraceptives is high, there is inadequate information of how knowledge and understanding of how contraceptives work are associated with contraceptive use. High adolescent fertility influences population growth and has the potential to contribute to a young age structure. According to the 2009 census, over 55 percent (21.6 million) of the population is below 25 years old (KNBS et al., 2010). The young age structure presents socio-economic and health challenges for the country. Early and unprotected sexual activities expose young people to pregnancy-related health complications and sexually transmitted infections including HIV/AIDS. Inadequate knowledge of the role of condoms and hormonal contraceptives on the prevention of both sexually transmitted diseases and pregnancy prevention continues to expose adolescents to

risk sexual behaviour. To respond to the challenges of high adolescent fertility, it is crucial to understand the underlying causes of low contraceptive use among the youth.

Contraceptive use among teenagers is low and in the Kenyan context, little is known about the factors that underlie their low use of contraceptives. Similarly, little is known and documented about the perceptions of the adolescents regarding access and use of contraceptives. To develop more responsive interventions that address the problem of low use of contraception among adolescents, it is crucial to understand adolescents' perceptions and the barriers that contribute to low contraceptive use among young people. In addition, it is important to compare the effects of both barriers and perceptions on contraceptive use among adolescents.

Perceptions about contraceptive use are influenced by information adolescents receive from the family, school and the media (Glanz et al., 2002). However, a lot of sexually-related information has been found to be inaccurate, ambiguous and sometimes misleading; this has a negative impact on sexual behaviour. In addition, there is no clear guidance on the method or language to use when discussing sexuality issues leaving messages passed to individual interpretations (Undie et al., 2007). Sexually explicit content accompanied by no pregnancy prevention messages by the media have also been found to foster negative attitudes and beliefs about unprotected sex among adolescents (Wingood et al., 2001). Sex decisions among adolescents are derived from insufficient knowledge, for example, the belief that a girl cannot become pregnant if she washes her genitalia after intercourse, jumps up and down after sex or has sex when standing while others prefer abortion to contraceptive use because they are afraid of future infertility (Nahar et al., 2000; Otoide et al., 2001). To respond to the challenges of the effects of

perceptions on contraceptive use, it is important to understand the content of sexuality discussions and contraceptive messages passed in school and among family members through linking information given by adolescents with that given by the parents and the teachers.

The social and physical environment affects adolescents' perception on reproductive health and contraceptive use. Maternal approval, for example, has been associated with a higher probability of birth control use among adolescents (Hulton et al., 2000; Jaccord and Patricia, 2000). However, in many traditional cultures, sexual activities are sanctioned only in marriage. With the breakdown of social structures traditionally used to educate young people on sexuality in Africa, adolescents are becoming sexually active without guidance. For example, in a study conducted in Nigeria, only 39 percent of parents surveyed had discussed issues of sex with their children in the year preceding the study (Izugbara, 2007). Living arrangements are also associated with contraceptive use among adolescents, for example, adolescents with two biological or adoptive parents were found to be more likely to use contraceptives than teens in other family structures while living with one parent was associated with a lower likelihood of condom use than living with two parents (Woog, 2003; Ryan et al., 2007).

Lack of quality youth-friendly services and information is another problem associated with low use of contraceptives among the youth. In Kenya, only 4 percent of public facilities were youth-friendly in 2004 (CBS et al., 2005) and 7 percent in 2010 (NCAPD et al., 2010). Most of the clinics in Kenya open from Monday to Friday between 8.00 am to 5.00 pm and are therefore inaccessible to adolescents who are likely to be in school during these times (Ndhlovu et al., 1997).

Married adolescents have different challenges and perceptions from their unmarried counterparts towards contraceptive use. Although marriage is the beginning of frequent and unprotected sexual intercourse, married adolescents have less mobility and fewer networks and information opportunities than their unmarried counterparts (Alauddin, 1999). Married adolescents therefore comprise a vulnerable group that faces unique challenges that hinder contraceptive use. This study strives to answer three key research questions:

(i) What perceptions do adolescents have about contraceptive use and how do these perceptions influence their contraceptive behaviour?

(ii) What messages on adolescent sexuality and contraceptive use are passed in school and by different members of the family and who discusses sexuality issues in the family?

(iii) What barriers affect use and continuing use of contraception among adolescents?

1.3 The Goal and Objectives of the Study

The goal of this study was to contribute towards the understanding of low contraceptive use among adolescents aged 15-19 years old through identifying perceptions and barriers that affect contraceptive behaviour among adolescents in Kenya.

Specific objectives are to:

(i) Establish and document perceptions that influence contraceptive use among adolescents 15-19 years;

(ii) Establish the nature and content of discussions on sexuality and contraceptive use held in schools and by family members and;

(iii) Identify barriers affecting the use of contraception among adolescents in school and out-of-school married and unmarried adolescents.

1.4 Justification of the Research

Adolescent mothers will have more children than those who start childbearing later and this affects population growth rate. According to UNFPA (2001), ultimate population size depends not only on the size of completed families but on decisions about when to start giving birth; raising the mothers age at first birth from 18 to 23 could reduce population momentum by over 40 percent. Pregnancy before age 18 years carries many health problems and puts adolescents at a higher risk of pregnancy related complications compared to women aged 20-24 years (UNFPA, 2001). For adolescents, contraceptive use provides protection from early and unwanted pregnancy and child birth, can provide protection from STI/HIV/AIDS, and indirectly contributes to better education outcomes, job possibilities and prevention of unsafe abortion (UNFPA, 2001). In Kenya, child bearing is 36 percent at age 19 (KNBS et al., 2010). Although awareness of contraceptives is almost universal at 95 percent, of women 15-19 years who know at least one method of contraceptive, use among adolescents is low.

To address the problem of adolescent fertility in Kenya, the government aims to double the rate of contraceptive use among adolescents 15-19 years from the 4.2 percent in 1998 to 8.4 percent by 2015 (NCPD and MOH, 2003). In Kenya, studies have focussed on whether adolescents are sexually active (Kiragu and Zabin, 1995; Ikamari and Towett, 2007; Kabiru and Orpinas, 2009), adolescent fertility, information and knowledge of contraceptives (CBS et al., 1987-2004; Missie, 2002; KNBS et al., 2010), assessment of clinic based family planning services (Ndhlovu et al., 1997) and contraceptive use among high school students (Kiragu and Zabin, 1995; Ikamari and Towett, 2007).

Few studies have integrated quantitative and qualitative data collection. To understand perceptions of contraceptive use among adolescents, this study used both quantitative and qualitative data collection and therefore triangulated information from both methods identifying areas of divergence and congruence. The study linked information provided by adolescents, their parents and teachers. Understanding adolescents' perceptions and barriers that contribute to low contraceptive use in Kenya provided the necessary information and knowledge to enhance development of appropriate strategies to address low contraceptive use. Understanding how adolescents make decisions to use or not to use contraceptives adds to the body of knowledge that informs the need for policies and programmes that influence positive perceptions towards contraceptive use. Results of this study have the potential to generate the knowledge to inform population and health professionals to better design intervention strategies that target the most influential components of adolescent sexual behaviour towards contraceptive use.

This study established and documented perceptions and barriers that influence contraceptive use among adolescents aged 15-19 years. The study also established the nature and content of discussions on sexuality and contraceptive use held in schools and by family members.

1.5 Scope and Limitations

This study sought to address knowledge gaps identified in the literature review. It therefore provides empirical evidence related to perceptions and barriers to contraceptive use among adolescents aged 15-19 years in Nairobi and information and content of sexuality issues they discussed with family members and in school. To achieve this goal, several challenges were

anticipated for the study and strategies to overcome them were developed during the study design as follows:

(i) One, with limited resources, it was challenging to get a cross section of adolescents by marital status, sex and in and out of school in the same study and to get direct responses from adolescents themselves. To address the challenge, the study used a case study of Nairobi City that provided heterogeneity of tribes, variety of religious denominations, a hub of secondary schools and communities with different socio-economic status. The study also used population data collection using the 1999 census enumeration areas. The enumeration areas made it possible to conduct a systematic random sampling across administrative divisions in Nairobi and to conduct household listing to identify adolescents 15-19 years that fit the selection criteria. Using the census enumeration frame made it possible to get adequate numbers of adolescents to sample from the households.

(ii) The second challenge was to identify sexually active adolescents in order to understand their perceptions and barriers to contraceptive use. To address this challenge, the study identified sexually active adolescents during the interview. Sexually active adolescents were invited for the focus group discussions (FGDs) that were disaggregated by sex, marital status, in and out of school. This strategy enhanced understanding of opinions through cross-checking perceptions and barriers to contraceptive use among adolescents.

(iii) The third challenge was cross-checking sexuality content and discussions that take place at home and in school due to its social desirability bias. To overcome the challenge, the study used multiple data collection methods to allow for more probing and validation through linking information from parents of adolescents who had participated in the

study and teachers in schools that were mentioned by adolescents during household listing.

(iv) Fourth, due to its social desirability bias, a team of research assistants were trained on ethics during data collection. The training emphasized issues of confidentiality of information.

The study encountered three main limitations during the data collection process:

(i) One, the study hoped to conduct in-depth interviews (IDIs) with parents in at least every 10th house where an adolescent was interviewed. However, this expectation could not be fulfilled because few parents were willing to participate in the IDIs particularly men. Few parents, especially men, were at home during the interviews. This limited the use of randomized household for IDIs of parents as planned and may have caused some level of bias towards female parent respondents. To reduce the limitation, the research team made return household visits over the weekend to mobilize male parents willing to participate in IDIs.

(ii) Two, it was a challenge to mobilize enough married male adolescents and male parents for FGD interviews. To address the problem, willing male adolescents and male parents who had been identified for FGDs were mobilized from several clusters and met in a common place. Male adolescents were interviewed at night because that was the most convenient time for them. However, responses could not be separated by place of residence and were therefore analysed together.

(iii) Three, during data collection several families moved to other areas, reducing the number of households with adolescents expected in the sample. To address the problem, all eligible adolescents in the households that were identified to participate were interviewed. For this reason, Makadara had slightly more adolescents interviewed than the expected sample. (The study sites are described in Chapter three.)

1.6 Operational Definitions

The definitions explained in Table 1.1 below were used to operationalize the study.

Table 1.1: Operational definitions

Variables	Definition	Measures
Dependent		
a. Contraceptive use	a. Has used a contraceptive in the past	a. Ever use of contraceptive
Socio cultural environment		
a. Family living arrangement	a. Person adolescent lives with	a. Living with biological parent, relatives, alone, friend, spouse or other arrangement
b. Region	b. Administrative division in Nairobi	b. Central, Dagoretti, Embakasi, Kasarani, Kibera, Makadara, Pumwani and Westlands divisions
c. Source of sexuality information	c. Sources where adolescents get sexuality information	c. Sources of information from family members, teachers, friends, media, health professionals and others
d. School attendance	d. Adolescents enrolled in school	d. Attendance or non-attendance
Socio-economic status	Wealth quintile	a. Type of housing materials, ownership of goods and house utilities
Knowledge	a. Awareness of contraceptives	a. Number of contraceptives respondent names, knowledge of how contraceptives work and how to use them
	b. Knowledge of risks of unprotected sex	b. Awareness of negative consequences of unprotected sex
	c. Knowledge of source of contraceptives	c. Adolescent is aware of where to obtain contraceptives

Note: Definitions indicated here are used throughout the document.

Table 1.1: Continued

Socio-demographics		
a. Age	a. Date of birth	a. Age in years
b. Sex	b. Male or female	b. Gender of respondent
c. Marital status	c. Marriage unions	c. Married, living with spouse, divorced/separated or widowed
Service provision environment		
a. Clinic hours	a. Time when clinic is open to provide services	a. Convenient clinic open hours
b. Waiting time	b. Time taken at the clinic between registration and provision of contraceptives	b. Time in hours and minutes spent at the clinic to obtain a method
c. Ability to obtain services	c. Respondent can obtain a contraceptive needed	c. Ability to afford a contraceptive method
d. Cost of services	d. Amount of money used to obtain a method	d. Amount of money paid in Kenya shillings
e. Confidentiality	e. Privacy during service provision	e. Respondent's opinion of privacy during service provision
f. Contraceptive counselling	f. Client is provided information and helped to select suitable contraceptive method	f. Feeling of being comfortable enough to ask questions, questions answered to satisfaction and side effects of methods explained and can recommend a friend
Perceptions	Idea, brief of image one has on contraceptive use as a result of how they understand	a. Perceived risk to pregnancy b. Parent approval c. Fear of contraceptives side effects d. Partner communication
Barriers	Anything that negatively affects the process of physically obtaining a contraceptive method	a. Knowledge of supply source b. Clinic open hours and waiting time before receiving service c. Availability of commodities d. Affordability e. Distance to service provider f. Prohibitive protocols at the facility g. Privacy at service provision

Note: Definitions indicated here are used throughout the document.

1.7 Organization of Chapters

Chapter one provides the background of the study and highlights the research problem and questions to be answered, the goal and objectives, justifications and scope of limitations.

Chapter two discusses literature review according to themes. This chapter is an analysis of relevant studies that provides an overview of contraceptive use among adolescents and youth and indicates knowledge gaps. The chapter defines perceptions on contraceptive use highlighting its theory, how perceptions are formed, the relationship between perceptions, attitudes and behaviour. Several studies that demonstrate the role of perceptions on contraceptive use are reviewed. The effects of barriers to contraceptive use are highlighted, giving factors related to these barriers. To highlight effects of barriers to contraceptive use, several factors are reviewed according to several themes: information and knowledge; demographic factors; socio-cultural factors; socio-economic factors; and environmental factors. The chapter describes several behavioural theories relevant to this study. The literature review provided a basis for a conceptual framework to address perceptions and barriers to contraceptive use and generated hypotheses to respond to the research questions. Chapter two ends with a summary of the literature reviewed, indicating gaps in knowledge and how the study addressed those gaps.

Chapter three discusses characteristics of the respondents and data sources, the sample design and size. It describes the process of data collection including household listing, training of research assistants, pretesting of tools and ethical considerations. The chapter also describes variables used for data collection and the process of data analysis and quality control. The analytical methods used in this study are also described.

Chapter four discusses the research findings and compares results with those of other relevant studies cited in the literature review, highlighting any contradictions or confirmation. In the study findings, results from quantitative data are triangulated with qualitative findings to explain 'why' and 'how' of the emerging phenomena. Chapter five discusses differentials of contraceptive use using cross tabulation and the Chi-squire test. Chapter six discusses determinants of contraceptive use using results of the regression analysis of variables described in the conceptual framework. The emerging model showing the pathway of the effects of perception and barriers to contraceptive use is also discussed in Chapter six. Chapter seven presents the discussion and recommendations of the study. The chapter discusses the general findings in relation to the study objectives and gives policy and programme recommendations and conclusions and recommendations for further research.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

This chapter presents the literature review on perceptions and barriers that influence contraceptive use among adolescents aged 15-19 years. The literature review highlights dimensions and interrelationships between perceptions and barriers to contraceptive use. Behaviour theories relevant to the study are highlighted, as are the theoretical framework and study hypotheses. A summary of the literature review highlights major knowledge gaps.

2.2 Overview of Contraceptive Use Among Adolescents and Youth

Contraception is the deliberate use of a family planning method to prevent pregnancy and therefore control fertility. Avoiding pregnancy requires consistent use of an effective contraceptive method. Effective contraception requires planning and preparation before engaging in sexual intercourse. However, for many adolescents first sex is often unplanned, a pattern predisposing them to unwanted pregnancies and STIs including HIV/AIDS. Contraceptive use among adolescents is influenced by many factors including individual perceptions and barriers. Factors that influence perceptions towards contraceptive use include information and knowledge while barriers are influenced by demographic, socio-cultural, socio-economic and environmental factors.

Compared to adults, contraceptive use among adolescents is low. According to Alauddin (1999), sub-Saharan African countries have the highest levels of adolescent child bearing in the world, yet contraceptive use among married women aged 15-19 years is below 10 percent.

Demographic and health surveys from 46 countries in Asia, Latin America, the Caribbean and sub-Saharan Africa report that 1 in 10 adolescent women use contraceptives: Pakistan (6 percent), Nepal (7 percent) and India (8 percent) (Alauddin, 1999; UNFPA, 2001; Pachauri and Santhya, 2002; United Nations Economic and Social Commission 2006). In Kenya, although the contraceptive prevalence rate for modern methods is 39 percent for married women aged 15-49 years, contraceptive use among women 20-24 years old is only 23.6 percent and 4.9 percent for all women 15-19 years old (KNBS et al., 2010).

Two relevant studies (Gage, 1998; Hulton et al., 2000) highlight factors that influence contraceptive use among adolescents. Gage reviewed several studies carried out in various parts of the world to explore factors that may positively or negatively influence decisions to engage in sex or to use contraceptives and condoms. Based on the findings, contraceptive use involves a decision-making process that varies between cultures. Specifically, culturally based gender roles that reinforce male control over sexual and reproduction decision making may influence a girl's inability to make decisions on contraceptive and condom use. According to Gage, social and individual factors also influence contraceptive use. In a situation of economic and socio-economic deprivation, early marriage and child bearing may appear to be a means of obtaining necessary resources or as a marker of social or personal achievement. In cultures where girls believe men will not marry them before they give birth, this would be a de-motivator to use contraceptives. Where girls face limited social, educational and economic opportunities, child bearing may not be viewed as an opportunity cost but rather, as insurance for the future. Adolescents also receive conflicting messages and have to balance between self-interest with

cultural prescriptions and the need for other's acceptance; this may affect rational decision making.

The study by Gage (1998) indicates the need to study the impact of parents and family members on contraceptive behaviour of teenagers. Gage, in her literature review, found little about parents' attitudes towards sex and birth control and their effects on the likelihood of teenagers engaging in sexual intercourse or using contraceptives. However, the study lacks information on the significant level of parent–adolescent communication on contraceptive use, different categories of family members with whom adolescents have discussed sexual matters and birth control, who initiated the talk, how often the discussions occurred and the timing and specific content of these discussions. Also lacking is information on how parents and adult family members disseminate information about sex and contraceptive use—whether by talking directly to the teenager or indirectly by what is said about others or by the way parents act towards adolescent. Her study also lacks statistical linkages between various components of reproductive decision making and adolescents' likelihood to engage in sexual intercourse and use condoms and other contraceptives consistently.

Hulton et al. (2000) studied information about adolescents' behaviour, motivation and perceptions of the risk with regard to pregnancy and HIV transmission in Uganda. In this study, the most important finding is that knowledge of risk-averse behaviour and reported actual behaviour has little in common and that the most fundamental barrier to behaviour change lies within the economic and socio-cultural context that moulds the sexual politics of the youth. Hulton also found that for young males, lack of responsibility for pregnancy outcomes of their

risk sexual behaviour is an important barrier to improved sexual health. In the study, Hulton tried to answer questions on the perceptions among adolescents of risks associated with sex in particular with HIV and unwanted pregnancy, how those perceptions compare by sex, how aware adolescents are of the means by which to avoid such risks and what prevents youth (both men and women) from actively drawing on their knowledge and protecting themselves from risk.

To explain contraceptive use for adolescents, Hulton drew on behaviour models that included the health belief model (Janz and Becker, 1984), the theory of reasoned action (Fishbein and Ajzen 1980) and the concept of self-efficacy derived from social learning theory (Bandura, 2001). These theories assume a logical pattern of decision making and a degree of control that is unrealistic in the field of sexual relations and in different social environments. These theories do not consider that an individual may not have adequate knowledge about the risks involved in unprotected sex or the role of significant others that influence adolescents' behaviour. For example, in Cameroon adolescents who perceived their parents to be supportive of condom use were more likely to use them than those who did not perceive this (Meekers and Klein, 2002).

Hulton emphasizes the primary factors to include socio-cultural while the intermediate factors include perception, self-confidence and communication skills to influence contraceptive use. The study by Hulton focused on adolescents; it did not explore information from adult members of the community who were reported by respondents to encourage early sex. FGDs alone used in this study may have given limited information on individual knowledge on contraceptive use. Although adolescents in this study mentioned schools as one source of information on pregnancy and HIV prevention, there is no indication on the content of what is disseminated in schools.

Both these studies are relevant to this study on exploring perceptions and barriers to contraceptive use among adolescents in Kenya. Both studies indicate the background factors that influence contraceptive use among adolescents to include demographic, socio-economic and cultural while intermediate factors include sexual and reproductive health knowledge, partner communication on conception and perception about contraception. A summary of gaps identified in both studies includes an explanation of who in the family discusses sexuality issues and the process used in the discussions. It is unclear about the content of sexuality discussions in school. Both studies have not explored parents and teachers perceptions on sexuality discussions with adolescents and perceptions on contraceptive use by adolescents.

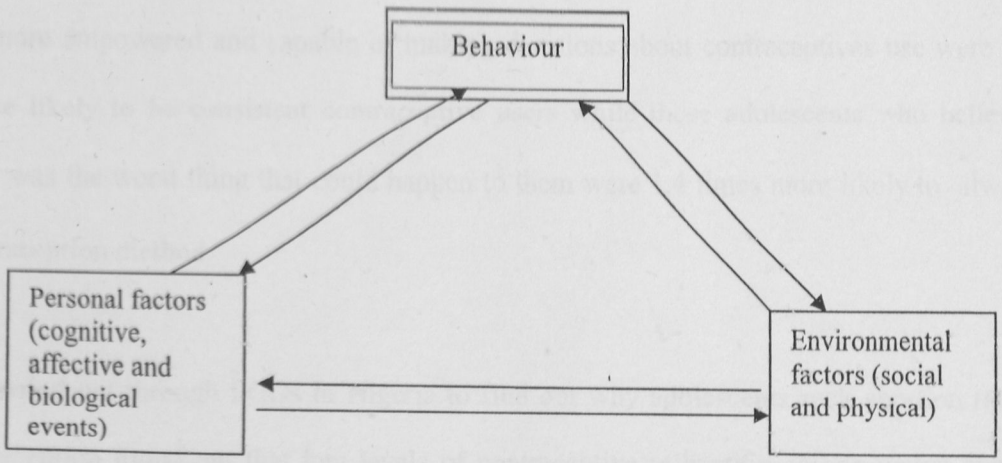
2.3.1 Perceptions on Contraceptive Use

Perceptions are formed through recognition and identification based on past experiences, which means that through certain unknown processes, memory contributes to the immediate experiences that one has, giving the qualities of familiarity and meaning. The theory that perception is cognitive was first clearly proposed by the German Polymath Physicist, Physiologist and Psychologist Herman Von Helmholtz (1821-1894) and he called it unconscious inference, essentially like the predictive hypothesis of science.

In describing the theory of self-perception, individuals come to know their own attitudes, emotions and other internal states particularly by inferring them from observations of their own overt behaviour or circumstances in which this behaviour occurs (Daryl, 1972). Derrel (2000), in his article on selective perception indicates that perception is the process of information extraction based on cognitive structures. The cognitive or mental representation of the

environment affects a person's behaviour (Bandura, 1986; Derrel, 2000; Glanz et al., 2002). According to Glanz et al. (2002), there are social and physical environments. Social environments include family members, friends and colleagues while physical environments include images of items. Pleasant images of women who have used contraceptives therefore are likely to arouse in the cognitive, pleasant feelings associating them with positive perceptions and positive outcomes while negative images are likely to generate an opposite chain of reaction. The conceptual model of perception is described below.

Figure 2.1: Conceptual model of perception formation



Source: Adopted from Bandura (1986), Glanz et al. (2002) and Pajares (2002)

From Figure 2.1, behaviour is a product of perceptions while perception is a function of different factors that influence and are influenced by personal and environmental dynamics. In Nyanza, Kenya, condom use was negatively associated with perceptions of being at low risk HIV in a community where the HIV/AIDS prevention programme was integrated into social festivals (Matika-Tyndale and Tenkorang, 2010).

Studies done elsewhere show that perception influences contraceptive use and sexual behaviour. In a national longitudinal study of adolescent health conducted among in-school adolescents in

USA (Ryan et al., 2007), adolescents with knowledge of contraceptives had 33 percent greater odds of ever using a contraceptive. In the same study, adolescents who perceived easy access to birth control had 22 percent higher probability of using a contraceptive method. Further, females who felt more empowered and capable of making decisions about contraceptives use were 1.6 times more likely to be consistent contraceptive users while those adolescents who believed pregnancy was the worst thing that could happen to them were 1.4 times more likely to always use a contraception method.

A study carried out through FGDs in Nigeria to find out why adolescents seek abortion rather than contraception found out that low levels of contraceptive utilization among young people arise from their perceived risk of side effects (Otoide et al., 2001; Oni et al., 2005). For example, other than condoms, the youth understood contraceptives to mean something that interferes with fertility while abortion had similar but short lived effects. In this study, fertility and infertility appeared to be central issues in youth decision to use contraceptives or have an abortion. Although youths reportedly used medicine stores which were seen to be discrete and confidential, FGDs indicated that store dealers provided minimal or no information on the exact nature of known effects or benefits of these methods. The findings of the study are supported by another survey carried out in Bangladesh on knowledge, attitudes and practices of adolescents relating to contraceptive use. In this study, although 67 percent of adolescents held positive attitudes to contraceptive use, 18 percent of them said that pills would cause infertility (Nahar et al., 2000). Findings from these two studies reveal the need to further explore information required for the youth to change their perception on contraceptives to increase use and hence, reduce unplanned pregnancies.

As indicated above, personal vulnerability to risk and short-term gratification, as opposed to long-term consequences are other perceptions that affect use of contraceptives. Risky sexual behaviour can take several forms, ranging from a large number of sexual partners to sexual intercourse under the influence of drugs or alcohol. A study done in Uganda indicated that peer pressure in high schools influences risky sexual behaviour and students who took alcohol were 3.2 times more likely to engage in sexual activities and 5.8 times more likely to have had multiple partners than those who did not take alcohol (Twa-Twa, 1997). Other studies indicate that the influence of sexual partner also affected adolescents' contraceptive use (Whitley and Schofield, 1986).

Adolescents may also have a limited capacity to understand the connection between present actions and later outcomes or simply may not place great value on longer range outcomes. Immediate consequences of engaging in risky sexual behaviour may momentarily outweigh negative long-term consequences. For example, adolescents may fully appreciate that their continued engagement in unprotected sexual intercourse may result in unplanned pregnancies or STIs but they place much value in the aesthetic experience of engaging in the act, for example, for the pleasurable sensation feelings of self-worth (Hall et al., 2004). This logic is supported by several survey findings where knowledge on contraceptives and HIV/AIDS is high but use of condoms and other forms of contraceptives is low. In Kenya, awareness of contraceptives and HIV/AIDS are both over 95 percent but use of any modern contraceptives for all women among adolescents 15-19 years is below 5 percent (CBS et al., 2004; KNBS et al., 2010).

In a study conducted in Malawi, Izugbara and Undie (2008) noted that boys often treat peers who have impregnated girls with respect and sexual pleasure seems to outweigh the risks of sexually transmitted diseases. According to Gage (1998), birth control is influenced by an adolescent's perception of how socially acceptable their knowing about sex is. Similarly, the culturally formed and deep rooted need for a man to prove his virility often means that having intercourse without protection is of symbolic importance. Culturally based gender roles that reinforce male rights over sexual and reproductive decision making can also contribute to female adolescents' powerlessness to make reproductive decisions and to their vulnerability to the negative consequences of unprotected sex. In Bolivia (de Belmonte et al., 2000), adolescents' perception of contraceptive use by their partners or peers were found to be both positive and negative and therefore important in influencing contraceptive use. In Pakistan, spousal communication about contraception and related issues was associated with contraceptive use (Casterline et al., 2001). In Malawi, young men were steered towards high risk behaviour for fear of humiliation and feelings of powerlessness for engaging in sexual practices which offer them no control and power over women (Izugbara and Undie, 2008). The literature review indicates that male partners have the potential to influence their sexual partners in reproductive decisions and it is critical to understand male perceptions towards contraceptive use. However, most studies on contraceptive use focus on females and exclude males who are critical partners in sexual behaviour. In South Africa, males disapproved of using contraceptives for fear of losing their control over their girlfriends (Oni et al., 2005). This study therefore included males in an attempt to understand their perceptions towards contraceptive use.

A qualitative study on condom use and risk perception among male and female adolescents in Cameroon showed that despite high levels of awareness on HIV/AIDS, risk perceptions remained low and 73 percent of males and 68 percent of females believed that they were at no risk or they were at lesser risk of contracting HIV/AIDS than other adolescents were (Calves, 1999). Having sex with multiple partners was common and only 10 percent of sexually active males reported using condoms illustrating how perception is a barrier to use of reproductive health services. This finding is further illustrated in a study carried out on adolescents' attitudes and contraceptive use and pregnancy where in a multivariate analysis, respondents attitudes towards pregnancy were not significantly associated with actual risk of pregnancy based on unprotected sexual intercourse (Bruckner et al., 2004). In this study, having a positive attitude towards contraception was associated with increased likelihood of inconsistent and consistent contraceptive use compared with non-use at 1.6 and 2.1 respectively. This study provides a critical reason to study perceptions on contraceptives to increase use.

Fear that an adolescent's behaviour may be reported to their parents or to others they know may constitute a psychological barrier to contraceptive use. This non-disclosure may contribute to a lost opportunity to provide contraceptives or condoms at the health facilities. In Bolivia, a study by de Belmonte et al. (2000) indicated that adolescents felt uneasy about their sexuality, reported feelings of anxiety, shame and guilt and had fears of being punished by family and ridiculed by peers thus negatively affecting their ability to seek out contraceptive services.

Perceptions on contraceptives, whether negative or positive can be influenced by the messages provided in the environment. This aspect is illustrated in a study among African-American adolescents on exposure to movies with sexual content and adolescents' sexual and

contraceptives related attitudes and behaviour in USA (Wingood et al., 2001). Results of a logistic analysis shows that youth who were exposed to sexually explicit movies were 2.0 times more likely to have multiple sexual partners, 1.8 times more likely to have frequent sex and 2.2 times as likely to have not used a contraceptive in the past 6 months. The results also show that the youth were more than twice as likely to have strong desire to conceive and 1.4 times more likely to have negative attitudes towards condoms. The findings from this study illustrate how modelling unhealthy practices by sexually explicit yet consensual relationships and having few pregnancy prevention messages may foster adolescents' attitudes, beliefs and desires supportive of conception even when adolescents may not be ready for such long-term consequences.

Low self-esteem among some youths has been associated with non-use of contraceptives. According to Hall (2004), depressed adolescents may often experience feelings of hopelessness and lowered self-esteem, which may make them less likely to engage in self-protective behaviour. Adolescents who feel powerless, alienated and not in control of their lives were found to be at increased risk of pregnancy (American Family Physician, 1990). A study in Zimbabwe and Kenya found that 11 percent of adolescents did not seek HIV/AIDS services because they were shy (Erulkar et al., 2004; 2005).

Applying the model of perception formation, environment factors that may influence perception to use or not to use contraceptives may also act as barriers. According to Poopak (2000), whether perceptions are based on analysis of reality or a stereotype, they almost always compete with other contrary perceptions and this dissonance may create psychological conflicts and barriers to contraceptive use. In Bolivia (de Belmonte et al., 2000), although most adolescents felt that

young women who used contraceptives were "responsible" and "cautious", a significant number labelled them as "easy" while boys were viewed as "womanizers".

2.3.2 Perceptions of Service Environment and Contraceptive Use

The environment and quality of care in the places where adolescents seek contraceptives influence their perceptions and therefore the use. The environment that would positively influence contraceptive use assumes that adolescents are able to access contraceptives when they want them, policies at the health facilities support contraceptive use by adolescents and that services are of high quality to motivate the target group. Unfortunately, many of these positive aspects may be lacking and worse off when it comes to adolescents' reproductive health services resulting in inadequate access to contraceptive use by young people. According to Ndhlovu et al. (1997), most of the public clinics in Kenya open from Monday to Friday between 8.00 am and 5.00 pm, reducing access to contraceptives for adolescents who are likely to be in school during the week. In a study by Erulkar et al. (2005), adolescents indicated four main characteristics that they valued in a service facility: staff attitudes, cost, short waiting time and ability to obtain all services at one site. However, a study in Zambia found no significant relationship between degree of friendliness in clinics and rate of service utilization by youth (Kristin et al., 1999).

Quality of service implies the level of client satisfaction. If clients are unsatisfied with services, they are not likely to continue using them (Jain, 1992). For adolescents to use contraceptives, the services must be friendly to the youth and must also guarantee confidentiality. Some of the protocols may negatively influence use of reproductive health services by the youth. In a study carried out in USA (Harper et al., 2004) where hormonal contraceptive methods are available only by prescription from a physician or clinic, 59 percent of teenagers seeking contraceptives

said that they would not obtain services if they had to inform a parent. In this study, one of the clinic rules was to notify parents, which is often a requirement by the government regulations.

A study in Bolivia indicated that sampled facilities had adequate supplies of contraceptives appropriate for adolescents, yet many lacked capacity to provide services for adolescents (de Belmonte et al., 2000). In the same study, most service providers indicated that they did not see a need for specific adolescent services although the government had existing policies. Service providers also expressed higher approval when supplying contraceptives to boys than to girls. In addition, unprofessional conduct and lack of confidentiality by health centre staff produced negative outcomes to use of reproductive health services by adolescents. In this study carried out in three Bolivian cities (de Belmonte et al., 2000), 50 percent of the adolescents surveyed reported going to the health centres when ill but they did not perceive such places as ideal for obtaining contraceptives; most (87 percent) preferred pharmacies and 12 percent indicated that they did not know where to go for services. Lack of confidentiality was also found to be an important underlying reason for not using health services. In Bangladesh, perceptions of women regarding the quality of field worker care were significantly related to the probability of subsequent adoption of family planning method (Koening et al., 1997). Specifically, quality of care was associated with a 72 percent greater likelihood of continued use of any method of contraception and women who were not using a method and who scored high index of perceived quality of care were 27 percent more likely to adopt a method subsequently compared with women with a low score. The study also found that the absolute number of contraceptive methods offered to a client may not be as important as the degree of trust developed between the field worker and the client.

2.4 Socio-Cultural Factors

Culture moulds behaviour in society. According to Hulton et al. (2000), socio-cultural factors influence how decisions are made and the confidence to use contraceptives or not. In a study carried out in Cameroon (Meekers and Klein, 2002), males who perceived that their parents supported them to use condoms were found to be 2.2 times more likely to report having ever used condoms than those who questioned their parents' support. This finding has been supported by two other studies in USA where adolescents with perceptions of maternal approval to birth control were 1.2 times more likely to use a contraceptive at the most recent intercourse (Jaccord and Patricia, 2000; Ryan, 2007). However, in a study carried out in Burkina Faso, Ghana, Malawi and Uganda no association was found between parents providing information about contraception and adolescents' contraceptive use (Biddlecom et al., 2009).

According to Gage (1998), culturally defined gender roles influence family. For example, parents may monitor their sons less on sexuality issues and this may reinforce male control on sexual and reproduction decision making and also influence a girl's ability to make decisions on contraceptive use and condom use. In 34 studies in 20 countries in Africa, Asia and Latin America, premarital sexual activity was found to be taboo among adolescents 10-19 years and youth 15-24 years, using contraception was forbidden among unmarried youth and abortion, the only solution to premarital pregnancy among adolescents, was unacceptable (Brown, 2001). In another study in Togo, 48 percent of women disapproved of young people using contraceptives (Speizer, 2001). In such a hostile environment, adolescents would be afraid of making their elders angry and being labelled negatively by the community and would be reluctant to negotiate

use of contraception and condoms. According to Casterline et al. (2001) in a study carried out in Punjab, Pakistan, social and cultural unacceptability of contraception and wives' perceptions that their husband's attitudes are not supportive of family planning were found to negatively affect use.

In Bolivia, adolescents feared being punished by family and ridiculed by peers and this negatively affected their ability to seek services (de Belmonte et al., 2000). FGDs in a study carried out in Zambia indicated that several barriers to contraceptive use were culturally-based and these include beliefs regarding how reproductive health problems are caused, prevented or cured and perceptions that family planning services are meant for married adults only (Erulkar et al., 2005).

In Kenya, some religious organizations oppose the use of contraceptives by adolescents as sexual intercourse is expected only in marriage, although 36 percent of adolescents start child bearing by 19 years (KNBS et al., 2010). Evidence from World Health Organization (WHO) case studies in developing countries indicated that among adolescents, sexual relations may be forced and there are widely gender-based differences in sexual conduct, ability to negotiate sexual activity and contraceptive use. Furthermore, girls may be at risk of gender based violence in some settings, have less decision-making power than unmarried women (Alauddin, 1999). In the same study, religion was another factor that militated against use of contraceptives. In Pakistan, out of 579 respondents, 61 percent indicated that contraceptive use would provoke divine disapproval (Casterline et al., 2001).

In Kenya, some traditional communities valued virginity at marriage and devised structures to govern sexual behaviour among unmarried adolescents. Contraception among the unmarried adolescents may not have been practised within traditional contexts. According to Kenyatta (1995), the platonic love sessions referred to as "*Ngweko*" served as practical lessons to control sexuality among the youth and consequently pregnancies among unmarried youth was uncommon. According to Kenyatta (1995) contraception was not part of sexuality education in the Kikuyu culture and in cases where pregnancies out of marriage occurred, both the male and female were punished according to the rules set by society. The punishment served as a deterrent to premarital sexual intercourse.

With modernization and increasing urbanization, African traditions that govern appropriate sexual conduct have been eroded. Further, the breakdown in social ties means that young people are growing up without adequate access to traditionally sanctioned sexuality education. Consequently, many youth are growing up without appropriate sexual guidance. Furthermore, although social tendency is to proscribe sexual activity among young unmarried people, today's adolescents are attaining puberty earlier, marrying later and are more likely to engage in premarital sex than members of their parents' generation. Because of social unacceptability, adolescents who have premarital sex often fail to use contraceptives thereby exposing themselves to the risks of unintended pregnancy and STIs including HIV/AIDS. In addition, traditional responsibilities on a pregnancy placed on females may affect use of contraceptives by male adolescents. According to Hulton et al. (2000), male youths' lack of responsibility for outcomes of their sexual relationships with girls was identified as a negative perception towards

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preventing a pregnancy and using condoms. This finding highlights the importance of involving both males and females in a family planning programme.

2.5 Barriers to Contraceptive Use

The literature shows that perception affects behaviour towards contraceptive use from within the individual while barriers are factors that are external to the person. Even if an adolescent is willing to use a contraceptive, external barriers may affect access. A barrier is therefore anything that limits access to the process of obtaining or using a contraceptive. In using a sociological conceptual framework for understanding reproductive behaviour, Prince and Hawkins (2007) uses exclusion factors focusing on processes, mechanisms and institutions that prevent individuals from accessing resources, assets and services. According to Prince and Hawkins, the exclusion variables include income, urbanization, information and services. The main factors related to barriers that are indicated in the literature review include marital status, knowledge, socio-economic factors, medical barriers, time, distance to the clinic and cost of travel.

2.5.1 Information and Knowledge About Contraceptives

To be able to use contraceptives, a client must be aware of the methods and where to get them. According to Casterline et al. (2001), 48 percent and 44 percent of clients exposed to radio and television in Pakistan planned to use contraceptives in future as opposed to 30 percent and 22 percent not exposed to radio and TV respectively. In Thailand, adolescents living in urban and semi-urban areas and access to mass media had a positive influence on risk perception and condom use (Haque and Soontharndhada, 2009). In Kenya and Zimbabwe, 44 percent of adolescents did not seek reproductive health services because they did not know where to get these services (Erulkar et al., 2005). According to Curtis et al. (1996), knowledge of source for

modern contraceptive methods follows the same patterns observed for knowledge of the methods themselves.

The same report indicates that one of the measures of access to services is percentage of women 15-19 years who know the source of contraceptives. This theory supports a survey in Kenya where 57 percent of users of contraceptives were from government facilities (KNBS, 2010).

However, having the information alone does not change to positive behaviour. From several demographic surveys in Africa, Asia and Latin America, knowledge about contraceptives is much higher than practice. In all these countries, contraceptive use among adolescents is below 10 percent (Alauddin, 1999).

To understand about contraceptives, one must be aware of sexuality and how a human reproductive health system works. However, discussing matters related to sexuality in most African countries is taboo only left to grandparents in extended families. Living arrangement is therefore important as illustrated in a study by Woog (2003), where young people living with one parent were more likely to be sexually active, to have multiple partners, engage in casual sex and not to use condoms than those in two-parent households. In another study by Rwenge (2000) also quoted by Woog (2003), living with grandparents had a protective effect while living with a sibling alone or with other persons generally increased the likelihood of engaging in sexual risk behaviour. However, in Nigeria, only 39 percent of the 184 parents interviewed discussed sex issues with their children while the discussions at home were those most likely to scare children

rather than provide them with comprehensive information about the realities of sex (Izugbara, 2007, 2008).

With the breakdown of family units especially in the urban areas, sexuality education remains a big challenge for parents. Furthermore, school curriculums do not include subjects on sexuality and contraception and, consequently, adolescents are left to rely on their peers and the media to get information on sexual health as indicated in national information, education and communication situation survey (NCPD, 1977). Information from peers may not always be accurate as illustrated by this quote made by a male adolescent in a study carried out in South Africa "...guys pretend to be knowing how to use condoms even when they don't..." (Maja, 2007). Religious organizations may also not be willing to allow education on contraception with the belief that such information will influence young people to engage in sexual intercourse before marriage. In the recent past, some religious leaders in Kenya burnt condoms and sexuality education materials in protest against sexuality curriculum in schools. In 1980, the Ministry of Education introduced family life education as an examinable subject to give adolescents in Kenya knowledge on sexuality but the programme was shelved due to pressure from Christian and Islamic bodies (Ayiemba, 2001). Similar efforts to introduce family life education by Kenya scouts in 1989 also failed due to religious pressure (Ayiemba, 2001).

To be able to carry out effective sexuality education, teachers must be adequately prepared. In a study at Moi University, Kenya, effects of a well prepared teacher resulted in the ability to comfortably share experiences of sexuality related examples and incidents in her life which helped teachers to construct a classroom to become a safe space for dialogue (Khamasi and Undie, 2008).

Adolescents may underestimate the prevalence of pregnancy because they lack knowledge of actual distribution of pregnancy among themselves (Gage, 1998). A study by Kiragu and Zabin (1995) in Kenya illustrates that some decisions about sex among adolescents are derived from insufficient knowledge and misconceptions rather than from rational considerations. The researchers found that many adolescents believed that they could not get pregnant if they washed their genitalia after intercourse, jumped up and down or had sex standing up. In a study in South Africa, only 21 percent of adolescents knew that conception could occur if they failed to take a contraceptive pill once (Oni et al., 2005). According to Gage (1998), a study in Mauritius found that young unmarried adolescents believed that they could not get pregnant because they engaged in light sex and that they were "good girls" who only engaged in sex when they were in love (Gage, 1998). Similar findings were recorded in Kenya. According to Kiragu and Zabin (1995), 19 percent of males and 11 percent of females in a study among high school students in Kenya incorrectly said that a girl cannot get pregnant if she has sex only once.

According to Brown et al. (2001), case studies in Kenya, Argentina, Peru and Philippines explored young people's impressions of sex education in schools and most (over 50 percent) rated the information inadequate. Teachers were found to focus on discouraging students from sexual activity without indicating the dangers or explaining and teaching safe sex behaviour. If teachers focus on abstinence and do not discuss safe sex practices, it is unlikely that schools will provide information on condoms and other modern contraceptives.

Two indicators used to assess information and knowledge have been identifying the name and types of contraceptives. A major gap in knowledge therefore is whether clients understand how contraceptives work. Inadequate knowledge on how the methods work may contribute to misconceptions related to non-use of contraceptives both for adults and young people.

Some regulatory barriers associated with provider knowledge may be considered as medical barriers or provider barriers as they restrict use of some methods. For example, age may be an impediment where some providers may be reluctant to give hormonal contraceptives to youth. Some medical barriers may be psychosocial, for example, where spousal or parental consent is required before providing a woman or youth with contraceptives. This is illustrated by Bertrand (1995) where a situation analysis in Pakistan revealed that 50 percent of women in the study sample would not be eligible to use hormonal contraceptives as a result of popular misconceptions about age and parity requirements. Improving provider knowledge and skills and providing quality services results in a larger number of clients seeking services and adopting contraceptive use in a more sustained manner.

A situation analysis done in Kenya found that many providers imposed restrictions such as spousal consent and having at least one child for pill use (Ndhlovu et al., 1997). In the same study, 88 percent of health providers said they would require a client to have at least one child, 14 percent would require a client to be married and 8 percent would require spousal consent. Such restrictions affect access to certain commodities among the youth. For example, if service providers are not updated, they may not supply sexually active adolescents with contraceptives

or even know how to address sexuality issues or how to make services friendly for adolescents and this creates a barrier to contraceptive use.

2.5.2 Demographic Factors

Demographic factors include age at first sex and marriage. Age at first sex is crucial because a young person is likely to use a contraceptive if she has prior information, knowledge on how to use and also access to the commodity. Contraceptive use also requires prior planning. Unfortunately, many young people report that their first sex was coerced. Young women may also not have skills to negotiate for safe sex, especially when involved with older men and when sexual intercourse is non-consensual. Further, a study in USA showed that among young people who were pregnant before age 17, two-thirds reported having been sexually abused as children (Johns Hopkins, 1995).

2.5.2.1 Age

Age is one of the factors with potential to influence contraceptive use. Adolescence is a period of exploration as young people clarify their sexual values. They therefore may not consider the cost of action rationally due to limited sexuality information and consequently are more susceptible than adults to rash decisions that could lead to unwanted pregnancy or STI. Adolescents may also believe that they are too young to become pregnant and therefore may not use contraceptives as illustrated in the following quote in a local newspaper from a girl in Vihiga District in Kenya:

Expecting baby number 2.

> "*...amazingly, Judy believes that she is a cursed girl,*
> *she never believed she would get pregnant at age 16*
> *and termed it a bad omen...*" (Tesot J. 2005)

Kiragu and Zabin (1995), in a study among adolescents in high school in Kenya, illustrate that some decisions about sexuality are made from insufficient knowledge rather than considerations of the consequences of risky sexual behaviour. When asked whether they knew enough about how to avoid unwanted pregnancy, about 50 percent males and 61 percent females said they did not. However, 69 percent of males and 27 percent of females interviewed were sexually experienced. In the same study, only 25 percent of the males and 28 percent of females of the sexually experienced adolescents used a contraceptive the first time they had sex. Among high school students in Nairobi, approximately 50 percent of males and 11 percent females reported having sexual intercourse at least once in their lifetime (Kabiru and Orpinas, 2009). In a study carried out in Cameroon (Meekers and Klein, 2002), the likelihood that young men reported ever using condoms increased by age.

The 2008-2009 KDHS indicates that although almost 50 percent of young women have had sex by the time they turn 18, only 4.9 of women aged 15-19 and 23.6 percent of all women aged 20-24 use any method of contraception (KNBS et al., 2010). According to Muganda-Onyando et al. (2003) most of the youth receiving reproductive health services in Kenya are above 20 years probably because adolescents aged 14-19 are in school. Another reason is that few health facilities are youth-friendly. According to the Kenya Service Provision Assessment (2010), only 7 percent of health facilities were youth-friendly (NCAPD et al., 2011). As indicated in Bolivia, adolescents may be afraid of being punished by family members and ridiculed by peers and this may negatively affect their ability to seek out contraceptive services (de Belmonte et al., 2000).

2.5.2.2 Marriage

Marriage for many girls is the beginning of frequent and unprotected sexual activity. According to Haberland et al. (2005), 27 of the 29 demographic and health surveys (DHS) analysed indicated that half of unprotected sexual activity occurs within marriage. However, married girls may have less mobility, networks and exposure to modern media than their unmarried counterparts and this situation is likely to limit their access to modern contraceptives (Alauddin, 1999). According to Alauddin, as many as 40 percent of all young women aged 15-19 years in India are already married and nationally no more than 7.1 percent of married women aged 15-19 use contraception compared with 21 percent among women aged 20-24 years. Similar experiences have been reported in Kenya. According to the 2009 KDHS, 50 percent of all women enter marriage before their 20th birthday and use of modern methods among married adolescents aged 15-19 years was only 19.6 percent while only 22 percent of women 20-24 years and 5 percent of women 45-49 used contraception before having any children (KNBS et al., 2010).

Haberland et al. (2005) comparing findings in Kisumu in Kenya and Ndola in Zambia indicated higher HIV infection rates among married girls aged 15-19 compared to sexually active unmarried girls of the same age at 33 percent compared to 22 percent in Kenya, and 27 percent compared to 16 percent in Zambia respectively. Differences in age between husbands and their young wives may exacerbate problems surrounding women's autonomy, decreasing young women's ability to negotiate with their husbands about sex, contraception and child bearing.

In sub-Saharan Africa where polygamy is common, a young woman may be inclined to quickly prove her fecundity so that her husband will avoid or at least put off taking a second wife. Age between the husband and wife may also affect discussion on contraception. According to Alauddin (1999) in a study on reaching newlywed and married adolescents in Pakistan, contraceptive use was more likely when both partners as opposed to only the wife desired to prevent childbearing.

Data from 46 DHS showed that by age 18, about 50 percent of adolescent girls had married or entered a union in India and Bangladesh and 20 to 40 percent had married in Latin America and the Caribbean, while most of the countries of sub-Saharan Africa had the highest levels of adolescent childbearing. However, contraceptive use by married women aged 15-19 is below 10 percent in these countries (Alauddin, 1999).

2.5.3 Socio-Economic Factors

Socio-economic factors that may affect contraceptive use include costs (transport and time), material ownership, education and perceived cost of treating complications arising from use of contraceptives. Economic accessibility is the extent to which the cost of reaching the service and supplies are within the economic means of the target group. In a study conducted in Pakistan, FGDs indicated that expected time and financial costs of managing side effects and potential loss of work time de-motivated contraceptive use (Casterline et al., 2001). In a study on preferences for services in Kenya and Zimbabwe (Erulkar et al., 2005), 16 percent of adolescents did not seek reproductive health services because they did not have money while 12 percent felt that the clinics were too far. In a study to assess the impact of recession on family planning in USA, 25 percent of women struggling financially were reported to be inconsistent with contraceptive use:

4 percent skipped pills, 12 percent went off pills for a month and 11 percent obtained fewer packets of pills (Guttmacher, 2009).

Economic barriers can prevent people from using contraceptives. In a study on contraceptive dynamics in Guatemala (Bertrand et al, 2001), Ladino women who were more likely than Mayans to work outside the home, own a radio and televisions (proxies for economic status) and had higher levels of education, were more likely to use contraceptives (Bertrand et al., 2001). Lack of education may inhibit a young woman's ability to use contraception properly, reduce her decision-making power in relation to contraceptive choice or result in her having fewer alternatives to motherhood and therefore weaker motivations to delay marriage or first birth (Alauddin, 1999).

Socio-economic status measured against parents' material ownership and students' ranking in class has been found to be associated with contraceptive use. According to Kiragu and Zabin (1995) a positive attitude towards birth control and academic achievement were the most important predictors of use among high school students. According to KNBS et al. (2010), use of any method of contraceptives among women 15-49 years ranged from 20 to 55 percent among the lowest and the highest wealth quintile respectively. In the same report, contraceptive use in Kenya was found to increase with the level of education with 14.1 percent of clients with no education and 60 percent among women (15-49 years) with at least some secondary education.

Economic hardships can lead to early initiation of sex activity and early childbearing. According to Gage (1998), economic exchanges are almost always entered into with men who are perceived

as being in a position to provide economic support and to accept responsibility for any pregnancy that might occur. Girls may also believe that by having a child, they can persuade their partners to marry them. Both these reasons can be primary motivators not to use contraceptives. Furthermore, contraceptives may be too expensive for adolescents to afford. According to Casterline et al. (2001), Easterline Synthesis Framework also indicates that fertility regulation is a function of two classes of factors that include motivation to avoid pregnancy and the cost of fertility regulation. Long distances travelled that involve transport costs, especially in the rural areas, may compound this. Easterlin (1985) indicated that a family planning programme lowers costs by increasing information and providing services below cost. A family planning programme also lowers subjective costs by lending legitimacy to practising contraception (Casterline et al., 2001).

2.5.4 Physical Distance

Physical distance to family planning clinics or other suppliers of contraceptives can influence contraceptive use (Gage, 1998). For example, Bertrand et al. (2001) found that Guatemalan women living within 10 minutes of services were more likely to report contraceptive use than women living far from these services.

2.5.5 Environmental Factors

The environment where an individual lives influences contraceptive use. People who live in urban environments are more likely to be exposed to reproductive health and contraception messages than those living in rural settings. Information and knowledge has been associated with increased contraceptive use. According to Fikree et al. (2001), young women exposed to urban environments in Karachi were found to be significantly more likely to use contraceptives than

their rural counterparts. This finding may reflect exposure to information and higher literacy levels common in urban environments.

However, Kiragu and Zabin (1995) found no significant difference in contraceptive use between urban and rural young people in Kenya probably because these adolescents have little or no access to services regardless of where they live. According to this study, only 10 percent of young people who were sexually active reported regular use of birth control. The health system in Kenya does not adequately accommodate adolescent clients. According to the Kenya Service Provision Assessment Report of 2005, only 4 percent of public health facilities were youth friendly and 7 percent could provide youth friendly counselling in 2010 (NCAPD et al., 2005 and 2010). In these facilities, providers were often biased and untrained and did not feel comfortable serving sexually active youth.

2.6 Behaviour Theories

Psychosocial behaviour models have been used to explain reasons for behaviour. However, these models may give an incomplete picture because they do not emphasize contextual factors likely to affect behaviour. This section discusses several theories that explain adolescent sexual and fertility behaviour. The social and cognitive skills model that Gilchrist and Schinke (1983) developed and tested posits that for behaviour to change individuals need specific cognitive and social skills to resist pressures and to negotiate interpersonal interactions successfully (Bandura, 2001). However, this theory does not address personal values or attitudes towards the behaviour or whether other factors may influence behaviour change.

Social learning theory (Bandura, 1986) assumes that whether an individual will engage in or avoid a particular behaviour is determined by a sequence of factors. First, the individual must understand the association of the behaviour with an outcome, for example, that unprotected sex carries a high risk of pregnancy. Second, the person must believe that he or she is capable of either engaging in or avoiding the behaviour and that the specific strategy chosen can be implemented effectively. For instance, individuals must believe that they have the capacity to abstain from sex and that they can effectively use a strategy to avoid sex or a pregnancy. Finally, people must believe that avoiding the outcome is beneficial, for example, that delaying sex or using a contraceptive will make their lives better in ways that matter to them. Individuals develop their specific attitudes and feelings about behaviour (and avoidance of behaviour), and then by developing the necessary skills through practices that enable them to behave in accordance with the beliefs they develop. However, this theory does not explain why girls would engage in premarital sexual intercourse even after the knowledge that such a practice could have negative outcomes and is therefore not beneficial.

Several other value-expectancy models also consider the costs and benefits associated with engaging in or avoiding a specific type of behaviour. According to the health belief model, for example, the probability that persons will engage in a particular preventive behaviour, such as abstinence and use of contraception, is based on several personal perceptions (Janz and Becker, 1984; Rosenstock et al., 2001). The behaviours include: perception of the probability of an outcome as a result of unprotected sex; the perceived seriousness of experiencing the outcome, for example, not being able to complete school; and the perceived benefits minus the perceived costs of avoiding the outcome (e.g., completing school outweighs the difficulty of using a

contraception). The health-belief model proposes that a person considers each of these criteria before engaging in a protective or preventive behaviour. Thus, protective behaviour is most likely to occur if the adolescent perceives himself or herself as vulnerable to an outcome, perceives the outcomes as negative and perceives the benefits of protection to outweigh the costs of non-protection. If the cost of completing school is higher than using a contraceptive, then an adolescent would not be expected to engage in risky sexual behaviour. However, this theory does not explain why people engage in unprotected sex and what influences them to value the short-lived gratification of sex as opposed to long-term negative outcomes like dropping out of school or contracting HIV/AIDS.

Against this background, adolescents will have to make an informed decision based on the information available and the cost of implications in terms of the outcome of behaviour to use or not to use a contraceptive. In explaining factors that influence adolescent contraceptive use, two theories are considered. These two behaviour theories are the theory of reasoned action and the opportunity cost perspective. The theory of reason action, proposed by Fishbein and Ajzen (1975, 1980), postulates that behaviour is influenced by several factors among them one's belief about the outcome of an action, one's assessment that a particular behaviour is desired by significant others, and a motivation to comply with views of significant others. According to this theory, adolescents would have to believe that avoiding sex or using contraceptives would prevent unwanted pregnancy and STIs and that significant others would not want unplanned pregnancies and STIs. Complying with the wishes of significant others would mean that adolescents would take action or not take action. Taking action to prevent a pregnancy would influence adolescents abstaining from sex or using a contraceptive method. Within the social

environment, several factors could be grouped into significant others, for example, peers, spouses, religion, schools, available information and parents.

Providing information can be an important component in an intervention particularly when combined with other strategies that support adaptation of positive behaviour. These models can also provide useful insights on how to address attitudes or values supportive of contraceptive use or the development of skills to help teens avoid pressure and negotiate difficult interpersonal relationships. From an ecological perspective, the factors that motivate one to use reproductive health services range from the individual adolescent and his or her partner, to the nuclear family, extended family, peer group, neighbourhood, religious organization, school, and to the larger culture including the media, the economy and social policies. Interventions should therefore provide knowledge, address attitudes and values relating to contraceptive use, and provide skills to help adolescents delay sexual intercourse or choose when to engage in their first experience and focus towards using reproductive health services.

In the opportunity cost perspective, Moore and Betsy (1986) indicated that cost–benefit evaluation of an action influences decision making (Bandura, 1986). The theory emphasizes that adolescents will weigh the benefits of unwanted pregnancy against future opportunities. Opportunity cost perspective is therefore important in explaining contraceptive use in different socio-economic segments of society. According to the opportunity cost perspective model, a pregnancy will cost much more to a college bound student than to an adolescent whose future does not realistically include a good education, a good income and a good marriage. The motivation to prevent parenthood is therefore substantially lower for adolescents from

disadvantaged families and communities. The Easterlin (1985) theory on cost also explains that a family planning programme lowers market cost by increasing information and providing services free or at below cost. It also lowers subjective costs by lending legitimacy to the notion of practising birth control. The conceptual framework guiding this study (Figure 2.2) is modified from an analysis of several theories and different conceptual approaches found in the literature review that were found to influence use or non-use of contraceptives among adolescents and youth. According to Bertrand (1995), access, quality of care and medical barriers are defining characteristics of the supply environment and are key determinants in the chain of events whereby individuals interested in fertility regulation decide to seek services, adopt a method and sustain contraceptive use.

2.7 Theoretical Framework

Perceptions and barriers that affect contraceptive use are many and varied. However, factors which are specific to adolescents and youth make it important to focus the study to this segment of the population. While perceptions are formed from knowledge gathered from the environment, physical barriers may be influenced by knowledge of supply source, socio-cultural environment, socio-demographic factors, socio-economic factors and the service provision environment.

Using the theory of perception formation, this study helps one understand how the environment and personal factors influence behaviour to use or not to use contraceptives among adolescents. It also helps to understand the dynamics within the environment and personal factors that influence or are influenced by perception with negative or positive behaviour outcomes that can be interpreted as barriers or enhancement of expected positive behaviour, in this case

contraceptive use. Applying the theory of perception formation and contraceptive use, personal factors would include information and knowledge and psychological and demographic factors; environment would include socio-cultural, socio-economic and any other physical factors in the environment that would influence adolescents' contraceptive use.

The family is the first environment of socialization and therefore important in influencing behaviour. Information given by family members is therefore likely to form negative or positive perceptions on contraceptive use. Depending on the community where parents were brought up, their values will inform how they pass sexuality information and therefore influence their children's perception on reproductive health issues and contraceptive use (Twa-Twa, 1997; Gage, 1998; Jaccord and Patricia, 2000; Meekers and Klein, 2002; Woog, 2003).

School environment is the second socialization unit that provides an opportunity to influence sexuality behaviour. In school, adolescents interact with teachers and peers and these two groups are significant in providing sexuality information. However, if teachers do not have adequate and accurate knowledge on adolescent sexuality, this is likely to affect the quality of information given to the students (Khamasi and Undie, 2008; Brown et al., 2001). Teachers are also a product of society and therefore hold beliefs that may view sexuality education as immoral, hence, they may not be willing to discuss contraceptive use. In such a situation, adolescents in schools are left to rely on their peers and the media for information on sexual health as indicated in a national information and education survey in Kenya (NCPD, 1977). Peers may pass inaccurate sexuality information that enhances risky sexual behaviour while media may model

unhealthy practices by sexually explicit yet consensual relationships with few pregnancy prevention messages (Wingood et al., 2001).

Socio-economic factors are important in influencing contraceptive use. This concept unifies several intervening factors that hinder access to contraceptives. Such intervening factors include education, affordability of commodities and affordability of information materials such as radio and television. These sources of information contribute to increasing knowledge on sexuality and contraceptives. The Easterlin Synthesis Framework also indicates that fertility regulation is a function of two classes of factors that include motivation to avoid pregnancy and the cost of fertility regulation (Casterline et al., 2001). Economic barriers prevent contraceptive clients from seeking services and make contraceptive continuation difficult (Bertrand et al., 1998; Gage, 1998; Zulu et al., 2002; Madise et al., 2007; Guttmacher, 2009). In areas with high rates of adolescent marriage, girls' education levels are usually low and lack of education may further influence a young woman's ability to use contraception properly and inhibit her decision-making power in relation to contraceptive use (Klepinger Teal., 1995; Alauddin, 1999).

Awareness and knowledge of contraceptives, sexuality issues, and risks associated with unprotected sex influence contraceptive use (Ladipo, 1986; Baker, 1992; Levinson, 1995; Freya et al., 1997; Gage, Brandson and Meekers 1993; Calves, 1998; Gage, 1998; Gupta and Leita, 1999; Brown, 2000; Otoide et al., 2001; Li-Wei Chao, 2002; Sohail, 2002; Bruckner et al., 2004; Laurie, 2004; Oni et al., 2005; Schwello, 2005; Ryan et al., 2007. In addition, information influences perceptions towards protective behaviour. Based on social learning theory (Fishbein and Ajzen 1980), if young people perceive themselves to be at no risk of pregnancy or STIs, they

will not be motivated to use protection. Knowledge is influenced by both socio-cultural environment and socio-economic factors. The family, the community and peers influence perceptions on sexuality and contraceptive use. Married adolescents may have limited access to information due to limited social mobility and networking and this influences access to and use of contraceptives (Alauddin, 1999). However, socio-economic factors influence knowledge of contraceptive use through inability to afford information materials and contraceptive commodities. If knowledge is inadequate or inaccurate, youth are likely to develop negative perceptions towards contraceptives and this may de-motivate use through unfounded fear of side effects (Agyei and Epema, 1992; Casterline et al., 2001). Accurate knowledge and communication on contraceptives influences self-confidence to use the methods and also influences informed decision making (de Belmonte et al. 2000; Rwenge, 2000; Casterline et al., 2001). Therefore, even when methods are available and adolescents can afford them, the youth need to have positive perceptions to use contraceptives.

The environment where services are provided is another factor that influences access to contraceptives and use. This concept relates to the quality of services (Bertrand, 1995; Ndhlovu et al., 1997; Magnani et al., 2001; Erulkar et al., 2005; Prince and Hawkins, 2007). Enhancing the quality entails: the environment should enhance access to contraceptives when clients want them, policies at health facilities support contraceptive use by adolescents, clients are counselled on contraceptives and helped to make a choice, clients enjoy privacy, confidentiality and satisfaction with the quality of services provided, methods are available when needed, hours of services are convenient and waiting time is short. However, while the service environment influences access to contraceptives, it also contributes towards formation of perceptions. If

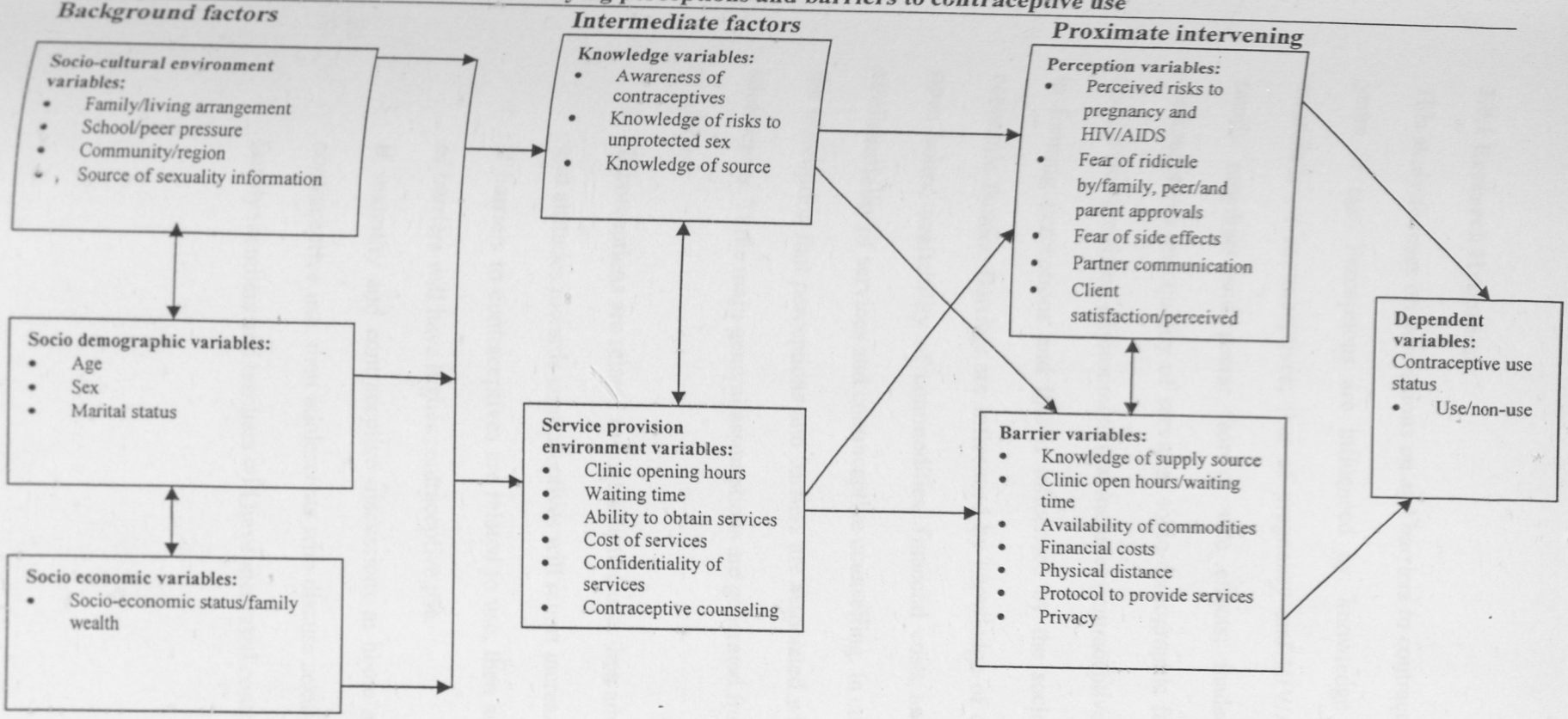
adolescents perceive the service environment to be unfriendly, their visits to the clinic will be limited, contributing to contraceptive drop-outs (Njau and Radney, 1995; Koening et al., 1997; Otoide et al., 2001; Harper et al., 2004). According to the Service Provision Assessment of 2010, only 7 percent of public health facilities in Kenya were youth friendly (NCAPD, 2011). The environment where adolescents seek services is also influenced by socio-economic factors. If the clinics are not youth-friendly, young people who can afford the cost of contraceptives will buy them from pharmacies where services are available and confidential, although information is inadequate (Otoide et al., 2001).

Therefore, even when adolescents have positive perceptions and are ready to adopt a method, external barriers may hinder access to and use of contraceptives. In summary, for adolescents to adopt contraceptive use, they need to overcome their negative perceptions and external barriers.

This study focuses on barriers to and perceptions on contraceptive use among adolescents 15-19 years of age. A comprehensive framework of the barriers to adolescents' contraceptive use has been adopted from Fishbein and Ajzen on reasons action theory. The cost perspective and Easterlin framework applied by Gage in her study shows that demographic, socio-economic, environmental and cultural factors act through diverse range of intermediate factors that include information and knowledge that influence perceptions and barriers to influence contraceptive use. The sociological framework by Twa-Twa (1997) emphasizes effects of the family in shaping adolescent behaviour and peer influence that affects sexuality activities; Magnani et al. (2001) and Prince and Hawkins (2007) emphasize effects of service environment on

contraceptive use. This framework forms the basis of the conceptual framework of the perceptions and barriers that affect adolescent contraceptive use adopted in Figure 2.2.

Figure 2.2: A conceptual framework for studying perceptions and barriers to contraceptive use



Modified from: Fishbein and Ajzen (1980); Twa-Twa (1997); Gage (1998); Magnani et al. (2001); Prince and Hawkins (2007).

2.8.1 Research Hypothesis

This study focuses on perceptions on and barriers to contraceptive use among adolescents 15-19 years of age. Perceptions are influenced by: knowledge on risks to unprotected sex and awareness on contraceptives; fear of pregnancy and HIV/AIDS; fear of ridicule by parents, family members and peers; fear of side effects; inadequate partner communication on contraceptives and quality of services; socio-demographic factors that include age at first sex; and service provision environment that includes contraceptive counselling. Knowledge is critical in forming perceptions and this is influenced by the socio-cultural environment and socio-economic factors. Barriers are influenced by knowledge of contraceptive supply source, clinic open hours, availability of commodities, financial costs and affordability, physical distance, confidentiality of services and contraceptive counselling. In conclusion, this study is premised on the assumption that perceptions and barriers are associated with contraceptive behaviour among adolescents. Three main general assumptions are generated from perception and barrier variables as follows:

1. If perceptions are related to contraceptive use, then adolescents with positive perceptions and attitudes towards contraceptives will report increased contraceptive use.
2. If barriers to contraceptives are related to use, then adolescents who receive low levels of barriers will have higher contraceptive use.
3. If sexuality and contraceptive discussions at home and in school are associated with contraceptive use, then adolescents who discuss sexuality and contraceptive issues with family members and teachers will have increased contraceptive use.

2.8.2 Specific Hypothesis

1. Higher knowledge of how to use a contraceptive method is associated with higher levels of contraceptive use.
2. Marital status is associated with higher contraceptive use.
3. Supportive service environment that is youth friendly is associated with higher contraceptive use.
4. Higher knowledge of risks of unprotected sex is associated with increased contraceptive use.
5. Parental approval of contraceptive use is associated with higher contraceptive use.
6. Partner communication on contraceptives is associated with contraceptive use.

2.9 SUMMARY OF LITERATURE REVIEW

This section provides a summary of the main findings of literature review, gaps in knowledge and how this study addresses the gaps. The literature review shows that married adolescents have less mobility, networks and information opportunities than their unmarried counterparts and this scenario is likely to affect access to modern contraceptives (Alauddin, 1999). As indicated by Brown et al. (2001), there is need for in-depth research and exploration of the perspectives, experiences and barriers to contraceptive use that face married adolescents and youth in different settings in accessing information and services. Although the study by Kiragu and Zabin (1995) associated high class achievement with contraceptive use in Kenya, it did not explore any sexuality information given in schools that could be associated with contraceptive use. Although contraceptive use among unmarried adolescents was found to be unacceptable in most studies, parental support was found to be associated with increased use. The literature review also identified environmental and social support as important to influencing protective behaviour. Adolescents who perceived that their parents supported condoms were found to be more likely to use them (Gage, 1998; Meekers and Klein 2002). The studies did not investigate what messages and information indicated to adolescents that their parents were supportive.

Several theories associate perception with behaviour change. Perceptions are reported to be informed by knowledge and significant others in society. The social learning theory states that a person must understand the association of behaviour and the outcome of that behaviour (Bandura, 1986, 2000). Theory of reasoned behaviour indicates that significant others are important in motivating adoption of a behaviour (Fishbein and Ajzen 1980). Since contraceptive awareness is much higher than use, research must determine whether the current indicator for

knowledge is accurate to predict contraceptive use and whether knowledge and understanding of how contraceptives work is more associated with increased use among adolescents.

Demographic and health surveys have been the main source of quantitative data. A few studies have collected primary data from in-school adolescents using self-administered questionnaires. Gage (1995) used other studies carried out in Asia and sub-Saharan Africa to review and understand perceptions of the cost and benefits of engaging in non-marital sexual activity; contraceptive use and condoms; and the role of family, peers and other attribute factors in shaping their reproductive decisions. Results from Asia and Africa indicate that family influence on adolescents' pregnancy varies between cultures and socio-cultural norms are major factors influencing decisions to use contraceptives even more than education. The strength of using other studies is their ability to compare behaviour in different countries and regions. However, the method has shortcomings because it does not provide for probing and clarifying of information. Since cultures are different, specific influences on contraceptive use are likely to be varied across different societies. Specific studies are therefore required to inform policies and programmes that are relevant to influence contraceptive use among adolescents living in different environments.

Limited research on sexuality discussions among family members and schools has made it difficult to understand messages that have potential to influence contraceptive use from these two significant institutions of socialization (Gage, 1998; Hulton et al., 2001). Although support by family members has been associated with increased use of contraceptives and is therefore an important research area, this was not the main focus of this study due to resource barriers.

However, IDIs with parents and teachers allowed for a better understanding of sexuality discussions with their children at home and in school. Most studies have used DHS data and also self-respondent questionnaires and this has limitations on probing for clarity. A few studies combined quantitative and qualitative data collection and this limits understanding the reasons why and how behaviour on contraceptive use among adolescents is influenced.

Gaps Identified in Literature Review

The review of literature highlights several gaps. First, the studies carried out did not explore the content of sexuality discussions both in schools and among family members. Limited research on sexuality discussions among family members and schools has made it difficult to understand messages that have potential to influence contraceptive use in these two institutions of socialization and also whether sexuality messages passed by parents or teachers have an impact on contraceptive use.

Second, although parental support was found to influence condom use among adolescents, it was not clear about what messages on contraceptives were passed by parents and whether messages passed by parents have influence on adolescents' perceptions towards contraceptive use.

Third, although condom use provides dual protection, the relative importance of condoms for prevention of STI/HIV/AIDS and pregnancy prevention was not determined. Fourth, most of literature reviewed used self-administered questionnaires, limiting opportunities to probe and clarify sexuality issues. In addition, since cultures are different across different environments, the secondary data which most studies used are limited in validating information from different sources like schools, parents, male and female adolescents.

Fifth, studies have used awareness of contraceptives methods as an indicator to measure knowledge. This leaves a gap on whether the current indicator for knowledge is accurate to measure the knowledge of how contraceptives work and whether knowledge and understanding of how contraceptives work is associated with increased use among adolescents. Sixth, the literature reviewed did not compare effects of barriers with those of perceptions and contraceptive use.

How Gaps are Addressed

This study addressed knowledge gaps to model pathways relating to individual factors among married and unmarried adolescents 15-19 years. It further linked information between individual adolescents, their family members and school environment, providing empirical evidence on the influence of perceptions and barriers to contraceptive use using a case study in Nairobi, Kenya. To address gaps in the literature review, several strategies were put in place as follows:

One, to address information gaps on sexuality discussions at the family level and in schools, the study designed a structured questionnaire to gather data on content of sexuality discussions both at home and in school. The questionnaire collected information on family members who discussed sexuality information and the perceptions adolescents have on their parents or guardians regarding use of contraceptives. Since sexuality issues are difficult to cross check with sexual partners due to societal bias, the study used FGDs for both married and unmarried adolescents. Both female and male adolescents were included in the study.

Two, information from adolescents was validated through IDIs and FGDs with parents and teachers. During household listing, adolescents provided information on schools they had attended; teachers allocated counselling sessions in these schools were interviewed. Parents whose children were interviewed provided information on the content they discussed and also gave suggestions on how to improve sexuality discussions with their children. Linking adolescents interviews with their parents and teachers helped to understand perceptions and barriers that influence contraceptive use among adolescents. Using a variety of data collection methods was useful in understanding how and what sexuality messages are passed in school and among family members. Using both quantitative and qualitative methods enhanced triangulation of information. This helped explain the impact teachers and parents had in influencing contraceptive use, and understand school policies and the content of sexuality issues discussed in schools and the recommendations to improve adolescent reproductive health discussions.

Three, through descriptive statistics and multivariate regression data analysis, the study compared effects of background factors and the intervening variables on contraceptive use. Multivariate regression analysis enabled the testing of the relative association of both barriers and perceptions and in finding out the major determinants of contraceptive use.

CHAPTER THREE

STUDY METHODS

3.1 Introduction

This chapter is divided into five sections. The first section describes Nairobi Province (now Nairobi County) from where data were collected. The second section describes the study area and highlights the study population. Section three discusses approval of the study. Section four discusses the sample design and determination of the sample size. Section five describes data collection process, analysis and ethical issues.

3.2 Description of Nairobi Province

Nairobi is the capital city of Kenya and it is one of eight provinces in the country. The city lies between Latitude 01° 17' South of Equator and Longitude 36° 48' East. Its altitude is 5,500 feet above sea level. Nairobi has a moderate climate resulting from its high altitude with temperatures ranging from 26°C to 10°C (lowest). Nairobi has a bi-modal rainfall pattern with the long rains between March and May and short rains between September and October to December Mean annual rainfall is 1150 millimetres. The province (currently referred to as Nairobi County since the promulgation of the new Constitution in August 2010) is divided into central district, the main business district, and its environs. The business district also houses government department headquarters and many international agencies. The city houses the headquarters of the United Nations in Africa and it is segmented into high, middle class and informal settlements, also called urban slums. Nairobi is in the process of becoming a metropolis. The Nairobi metropolis has been established and its extent determined to cover the surrounding satellite towns. It is an industrial city with its industrial products serving the Eastern

African region. Other economic activities include trade, manufacturing, small-scale businesses, education, transport, telecommunication, urban agriculture, sports, entertainment, banking, building construction and tourism. The Jomo Kenyatta International Airport is one of the largest airports in Africa.

Nairobi exemplifies rapid urbanization amidst deteriorating economic and health conditions of its population that characterize African cities. With an annual growth rate of 7 percent over the last three decades, Nairobi remains one of the fastest growing cities in Africa. The population has increased from 350,000 in 1962 to 3,138,369 in 2010 (KNBS et al., 2010). According to the 2009 census, the population of adolescents aged 15-19 years is 270,064 (KNBS et al., 2010). Rural–urban migration, especially by young people, poses challenges in health care, employment and civil order. Due to poverty, more than half of the city's population lives in the slum communities that occupy only 5 percent of the residential area of the city (APHRC, 2002). The population in Nairobi has multi-cultural, multi-ethnic and socio-economically diverse residents.

While the total fertility rate in Kenya is 4.6, Nairobi's is 2.8 (KNBS et al., 2010). Current use of modern contraceptive methods among married women 15-49 years is 49 percent compared to 39 percent at the national level. Although most of the modern hospitals in the country are based in Nairobi, infant mortality rate is 60/1,000 births (which is among the highest in the country) compared to 52/1,000 births at national level (KNBS et al., 2010). Despite 89.4 percent of women in Nairobi delivering in health facilities compared to the 43 percent national average, an overwhelming 38.6 percent women in the city found distance to the health facilities too far and 5.6 percent deliveries were assisted by traditional birth attendants (KNBS et al., 2010). Health

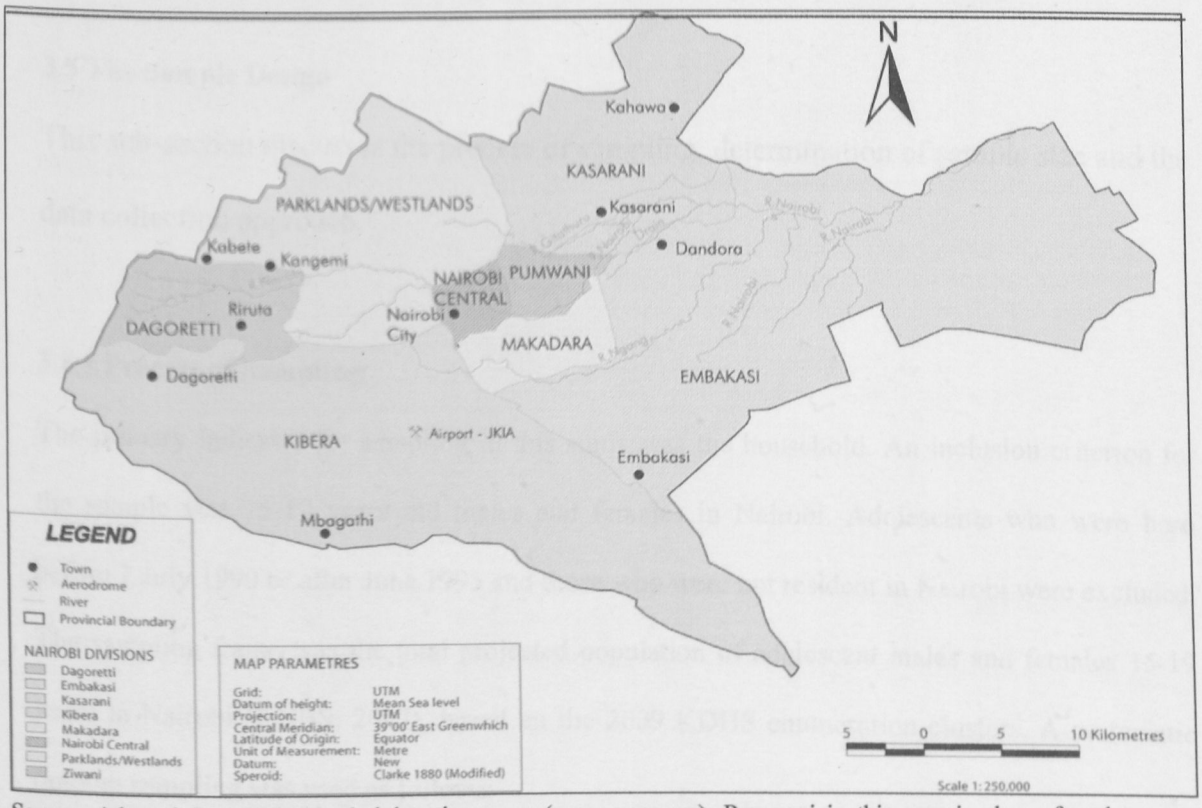
care in Nairobi is managed through the Nairobi City Council which has 65 health facilities spread throughout the city. Most health facilities were constructed immediately after independence. The increase in population since independence has been a constraint to providing adequate access to health care for the existing facilities. The general assessment of reproductive health needs of adolescents is reported to be particularly poor in Nairobi, especially in the informal settlements (APHRC, 2002). However, the central government, private sector, local and international NGOs supplement health care services in the community.

3.3 Study Area

This study was conducted among male and female adolescents 15-19 years of age in Nairobi. The study used DHS enumeration areas which are based on 1999 census. Data were collected in all eight Administrative Divisions in Nairobi: Central, Dagoretti, Embakasi, Kasarani, Kibera, Makadara, Pumwani/Ziwani and Westlands/Parklands (Figure 3.1).

According to the population projections, 120,800 males and 159,600 female adolescents (Total 280,400) 15-19 years of age lived in Nairobi (KNBS, 2007) at the time of this study. Carrying out the study in Nairobi had several advantages. First, the population density provided the opportunities to interview teachers from several high schools. Second, due to the heterogeneity of the population in the city, the sample included a wide representation of different ethnic and religious groups, and diverse socio-economic status and marital status. With the rural–urban migration of young people to the city and the high number of schools, it was possible to get adequate numbers of in- and out-of-school adolescents for the study. In addition, it was possible to interview parents.

Figure 3.1: Map of Nairobi showing the eight divisions of the study



Source: Adapted from Nairobi administrative maps (www.unep.org); Pumwani in this map is also referred to as Ziwani.

3.4 Approvals

The Nairobi University Board of Post Graduate Studies approved the proposal for this study. Permission to conduct the survey was given by the National Council for Science and Technology Ethics and Protocols Board. KNBS gave permission to use KDHS enumeration areas. The Nairobi Provincial Commissioner (PC) approved data collection in the community (Appendix 3.12). The PC notified and gave a copy of the study authorization to the area district officers, the Provincial Medical Officer and area administration chiefs. Administration chiefs in their

locations allocated community leaders to accompany the research team during households listing exercise.

3.5 The Sample Design

This sub-section discusses the process of sampling, determination of sample size and the data collection approach.

3.5.1 Process of Sampling

The primary indicator for sampling in this study was the household. An inclusion criterion for the sample was 15-19 years old males and females in Nairobi. Adolescents who were born before 1 July 1990 or after June 1995 and those who were not resident in Nairobi were excluded. The sampling frame was the total projected population of adolescent males and females 15-19 years in Nairobi (KNBS, 2007), based on the 2009 KDHS enumeration clusters. A systematic random sampling was used as follows:

Stage 1: established KDHS enumeration clusters in Nairobi (using 1999 census).

Stage 2: proportionally identified an estimate of adolescents in each cluster household in all the enumeration areas.

Stage 3: calculated a representative sample of the estimated 280,400 projected adolescents in Nairobi.

Stage 4: arranged the 53 KDHS clusters by administrative divisions.

Stage 5: randomly identified 40 percent of the clusters from the 53 KDHS clusters to satisfy the population sample required.

Stage 6: developed a listing tool and used it to visit all the households in the 22 randomly selected clusters; used enumeration maps to identify and list adolescents 15-19 years that met the study criteria.

Stage 7: numbered each household on a table from one to the last household by each cluster.

Stage 8: developed a list of all households with adolescents 15-19 years old.

Stage 9: proportionally calculated the number of respondents required from each cluster to satisfy the sample required.

Stage 10: conducted interviews using individual respondent questionnaire for participants identified using the interval generated and without replacement until the required number of adolescents was arrived at.

Before the commencement of the study, a desk review was carried out to determine the number of DHS clusters and households in the 8 administration divisions in Nairobi Province. The study had 4,776 enumeration clusters with households ranging between 0 and 578 households. The population projection for adolescents 15-19 years was obtained from KNBS.

3.5.2 Determination of Sample Size

To determine the number of adolescents to interview, a probability sample using a normal sampling distribution was used for precision (Israel, 2009). With an estimated 95 percent confidence level and ±0.5 precision, the sample size calculation used the equation below:

$$n_o = (Z^2pq)/e^2$$

$$= (1.96)^2 (0.5)(0.5)/(0.5)^2$$

Where n_o = sample size of the adolescents to be interviewed

$p = 0.5$ maximum variability

$q = 1-p$

e = allowable error (desirable precision)

Z = critical probability in terms of the normal standard deviation.

Based on the "National Statistical Service and Sample Size Calculator" (http://www.surveyssystem.com/sscal.htm) and using a 95 percent confidence level, a confidence interval of 3 and relative standard error of 10 percent, from a projected population of 280,400 (159,600 females and 120,600 males) adolescents aged 15-19 years of age in Nairobi, a sample size of 1,063 adolescents was needed. A sample comprising 1,200 adolescents was considered to take into account of 10 percent lost or damaged questionnaires. Although the focus of the study was female adolescents, it was useful to compare and understand the experiences of males. To be able to estimate the number of clusters to use, the projected number of adolescents (280,400) was proportionally allocated among 4,476 enumeration clusters of 651,861 total households using the 1999 census (see Table 3.1 and Appendix 3.1). All 53 clusters in the 8 administrative divisions were arranged in alphabetical order from 1 to 53 using excel worksheet: Central, Dagoretti, Embakasi, Kasarani, Kibera, Makadara, Pumwani and Westlands.

To calculate the interval for subsequent numbers, the total (53) clusters were divided by the required (22) clusters and the result of 2 was arrived at. Using the National Information for Policy, Research and Decision Making (http://www.nss.gov.au/nss), a systematic sampling method was applied as follows:

$k = N/n$

$N = 53$

$n = 22$

$k = 53/22 = 2.4$

Rounding k to the nearest integer:

$k = 2$

To get the starting point, 53 numbers were balloted and number 25 was picked.

From cluster number 25, every 2nd cluster was selected without replacement moving clockwise. The listing of all households in the 22 clusters included identification information, names of all occupants and their relationship with head of household, age and sex (Appendix 3.2). The listing included whether adolescents were attending school and for those attending school in Nairobi, the name of the school. Information on school attendance was useful to identify school teachers to participate in the in-depth interviews. The number of adolescents 15-19 years was selected proportionately according to the cluster population size (Appendix 3.3). The number of adolescents for individual interviews from each cluster was calculated using the following method:

$$\left\{ \frac{\text{Number of adolescents listed in each cluster}}{\text{Population listed in all 22 clusters}} \right\} \times \text{sample required.}$$

After listing of adolescents in each cluster, all households with young people 15-19 years were arranged in numerical order. A random number was picked through a ballot as a starting point. To calculate the interval, the number of households with adolescents listed was divided by the sample population required:

$$\left\{ \frac{\text{Number of households with adolescents in cluster}}{\text{Sample population required in cluster}} \right\}$$

Households with adolescents 15-19 years were selected without replacement using the interval generated until the sample size in each cluster was arrived at.

As expected, Embakasi had the highest number of adolescents interviewed due to its large number of households. Since the 1999 census, the number of households in Embakasi had increased about nine times. Kasarani and Pumwani had the lowest number of houses enumerated. During the interview, some families had moved reducing the actual number of respondents expected. As a result of shifting residence, all households with eligible adolescents in those clusters participated. As a result, Makadara had a higher number of respondents than expected, increasing from 37 to 45.

3.6 Data Collection Approach

The study used a mixed method approach: triangulation of information from both quantitative and qualitative methods to enrich the findings. According to Jick (1979), triangulation is a combination of methodologies in the study of the same phenomenon. Triangulation of information enhanced cross-checking for internal consistency or reliability. It was used to capture a more complete holistic and contextual portrayal by parents, teachers and adolescents themselves. Triangulation was also used to enrich understanding by allowing new and deeper dimensions to emerge, dissimilar results to emerge and provided an opportunity to reconcile the differences that enriched explanations for divergent results. The data collection methods were: structured interviews, in-depth interviews (IDIs) and focus group discussions (FGDs). While qualitative methods were important for gathering information on causal context of contraceptive use among adolescents and some of the challenges and enablers, quantitative methods were used for statistical measures of perceptions and barriers that influence contraceptive use.

Table3.1: Summary of sampled households and results of adolescents interviewed

Divisions	Number of households (1999 census)*[a]	Estimated adolescents by households*[b]	Households enumerated*[c]	Actual number of adolescents identified in households	Expected sample to be interviewed	Actual number interviewed
Central	123	53	248	68	46	31
Dagoretti	287	123	325	73	49	48
Embakasi	412	177	3,672	1,133	752	716
Kasarani	88	38	144	27	18	13
Kibera	558	241	423	119	80	77
Makadara	140	60	252	54	37	45
Pumwani	61	26	109	67	31	30
Westlands	1,692	727	1,023	228	156	127
Total	3,361	1,445	6,197	1,769	1,169	1,119

Notes: a) Source of households adopted from 1999 census; b) Number of adolescents estimated based on 1999 census; c) Actual households enumerated for the survey. Some of the households had increased since the 1999 census.

3.7 Data Collection, Analysis and Ethical Issues

This sub-section discusses data collection for field procedures, how participants were identified, ethical issues, qualitative data collection methods and quantitative data collection methods.

3.7.1 Field Procedures

Data collection tools were shared with supervisors and other experts who made useful inputs. The tools were pre-tested in one of the villages in Nairobi that did not participate in the study. An interview manual was developed to train data collectors, pre-test survey tools and guide fieldwork. A list of numbers and enumeration area names and maps adopted from DHS clusters formed part of the fieldwork guide. The household listing took about three months while interviews took two months to complete.

Seven research assistants and one field supervisor were hired to support data collection in the community. All seven research assistants had experience working in the environment where the study was carried out. All research staff including data entry clerks attended a three-day training session. During the training, participants discussed data collection tools, definition of terms and ethical issues. They also practised interviews among themselves using the tools. Following the training session, the tools were edited and subsequently pre-tested among a group of adolescents and parents. Six female and six male adolescents were interviewed using the individual respondent pre-test questionnaire. One session with eight female adolescents was used to test the FGD tool. In addition, three male and three female parents were interviewed using the IDI guide for parental interviews.

During data collection, research assistants were divided into three teams of two people each (male and female). Before questionnaires left the field, they were checked for completeness and accuracy of information. Questionnaires were handed to the principal researcher for safe custody and assigning of numbers. Questionnaires whose respondents were sexually active were marked in green to make it easy to identify participants for FDGs. A researcher experienced in fieldwork who also attended pre-training was engaged to support field supervision of data collection to ensure completeness of questionnaires and adherence to the guidelines established during training and those contained in the interviewer's manual. The results of data collection among adolescents and IDIs for parents are indicated in Table 3.1 and Appendix 3.3.

3.7.2 Identifiers

The respondent identifier was through questionnaire number, enumeration cluster serial number and household code.

3.7.3 Ethical Issues

Respondents in the study were reassured that information collected was confidential and would only be used for the survey. Considering that the study was collecting information on sexuality, the interviewers were trained to conduct themselves professionally and not to discuss any information given by respondents with anyone including the team members, unless requested by the field supervisor for follow-up purposes. To ensure privacy, interviews were conducted away from other people. The respondents were reassured that information collected would remain confidential and no individual names would be used for any purpose and that all information would be pooled for the report. The interviewers were cautioned not to mention other interviews

or show completed questionnaires to other interviewers or supervisors in front of a respondent or any other person.

Before conducting the FGD and IDI, the study was explained to participants and they were reassured about confidentiality in terms of their names and information given. Permission was sought for use of voice recording and taking photographs. In groups that were not willing to have their photographs taken, this was respected. Consent was signed by each participant. The first two groups declined to have their photographs taken and the researcher dropped the idea of using photographs to verify the process. Married male adolescents declined to signed consent, but agreed to verbal consent to participate in the discussions. The researcher did not join FGDs for the adolescents but engaged two younger assistants, one male and one female. The research assistants were experienced in qualitative data collection in the same environment. During FGDs with males, the female took notes and the male acted as moderator. This made participants more free to give information. Although the researcher did not join adolescents' discussions, she joined parents because they could identify with her.

During quantitative data collection, the respondent participated as a volunteer and had a legal right to refuse to be interviewed. The study team explained to respondent how the study information would be used. The interviewer sought permission from the respondent and ensured consent to participate was signed (Appendix 3. 4 and 3.11). The respondent was reassured that he or she had the right to terminate the session or to refrain from answering parts of the questions. When a respondent declined to be interviewed, this was noted and the questionnaire if already started was saved with all the identification details. Groups that declined to sign but gave

verbal consent were allowed to participate without discrimination. Participants were allowed to determine the most convenient time for them and follow-ups for the agreed time were made by telephone. Where an unmarried adolescent was below 18 years of age, permission to participate in the study was sought from the parent or guardian.

3.7.4 Qualitative Data Collection Methods

Qualitative methods were used to elicit information on suggestions and opinions, perceptions and barriers to contraceptive use among adolescents. To complement quantitative data collection methods, the study integrated FGDs for adolescents and parents and IDIs for parents and teachers. IDIs among parents and school teachers and FGDs were used to answer study objective 2, that is, establishing the nature of discussions on sexuality and contraceptive use held in schools by family members and messages passed during these discussions. Qualitative methods provided an opportunity to uncover unexpected results or unforeseen contextual factors. The analysis of qualitative method benefited from perceptions drawn from personal experiences and firsthand observations in vividness, density of information and clarity of meaning.

3.7.4.1 In-depth Interviews

One of the objectives of this study was to document information on sexuality issues discussed in schools and among family members. Conducting IDIs among parents and teachers was therefore done to generate information that contributes to better understanding of sexuality issues and content discussed in schools and among family members, and existing perceptions on contraceptive use.

Procedure

IDIs were carried out among a group of teachers and parents selected from participating enumeration areas. Forty two teachers from 30 schools in Nairobi mentioned by most adolescents during listing of households were interviewed. The schools were linked to the clusters sampled for the study. Teachers identified for IDIs included school administrators, teachers allocated counselling duties and any other person identified by the administration to carry out counselling of students. Where the head teacher was also the school counsellor, only one teacher was interviewed in that school. Discussions were tape recorded and later transcribed. Transcripts were used to code and develop memos and concepts. Before discussions, the study team visited schools and made appointments with the school administration. During the discussions, participants were informed about the study. The team also sought participants' consent to record the interviews and permission to proceed with discussions.

In one school, a counselling teacher was interviewed but the head teacher terminated participation of the school because the interviews were recorded. As a result, this school was replaced with another. The recording was retained but not transcribed. During discussions, three schools confessed they did not have trained counsellors, although they indicated so because they thought the research team was inspectors from the Ministry of Education. Three of the schools mentioned by out-of-school respondents no longer existed while two were primary schools and the five schools were replaced. At the end of the interviews, five secondary schools requested the team to facilitate sexuality education for the students. Although no promises were made at the time, the researcher contacted and passed the names of the schools to reproductive health partners implementing programmes in schools. Many schools requested feedback from the

survey. The researcher promised to send invitations to the dissemination workshop to schools that participated in the study.

The research team also interviewed 137 parents of adolescent respondents. Parents were identified from individual questionnaires and although a skip pattern of households was developed it was not followed because few parents were willing to be interviewed. Four parents were interviewed from each enumeration area with the most being 73 from Embakasi which had the highest number of households with adolescents. Out of 137 parents only 29 male parents agreed to be interviewed. Parents were interviewed during the same period individual respondent questionnaires were administered. Where father and mother were available in the household, they were interviewed separately. The parent interview guide was used to identify parents with in and out-of-school adolescents. Parent interviews were carried out by research assistants who were also administering individual questionnaires. Where the assistant found a parent at home who was willing to be interviewed, the assistant made an appointment with the participant to conduct the IDI later. The research assistant accompanied with a colleague conducted parents' IDIs. One of the interviewers was the moderator while the colleagues took notes and recorded them on the questionnaire guide. The notes were later transcribed and transcripts used for coding. Before starting the interview, the parent was informed about the study. Signed consent was requested to proceed with the interview. The consent was integrated in the interview guide.

The interview guide for parents identified the number of the respondent, the cluster name and serial number and household code. All the relevant identification information was completed for any follow-up (Appendix 3. 5). The teacher and parent respondents did not write their names on

the questionnaire but the interviewee signed the guide. The teacher's interview guide bore identification information and position held in school (Appendix 3. 6).

Discussions with the parents was on sexuality information passed at home, the person who passes the information, how the information was introduced and passed to the adolescents and what sexuality messages were passed during the discussions. Parents also made recommendations on who should be responsible for discussing sexuality issues (parents or teachers) and their reasons for the recommendations.

The discussion with the teachers was on what they thought were the reproductive health needs of the students, the existence and adequacy of sexual and reproductive health policies targeted to adolescents, adequacy of information on growth and development, what topics needed to be included in the school curriculum, what could be done to make schools more responsive to sexuality issues, reproductive health services students should be entitled to, existing youth counselling in school or school where the teacher had been involved, individual experiences in counselling, counselling training that teachers had received, recommendations in relation to sexuality education in schools and opinions on who was best suited to conduct sexuality education in schools.

3.7.4.2 Focus Group Discussions

FGDs were used to generate group perspective rather than individual experiences. In FGDs, participants discussed what was happening in the community without disclosing that they were talking about themselves and this helped the researcher understand the issues. FGDs promoted self-disclosure. One reason for using FGDs is that participants of the group perceive they are

alike in some way. Participants of FGDs tend to disclose more about themselves to people who resemble them in various ways (Krueger and Casey, 2000).

Procedure

FGDs among adolescents were used to clarify perceptions on contraceptives among young people and messages on sexuality issues discussed among family members and in school.

FGDs were conducted with adolescents who were identified as sexually active and parents willing to participate. The team conducted FGDs to enhance understanding of sexuality issues discussed at home and in schools and of perceptions on contraceptive use by adolescents and their parents. FGDs were also used to collect information on recommendations by the target groups on how to improve sexuality information for adolescents at home and in schools. Information from sexually active adolescents participating in FGDs was used to clarify why they did not use contraceptives. Adolescents in the FGDs provided information on the content of sexuality discussions in school and their preferred source of information.

Selected married and unmarried adolescents participated in FGDs. Discussions were conducted with groups of 6-9 adolescents and took about 45 minutes. Participants were reassured that their names would not be disclosed to third parties beyond the interviews. Eight FGDs were carried out as follows: a) one female and one male for sexually active unmarried in school (Appendix 3.7); b) one female and one male for unmarried out-of-school, sexually active (Appendix 3.8); c) one male and one female for married out-of-school (Appendix 3.9); and d) one male and one female for parents of adolescents (Appendix 3.10).

The FGD guide followed a sequence of provisional themes that captured young people's views on sexuality education and sexual and reproductive health services. FDGs with parents elicited information on discussions with children on sexual matters, information passed on by their own family members, parents' feelings if their teenage children used contraceptives and recommendations on how to improve sexuality discussions at home. Parents gave information on who, between parents and school, they felt should provide sexuality information.

The environment for the FGDs was friendly, clean and away from excessive noise. The discussions were held in community halls that were booked before the meetings. Respondents for FGDs sat in a semi-circle to facilitate discussion. All respondents, the moderator and the note taker were visible to each other. The note taker sat on the side of the moderator. Participants' names helped the moderator address respondents by name. Respondents were requested not to change their sitting position during the discussions to prevent confusion during recording. The note taker gave each participant a name and a code. This made it easy for the note taker to record each response. The note taker used an FGD guide to direct the discussion and to capture responses to each guiding question. The summaries were written immediately after conducting the FGD to enhance clarity of notes taken. The summaries of FGDs were written before leaving the field and before conducting another session. The group summary contained responses to each group of questions. Summaries were written such that statements were not changed. Rather, they were used to harmonize responses from each respondent. Joint summaries helped to fill in gaps from the discussions. They also helped the team rewrite complete responses in a more intelligible way. All summaries, note books and voice records used for each FGD session were submitted to the researcher. The voice recording was saved in a computer file and on CDs.

Discussion notes were also transcribed and typed. Transcripts were used to code, write memos and draw concepts.

3.7.4.3 Analysis Strategies for the Qualitative Information

Qualitative information was used to clarify perceptions and values attached to contraceptive use. Data analysis was achieved through immersion in the data (Burnard, 1991), by reading the transcribed texts repeatedly to identify emerging themes and developing memos based on issues arising from transcripts. Data analysis involved examining the thematic content of the memos, using Atlas Ti coding strategy and the continual investigation of the themes for categories, linkages and properties. To illustrate responses, we used verbatim quotations.

Each transcript was organized by type of FGD and IDI groups and then each response was organized according to each question, relevant comments and quotes. Responses were from student females and males and from out-of-school married and unmarried adolescent females and males, male parents, female parents and teachers allocated counselling duties. The transcripts of the FGD and IDI responses were made from discussion notes and audiotapes. Using the long-table method, the Atlas Ti Package was used to facilitate coding, categorizing and determining themes. Results were used to interpret concepts.

3.7.4.4 Response Rates for Qualitative Data Collection

A total of 15 in-school and 13 out-of-school adolescents attended FGDs. Married adolescents were 15 while parents were 12. In addition, 137 parents and 42 teachers participated in IDIs (Table 3.2).

Table 3.2: Results of qualitative data collection

Data collection method		Number of sessions	Number of participants
IDIs			
	IDIs teachers	30 schools	42
	IDIs parents	137*	137
FGDs			
	Female unmarried in school	1	8
	Female unmarried out-of-school	1	7
	Male unmarried in-school males	1	7
	Males unmarried out-of-school	1	6
	Male married out-of-school	1	9
	Female married out-of-school	1	6
	Female parents of adolescents	1	6
	Male parents of adolescents	1	6
Total		175	234

* Parents who participated in IDIs were parents of adolescents who were interviewed. Adolescents in FGDs were those identified as sexually active.

3.7.5 Quantitative Data Collection Method

Structured interviews

Quantitative data were collected using structured interviews. Collecting large volumes of data required structuring the questions to collect data that was easily grouped for analysis. The study sought information on sources of reproductive and sexual health information, socio-economic factors, demographic factors, motivators and barriers to contraceptive use and continuing use and factors that lead to discontinuing use. The interviews were used to collect data to answer objectives 1 and 3 of the study, that is, to establish and document perceptions that influence contraceptive use among adolescents 15-19 years and barriers affecting the use of contraception among adolescents.

Procedure

Data collection took place during school holidays to ensure in-school adolescents participate. Using DHS clusters, the survey listed all households with adolescents 15-19 years old. Data collection focused on the eight divisions in Nairobi: Central, Dagoretti, Embakasi, Kasarani, Kibera, Makadara, Pumwani and Westlands. After picking the random number, the house code bearing the numerical number on the list was noted and subsequent households with adolescent 15-19 years were interviewed until the required number of adolescents was reached. Where the household had more than one adolescent, only one by each gender and marital status was interviewed.

Response Rates

A total of 6,179 households with adolescents were selected. Respondents not at home were 15 (1.3 percent) and 1 household was absent. In the sample, the study was supposed to cover a

maximum of 1,200 and a minimum of 1,063 adolescents, but managed to interview 1,159 out of which 1,119 completed the questionnaires successfully (96.5 percent success rate). From the adolescents interviewed, 519 (46.2 percent) were males and 600 (53.8 percent) females. Four cases did not indicate their gender and therefore were removed from the analysis.

3.7.6 Data Cleaning and Quality

After the fieldwork, the questionnaires were handed over to data processing team that consisted of the researcher, one data entry clerk and one statistician assistant. The data processing team started data entry by coding open-ended questions using the Census and Survey Program (cspro). Double entry was used to identify and eliminate data entry errors. Out of the 50 percent questionnaires entered, only 10 questionnaires had errors of coding entry. Data were then exported to Statistical Package for the Social Sciences (SPSS) Version 17 number for analysis.

3.7.7 Variables

This section provides an overview of the variables used in data analysis. Variables described here are those reflected in the conceptual framework and in the structured questionnaire (Appendix 3. 4). In addition, the section provides a summary of dependent, intermediate and proximate intervening variables and how they were operationalized in the study.

3.7.7.1 Dependent Variables

In this study, ever use of contraceptive was the dependent variable. A set of questions were asked in relation to the history of contraceptive use, when the respondent started to use contraceptives, consistency, which partner used the contraceptive, methods used and length used. Those who were not currently using contraceptives were asked if they had any intention to use in

the future. Respondents who used a condom were asked about the type (female or male condom) and also whether the condom was used for prevention of HIV infection or pregnancy (Appendix 3.4).

3.7.7.2 Intermediate Factors

Knowledge and service environment were the intermediate variables hypothesized to influence contraceptive use.

3.7.7.2.1 Knowledge Variables

Knowledge included awareness and knowledge of how to use contraceptives, source, knowledge of sexuality issues and knowledge of risks of unprotected sex. Respondents were therefore asked whether they had ever heard about contraceptives; how a pregnancy could be prevented; and types of methods of contraceptives they knew. Computation was carried out using a combination of different types of modern family planning methods listed in the KDHS, namely the pill, intra-uterine device (IUD), injectable, condom, female sterilization and implants. Knowledge of contraceptives was scored into no knowledge, knew 1-2 methods and knew 3 and more methods.

Respondents who knew a method of contraceptive were questioned further to assess knowledge on how condoms and other contraceptives work to prevent pregnancy and HIV/AIDS. Responses were given a score of 3 as high, 2 moderate and less than 2 as low.

Knowledge of the risk of unprotected sex is influenced by awareness of the outcomes. Respondents who indicated that they knew how to use a contraceptive were asked to answer five

multiple choice questions to indicate whether several statements on when it would be risky to get pregnant were true or false based on rumours and misconceptions. Responses were rated high for those who gave correct responses to 4 questions and above, moderate for 2-3 correct responses, low for less than 2 correct responses and no knowledge for those who did not give any correct response. Respondents were also asked whether they were aware of where they would get contraceptives if they wanted to use them (Appendix 3.4).

3.7.7.2.2 Service Provision Environment Variables

The environment within which services are provided influences contraceptive use and continuing use. Administrative processes at the service provider also limit access.

The service environment was assessed to determine quality of services by: clinic open hours, waiting time, ability to obtain services, cost of services, privacy and contraceptive counselling. Eleven items were listed to assess the characteristics of service environment from the perspectives of the respondent (Appendix 3.4).

3.7.7.3 Proximate Intervening Factors

Contraceptive use is determined by whether adolescents have positive perceptions and physical barriers are overcome. This section focuses on perceptions and barriers that influence contraceptive use.

3.7.7.3.1 Perception Variables

Perception affects behaviour in terms of contraceptive use from within the individual. Perceptions found to influence contraceptive use include: fear of parents and guardians, fear of

ridicule from peers, sexual partner communication and ability to get contraceptives for self. All the respondents were asked whether their parents would approve of their using contraceptives, their opinion on unmarried women using contraceptives for pregnancy prevention and whether they could get a contraceptive if they wanted to. Adolescents who had ever had sex were asked whether they had ever discussed contraceptives with their partner.

3.7.7.3.2 Barrier Variables

Barriers to contraceptive use arise from factors external to the person. Even when perception to contraceptive is positive, physical barriers could affect use. Contraceptive barriers were assessed by knowledge of supply source, clinic open hours, availability of commodities, financial costs/commodity affordability, physical distance, protocols and privacy at the clinic. Respondents were asked whether they knew the source and what would motivate them to collect contraceptives from the source. Respondents were also asked if they would know where to get a contraceptive on the day they wanted to use it. Respondents who knew the source and were current users were asked to give the specific name. They selected from a list of clinic characteristics the reasons that would make them collect contraceptives from the selected source. Those who were not currently using contraceptives were asked what would make them not use contraceptives if they wanted to. To assess the common source of contraceptives, respondents who had used contraceptives were asked to give their last source and those who had used contraceptives before and had stopped by the time of the study were asked why they stopped.

3.7.7.4 Control/Background Factors

The following control factors were used in the study. Background factors included socio-cultural environment, demographic and socio-economic factors. Intermediate factors that included knowledge and service provision were used to compare effects of perception and barriers of contraceptive use. Socio-cultural environment variables included family living arrangement (living with parent, living with relative, living alone and living with a friend). Socio-economic variables included source of income, family wealth and place of residence, school attendance, source of sexuality information and place of residence. Socio-economic status was determined by house amenities the family owned. Demographic behaviour variables were age, sex and marital status while service provision environmental variables were clinic open hours, waiting time, ability to obtain services, cost of services, confidential/privacy of services and contraceptive counselling.

3.7.7.4.1 Socio-Cultural Environment

Values that influence sexuality behaviour are gained through the socialization process. The first socialization environment is the family, followed by the school and then the wider community. Respondents were asked questions related to their living arrangements. To determine sexuality information passed in different socialization environments, respondents were asked to indicate their most important sources of sexuality information, whether they were currently attending school, and their place of residence.

3.7.7.4.2 Socio-Economic Variables

Socio-economic status influences contraceptive use through lack of resources to purchase commodities, travel cost and cost of information materials that create awareness of

contraceptives. To assess the level of family wealth, respondents were asked to describe quality of the house, household utilities and materials used in their house construction and whether they lived in the house they were interviewed in, their sources of energy for cooking, ownership of transport means and household items. Items from each section of the question were dichotomized into three and then analysed to generate wealth quintiles categorized as high, middle and low socio-economic status (Appendix 4).

3.7.7.4.3 Demographic Variables

This section focuses on demographic factors that influence contraceptive use. The factors discussed here are age, sex and marital status.

3.7.7.4.3.1 Age and Sex

Where age at first sex is low and information on sexuality and pregnancy prevention limited, young people are likely to enter sexual relationships without understanding the outcomes (Ryan et al., 2007). Contraceptive use also increases with age (Meekers and Klein, 2002). In addition, studies show that males disapproved use of contraceptives for fear of losing control over their girlfriends (Oni et al., 2005). Respondents were asked to state their age and sex. At the time of the study, adolescents who were 15-19 years were born between first July 1990 and 30th June 1990 (Appendix3.4).

3.7.7.4.3.2 Marital Status

Marriage for many girls is the beginning of frequent and unprotected sex. In general, half of unprotected sex happens in marriage (Haberland et al., 2005). Married girls may have lower mobility, networks and exposure to sexuality information than unmarried girls (Alauddin, 1999). Respondents were therefore asked about their marital status. Responses were organized as never married, married, living together, divorced/separated and widowed.

3.7.8 Analytical Methods

This section discusses the statistical methods used in this study. Analytical methods included descriptive and multivariate logistic regression models. Most of the data analysed were categorical and continuous with associations between dependent, background, intermediate and proximate intervening variables.

3.7.8.1 Descriptive Analysis

Descriptive analysis was used to compute frequencies, recoding of variables, running of cross tabulation and Chi-square test.

3.7.8.1.1 Frequencies and recoding of variables

Basic descriptive statistics including frequencies were computed to assess the quality of the data and to assist with recoding of categorical variables or grouping variables. Frequencies helped identify missing cases and cases that were too few. Recoded variables included: living arrangement categorized into living with parents, living with spouse and living elsewhere; source of sexuality information categorized into parent, teacher and other sources; socio-economic status categorized into three (low, medium and high); knowledge of contraceptive methods categorized as those with no knowledge of any type of modern contraceptive methods, those who knew 1-2 methods and those whose knew 3 and more methods; knowledge of how a pregnancy could be prevented was categorized into yes for those who mentioned abstaining and contraceptive use and no for those who did not know; knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS categorized into low knowledge, moderate and high knowledge; risks to unprotected sex was categorized into low, moderate and high knowledge;

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knowledge of source of contraceptives was categorized into yes for those with knowledge and no for those without knowledge or not sure; marital status categorized into ever married and never married; contraceptive users categorized into ever use and never use; and opinion of unmarried adolescents on contraceptive use categorized into approval and disapproval. After running frequencies and recoding, bivariate analysis was carried out.

3.7.8.1.2 Bivariate Analysis

The bivariate analyses conducted were cross tabulation and Chi-square test.

3.7.8.1.2.1 Cross Tabulation

Cross tabulation was used to test association of contraceptive use and control variables. Cross tabulation therefore helped identify and assess disparities of contraceptive use and overall outcomes of the association through Chi-square test.

3.7.8.1.2.2 Chi-square Test

The Chi-square test was used to show overall significant level of the model although it could not show how much each variable contributed to the association. After cross tabulation, variables with no missing values or less than five cases were identified and subjected to Pearson Chi-square test. Variables that showed significant association to contraceptive use included: age, sex, marital status and socio-cultural factors (living arrangement, school attendance, division living in and source of sexuality information). Intervening factors found to be associated with contraceptive use were knowledge, perception and barrier factors. However, socio-economic factors, free services and privacy of services were not found to be significant.

Knowledge factors found to be significant were: knowledge of how a pregnancy can be prevented, knowledge of how to use contraceptive methods, knowledge of how contraceptives prevent a pregnancy and HIV/AIDS, knowledge of risks to unprotected sex and knowledge of source of contraceptive commodities.

Perception factors found to be significant were approval of parents or guardian and opinion of adolescents on unmarried youth to use contraceptives, if respondent can access contraceptives and discussion with sexual partner on contraceptives. Barrier factors found to be associated with contraceptive use were: ability to get contraceptive if respondent wanted to, if methods were available all the time, physical distance, services given within reasonable time and if clinic protocols were friendly.

3.7.8.2 Multivariate Logistic Regression Analysis

Multivariate logistic regression was used to estimate odds ratio for each of the independent variables in the model and the combined effects of the explanatory variables in predicting contraceptive use since the dependent variable was categorical. The multivariate logistic regression model gives the probability of an event that depends on p covariates or independent variables. In this study, the dependent variable is ever use of contraceptive with code 1 or 0 for never use. The formulation for modelling the probability is expressed as:

$$E(P)=\frac{e^{B_0+B_1x_1+B_2x_2+B_kx_k}}{1+e^{B_0+B_1x_1+B_2x_2+B_kx_k}}$$

Where: P is the probability of ever use of contraceptive

B_1's are the coefficients

B_o is the intercept.

B_o sets the "baseline" event rate when all covariates values are set equal to zero. A unit changes in B gives the change in the expected probabilities. The aim of this approach is to get that estimate which maximizes the probability of the occurrence of the event. The coefficient B_1 is such that $_e{}^{B_1}$ is the odds ratio for a unit change in X. In this study, it tells us by how much contraceptive use changes from one category to the other of the independent variables. The estimates were obtained through maximum likelihood approach using SPSS. To test for the overall significance, the Chi-square test was used. In this test, a comparison was made between deviances of the model without any variable, the saturated model, with one containing all variables. In the saturated model the deviance is large, but when variables are incorporated, this is reduced and the x^2 tells us whether that reduction is significant. The significance of individual variables was assessed using the normal distribution statistics given below at 95 percent confidence level.

$$B_1 = \frac{B_i^n}{S.E(B_i)} \quad \text{(Normal distribution curve)}$$

To conduct the regression analysis, several models were estimated as follows:

(i) Model 1 which included background variables and dependent variables

(ii) Model 2 which included perception variables with dependent variables

(iii) Model 3 which included barrier variables and dependent variables

(iv) Model 4 which included background variables with perception variables

(v) Model 5 which included background variables with barrier variables

(vi) Model 6 which included all the variables in the conceptual framework

The above models were used to establish whether or not the intervening variables mediate the effects of the background variables on the use of contraception as implied by the conceptual

framework. The results of all variables when analysed together indicated clearly the variables with net significant effects on contraceptive use. The variables with significant effects were used to develop a final model of perceptions and barriers to contraceptive use among adolescents 15-19 years.

CHAPTER FOUR

CHARACTERISTICS OF THE STUDY POPULATION

4.1 Introduction

This chapter presents and discusses the characteristics of the study population. The presentation is based on the conceptual framework and the study objectives. The results are based on data drawn from the quantitative component of the study. The component covered 1,119 adolescents aged 15-19 years. The chapter is organized in four sections. The first section presents characteristics based on the background component of the conceptual framework. The second section covers the characteristics based on the intervening variables component that come between background variables and dependent variables as specified in the framework. The third section is on the discussion on the contraceptive behaviour of the study population. The last and final section is a summary and conclusion that highlights the major findings in the chapter. The results are presented in Table 4.1. Due to the small number of cases of adolescents who answered the survey questions on the family planning service environment, the characteristics of the study population based on this component of the framework is not presented in this chapter. However, qualitative information has been used to highlight the situation regarding the service component. Names of respondents in qualitative data are changed for confidentiality.

4.2 Background Characteristics

The variables discussed in this section include the basic demographic characteristics of the study population, its socio-cultural environment and socio-economic status. In addition, the section discusses the main sources of sexuality information.

4.2.1 Basic Demographic Characteristics

Adolescents' characteristics discussed here are age, sex and marital status. Table 4.1 shows that 1,119 adolescents were fairly evenly distributed by age with the least being 19 years old. Both mean and median ages were 17 years. Table 4.1 shows 46 percent of the study population were males and 54 percent were females. Males are critical partners in sexuality behaviour and including males in the study population provided an opportunity to understand and compare perceptions of both males and females towards contraceptive use.

Table 4.1 shows that only 1.7 percent of adolescents were married. This is expected because adolescents aged 15-19 years are usually in school. The presence of married adolescents provided an opportunity to compare and understand the differences, if any, in contraceptive behaviour between married and never married adolescents. According to Alauddin (1999), unmarried adolescents were more likely to use contraceptives than married adolescents because they were more mobile, helping them access modern contraceptives more than their married counterparts.

4.2.2 Social-Cultural Environment

The socio-cultural factors presented and discussed here are living arrangements, school attendance, community/division of residence and the most important source of sexuality information.

Table 4.1 shows that majority of adolescents live with their parents. This finding was expected as many adolescents between 15-19 years are usually in school and are also more likely to be dependent on their parents. However, living with parents has implications on sexuality

behaviour. If the parents disapprove of unmarried youth using contraceptives, adolescents will be unlikely to use contraceptives due to fear of their parents. For example, in Bolivia, adolescents did not seek contraceptive services for fear of being labelled sexually active and thereby risking being punished by family members (de Belmonte et al., 2000).

Table 4.1 shows that most adolescents were in school. School is the second socialization institution and therefore expected to provide sexuality information. It is therefore not surprising that the most important source of sexuality information was the teacher (Table 4.1). The school was also one of the sources of information for pregnancy and HIV prevention (Hulton et al., 2000). However, if teachers do not have adequate information, this may affect the accuracy of sexuality messages given to the students and therefore negatively influence contraceptive use. For example, Brown et al. (2001) found sex education in schools to be inadequate; teachers focussed on discouraging students without indicating dangers or teaching safe sex behaviour. Adolescents are also exposed to peer influence in school and if peers have inaccurate sexuality information, this results in misconceptions and negative perceptions on contraceptives. For example, in Uganda peer influence in high schools affects adolescent sexuality activities (Twa-Twa, 1997).

Table 4.1 shows the characteristics of school attendance. The presence of both in-school and out-of-school respondents provides an opportunity to compare contraceptive behaviour between the two groups.

4.2.3 Socio-economic Characteristics

This sub-section discusses divisions where respondents lived and socio-economic status. When compared among communities or by divisions, most adolescents lived in Embakasi. In Nairobi communities live in different socio-economic categories. Table 4.1 shows that most of the adolescents in the study fell into the medium socio-economic category. Adolescents in high socio-economic category were more likely to use contraceptives because they can afford commodities and materials that enhance information. However, if family planning programmes were operational in low socio-economic areas, this would reduce the costs of contraceptives by making services more accessible to the community. Easterline (1985) believes that reducing cost of travel lowers costs by increasing information and providing services at below cost.

4.3 Characteristics Based on Intervening Variables

This section examines the intervening variables indicated in the conceptual framework. The intervening variables discussed are knowledge, perception and barriers.

4.3.1 Contraceptive Knowledge

Most adolescents are aware of ways to prevent a pregnancy and named one to two contraceptive methods. Awareness is a prerequisite for using a contraceptive method although it does not always result in the expected behaviour. However, although awareness is high, 54.0 percent of adolescents did not know how to use a contraceptive. Typically, young people use condoms and pills that do not require a prescription. However, although condoms and pills are more available over the counter, chemists and shop keepers may not explain to clients how these methods work. For example, in Nigeria, although young people used drug stores which were seen to be discrete,

the dealers provided minimal or no information on the exact nature of known effects or benefits of the contraceptives (Otoide et al., 2001). Knowledge of how to use contraceptives enhances compliance and continuity of use. In addition, an individual must also understand the association of a behaviour outcome and believe that he or she is capable of implementing the chosen strategy. Only 27.3 percent of adolescents were knowledgeable about how contraceptives work in the prevention of pregnancy and HIV/AIDS. Although over 90 percent of adolescents knew how a pregnancy can be prevented, majority (54 percent) were not able to indicate when it would be risky to get pregnant or contract HIV. When adolescents do not know that only condoms prevent both pregnancy and HIV, they risk contracting STIs, especially if they have sex with multiple partners. Adolescents engage in risky sexual behaviour because they lack sufficient knowledge.

Table 4.1 shows that most adolescents knew a place where they could get a contraceptive method. If adolescents know where they can get a contraceptive, they are likely to get one when they need to and hence continue use.

4.3.2 Perceptions on Contraceptive use

Overall, perceptions on contraceptive use among adolescents were negative. About 74.9 percent of parents or guardians would object to contraceptives use by unmarried adolescents and 67.6 percent of the adolescents disapproved of contraceptive use by unmarried adolescents. Table 4.1 shows only a small number of adolescents ever used contraceptives. When adolescents are aware that society disproves of contraceptive use by unmarried adolescents, they are unlikely to seek contraceptive services for fear of ridicule by their parents, peers and significant others in the

community. Adolescents also lacked the confidence to negotiate for safe sex in environments where it is taboo to have premarital sex and use of contraceptives by unmarried adolescents is disapproved. For example, adolescents in Bolivia were ashamed of getting contraceptive services because of fear of their parents (de Belmonte et al., 2000).

Results from this study show that most adolescents could not get contraceptives if they wanted to. This finding has negative implications for contraceptive use. If adolescents cannot get contraceptives for themselves, access will be limited as they will probably rely on their trusted friends for services or risk engaging in unprotected sex. Table 4.1 shows that few adolescents communicated with their sexual partners on contraceptive use. When sexual partners support each other on contraception, they are more likely to continue use than when the decision is left to one person. In Pakistan, Alauddin (1999) reported an association between contraceptive use and partner communication. Whitley and Schofield (1986) also report that young women's contraceptive use was influenced by the sexual partner.

4.3.3 Barriers to Contraceptive Use

This section focuses on barriers that influence contraceptive use. Barriers discussed in this section include knowledge of contraceptive supply source, availability of methods, financial cost, physical distance and privacy of services. Table 4.1 shows that most adolescents knew the source of contraceptives if they wanted to use them. When adolescents know where to get contraceptives when they need them, they are likely to continue use. In Pakistan, adolescents who knew where to get contraceptives were more likely to use them in future (Casterline et al., 2001).

However, few adolescents would be motivated to collect commodities from a health facility. Table 4.1 shows that over 90 percent of adolescents would not use contraceptives even if contraceptives were available and free, clinic open hours were convenient, service was given within reasonable time and privacy was guaranteed. Table 4.1 also shows that 74.4 percent of adolescents would not be motivated to seek contraceptives even if the source were near enough. This finding has negative implications for service utilization. If adolescents do not seem to value the presence or absence of common service barriers, it would imply that few are motivated to use contraceptives and that factors other than physical barriers are more important to them. This is not surprising because only a small number of adolescents visited health facilities to seek contraceptive services. However, Prince and Hawkins (2007) indicate barriers to contraceptive use among adolescents include medical barriers, time, distance to the clinic and cost of travel. For adolescents to use contraceptives, services must be youth-friendly. According to Family Health International (1993, 2011), youth-friendly services ensure that providers are trained in youth reproductive health issues and communication; they are respectful and non-judgmental; services are provided in a non-threatening environment and within convenient hours and in convenient locations; fees are affordable; there is community support; and youth participate in providing services. According to the Kenya Service Provision Assessment, only 7 percent of the facilities in the country are youth-friendly (NCAPD et al., 2011).

4.4 Contraceptive Use Status

Ever use of contraceptive is the dependent variable in this study. Table 4.1 shows that most adolescents do not use contraceptives. Only 8.6 percent of all adolescents had ever used a contraceptive method. This finding is not surprising. Adolescents seldom use contraceptives and

only 4.9 of adolescents in Kenya used contraceptives in 2008-2009 (KNBS et al., 2010). Alauddin (1999) also reports less than 10 percent contraceptive use among adolescents 15-19 years in various countries in sub-Sahara Africa and Latin America. When sexually active adolescents do not use contraceptives, they are likely to give birth to more children during their reproductive life than those who start childbearing later in life. In addition, low contraceptive use exposes adolescents to a higher level of pregnancy related complications.

Table 4.1: Percentage distribution of the study population according to study variables: Nairobi, Kenya, 2010 (N=1119)

Characteristics	Percent
Background characteristics	
Age	
15	21.7
16	21.8
17	24.0
18	21.0
19	11.4
Sex	
Male	46.4
Female	53.6
Marital status	
Never married	98.3
Ever married	1.7
Socio-cultural environment factors	
Living arrangement	
With parents	75.9
With spouse	1.3
Elsewhere	22.1
Not stated	0.7
Attending school	
In school	86.6
Out of school	11.5
No information	1.9
Most important source of sexuality information	
Teacher	67.1
Parent	15.3
Other sources	17.6
Place of residence	
Central	5.5
Dagoretti	4.3
Embakasi	64
Kasarani	1.2
Kibera	6.9
Makadara	4
Pumwani	2.7

Source: Primary analysis of the data.

Table 4.1: Continued

Characteristics	percent
Socio-economic status	
High	27.1
Medium	62.1
Low	10.8
Key intervening factors	
Knowledge	
Ever heard of ways to prevent a pregnancy	
Yes	86.6
No	11.5
Not stated	1.9
How a pregnancy can be prevented	
Yes	91.3
No	8.1
Not stated	0.5
Contraceptive knowledge	
No knowledge	22
Knew 1-2 methods	74.7
Knew 3 and more methods	3.3
Knows how to use a contraceptive	
Yes	43.8
No	54
Not stated	2.2
Knowledge on how contraceptives work in prevention of pregnancy and HIV/AIDS	
High knowledge	27.3
Moderate	12.4
Low	6.3
Not stated	54.0
Knowledge of risks to unprotected sex	
High	1.7
Moderate	26.0
Low	18.3
No knowledge	54.0

Table 4.1: Continued

Characteristics	Percent
Knowledge of source of contraceptives	
Yes	45.7
No	54.3
Perceptions	
Parent guardian would approve contraceptives for unmarried youth	
Would object	65.1
Would not object	21.2
Other response	13.8
Opinion of unmarried youth to use contraceptives	
Approve	23.8
Disapprove	74.9
Not stated	1.3
Can get contraceptives for self if wanted	
Yes	39.4
No	55.0
Not stated	5.6
Partner communication about contraceptives*	
Communicates with partner	7.1
Never communicates	5.8
Not stated	87.1

Note: (*) Only adolescents who had ever had sex and who had discussed sexuality issues at home were asked if they ever discussed contraceptive use with their sexual partners.

Table 4.1: Continued

Characteristics	Percent
Barriers	
If wanted to use contraceptives today would know source	
Yes	60.1
No	39.9
Methods available all the time would motivate	
No	91
Yes	9
Clinic open hours convenient would motivate	
No	99.4
Yes	0.6
Services within reasonable time would motivate	
No	98.6
Yes	1.4
Free services would motivate	
No	95.5
Yes	4.5
Distance near enough would motivate	
No	74.4
Yes	25.3
Friendly protocols/procedures would motivate	
No	98.6
Yes	1.4
Privacy provided would motivate	
No	87.1
Yes	12.9
Dependent variable	
Contraceptive use	
Never use	91.4
Ever use	8.6

4.5 Service Provision Environment

Due to the limited number of cases, this section uses qualitative findings to support the results. Factors described here are clinic open hours, cost of services, privacy and confidentiality of services, and contraceptive counselling services.

Qualitative information from both males and females highlights negative perceptions adolescents have regarding service provision at health facilities. Narratives from adolescents indicate that clinic open hours should be made more convenient. Some of the respondents indicated 2.00 pm to 7.00 pm to be a good time to access services, especially for out-of-school adolescents while Saturday 1.00 pm to 5.00 pm was the preferred time for married males. Out-of-school females preferred night and weekends as indicated in the quotes below:

> Jane[1]: "At night is better because people are busy and they are not bothered of what is happening" (15-year-old, out-of-school female respondent).
>
> Joseph: "Weekends are good because more people are free then" (19-year-old, married male respondent).
>
> John: "I prefer Saturdays between 1.00 and 5.00pm" (19-year-old, out-of-school male respondent).

For adolescents to seek services, clinic open hours must be convenient for them. According to Gage (1998), physical distance and convenience were found to influence contraceptive use.

Although quantitative data indicated that respondents who went to the health facility received a service, adolescents also used other outlets to obtain services. In the FGDs, adolescents indicated

[1] Names of respondents used in this document have been changed to maintain confidentiality. The fact that some names are similar does not mean they necessarily refer to the same respondent.

reasons for not using contraceptives. According to in-school adolescents, clinics did not provide contraceptives to those below 18 years of age as illustrated in the narratives below:

> Mary: "According to the doctor who taught me…it is not good to use contraceptives before you get two children" (in-school, 17-year-old female respondent).
>
> Julia: "Some hospitals ask for identification cards before you are attended… at my age I do not have a national identification card" (in-school, 18year-old female respondent).
>
> James: "Providers should not discriminate services by age" (17-year-old, in-school male respondent).

Provider bias influences contraceptive use among adolescents. For example, some health providers in Kenya require a client to be married or have at least one child before giving a contraceptive method (Ndhlovu et al., 1997)

The cost of services was indicated as a barrier to contraceptive use. Adolescents also indicated that a packet of pills should not exceed KSh 50 and condoms should not exceed KSh 10 as illustrated below:

> Rita: "Students have no money even 20 shillings and contraceptives should be free" (in-school, 15 years old female respondent).
>
> Maureen: "Contraceptives should be affordable but cost should be 20 to 50 Kenya shillings" (17-year-old, married female respondent).
>
> Juliana: "Condoms should not exceed 10 and pills should not exceed 50 Kenya shillings" (out-of-school 18 years old female respondent).

Cost of services affects contraceptive use. If young people cannot afford contraceptive methods, this will reduce the number of adolescents who seek services from the clinic and contribute to drop-out rates. This is supported by a study in USA where women struggling financially were reported to be inconsistent with contraceptive use (Guttmacher, 2009).

Privacy and confidentiality was an issue and this was mentioned as a reason for not visiting a health facility for services. Adolescents indicated that all services should be given in one room to ensure privacy. Some adolescents indicated that providers should be from outside of the community to avoid parents knowing that they have been using contraceptives as indicated in the quotes below:

> Janet: "Services should be in one room so that no one gets to know what you are seeking" (out-of-school 16-year-old female respondent).
>
> Michel: "No one should be allowed in during consultation and condoms should be packaged to conceal them from the public" (out-of-school, 17-year-old male respondent).
>
> Johannes: "Clinics should also keep condoms where they are accessible to the youth" (out-of-school, 18-year-old male adolescent).

For adolescents to use contraceptives, services must be friendly and confidential. This is supported by a study in Nigeria where adolescents bought contraceptive commodities from pharmacies where they perceived services were more confidential (Otoide et al., 2001).

Contraceptive counselling was a critical motivator for seeking contraceptives from a health facility. Out-of-school adolescents mentioned that providers should be kind and should give information freely and with understanding. Some of the married adolescents indicated that providers should be experienced. In-school adolescents also mentioned that providers should treat them like other human beings and not discriminate against them because of age. The following interview excerpts tell it all:

> Joan: "The provider should be kind and give information freely" (out-of-school, 19-year-old female respondent).

Jerusha: "The provider should give information on advantages and disadvantages of the methods" (17-year-old, married female respondent).

Jeanne: "The provider should be free to discuss and advise without being judgmental. It is not a must that you always get contraceptives when you go to the clinic. The provider should also explain about the pills so that girls can make informed decisions" (16-year-old, in-school female respondent).

Jamlick: "Providers should have diagrams to explain about contraceptives" (in-school, 18-year-old male respondent).

David: "The provider should be non-judgmental and should not conclude that I am young and up to some mischief" (married 18-year-old male respondent).

Staff attitude is a positive characteristic that encourages clients to seek services from a health facility. However, if service providers do not have the skills to make services youth-friendly, this is likely to affect the number of adolescents seeking services from the health facility. In Bolivia, facilities had adequate supplies of contraceptives but they lacked the capacity to provide services to adolescents (de Belmonte et al., 2000).

4.6 Summary and Conclusion

The results of the characteristics of the study population show low use of contraceptives among adolescents 15-19 years. The results suggest that the environment for contraceptive use both in school and at home is not that favourable. Although awareness of contraceptives and how to prevent a pregnancy is high, knowledge on how contraceptives work is low and knowledge of risks of unprotected sex is only moderate. However, adolescents know sources of contraceptives.

Perceptions of contraceptives are generally negative. Parents disapprove of contraceptive use by unmarried youth and adolescents themselves have negative opinions of unmarried adolescents

using contraceptives. In addition, adolescents are not able to seek contraceptives for themselves and communication on contraceptives among sexual partners is low.

The results suggest that adolescents are ambivalent about their motivation to seek services from the health facilities and only a few of them collect contraceptives from a clinic. However, results show that if they wanted contraceptives, adolescents would know where to get them from. In addition, narratives from FGDs showed that adolescents had negative perceptions about the service provision environment. Respondents indicated that barriers to using service providers included cost of services, discrimination by age and inadequate privacy.

The findings in this chapter provide an overview of factors that have the potential to influence contraceptive use despite some data limitations. The results of this chapter lay a foundation for further analysis of specific perceptions and barriers that are likely to influence contraceptive use. Further analysis is also important to establish the nature and content of discussions held at home and in school that are likely to contribute to perceptions and barriers likely to affect contraceptive use.

CHAPTER FIVE

DIFFERENTIALS OF CONTRACEPTIVE USE

5.1 Introduction

This chapter presents and discusses differentials of contraceptive use according to the study variables. The presentation is based on the conceptual framework in Chapter two. The conceptual framework is organized according to the background factors, intermediate factors, proximate factors and the dependent variables. Cross tabulations with the Chi-square test were used to establish the differentials in contraceptive use among respondents in the study population presented in Table 5.1.

The results are presented in two broad sections. The first section presents the results according to the background characteristics and the second section by intervening characteristics. Results of the qualitative analysis are also integrated in these sections and they focus on discussions in school, by family members and among adolescents. The qualitative results are based on information obtained from 42 counselling teachers in 30 schools, 137 parents of adolescents who were interviewed, 55 participants in 8 FGDs (female and male unmarried in-school adolescents, female and male unmarried out-of school, female and male married adolescents and female and male parents). A summary and conclusions that highlight the major findings in this chapter is presented in the last section.

5.2 Differentials of Contraceptive Use by Background Characteristics

The factors discussed in this section are basic demographic factors, socio-cultural factors, socio-economic factors and the most important source of sexuality information. Reference in the

discussion is made to Appendix 5 that indicates the association between background variables and intervening variables.

Table 5.1: Differentials in contraceptive use by background and intervening variables, Nairobi, Kenya, 2010

Factors		Ever use (percent)	Never use (percent)	Total number of cases
Background factors				
Age		***		
	15	1.2	98.8	243
	16	3.3	96.7	244
	17	4.1	95.9	269
	18	16.6	83.4	235
	19	27.3	72.7	128
Sex		**		
	Male	10.6	45.4	519
	Female	6.8	54.6	600
Marital status		***		
	Never married	8.2	91.8	1100
	Ever married	31.6	68.4	19
Socio-cultural factors				
Living arrangement		***		
	With parents	6.2	93.8	849
	With spouse	33.3	66.7	15
	Elsewhere	15.0	85.0	247
	Not stated	12.5	87.5	8
Attending school		***		
	Attending	3.3	96.7	694
	Not attending	19.1	80.9	371
	No information	3.7	96.3	54
Division		***		
	Central	14.8	85.2	61
	Dagoretti	20.8	79.2	48
	Embakasi	7.5	92.5	716
	Kasarani	23.1	76.9	13
	Kibera	10.4	89.6	77
	Makadara	0.0	100	45
	Pumwani	0.0	100	30
	Westlands	9.3	90.7	129

Notes: *** = p<0.01, ** = p<0.05, * = p<0.1, ns = not significant.

Table 5.1 continued

Factors	Ever use (percent)	Never use (percent)	Total number of cases
Most important source of sexuality information	***		
Teacher	6.3	93.7	751
Parent	7.6	92.4	171
Other sources	18.3	81.7	197
Socioeconomic status	ns		
High	10.9	89.1	303
Medium	7.3	92.7	695
Low	9.9	90.1	121
Intervening factors			
Knowledge			
Ever heard of ways to prevent a pregnancy	***		
Yes	9.7	90.3	969
No	0.8	99.2	129
Not stated	4.8	95.2	21
How a pregnancy can be prevented	*		
Yes	9.2	90.8	1022
No	2.2	97.8	91
Not stated	0	100	6
Contraceptive knowledge	***		
Mentioned no method	0.0	100	246
Mentioned 1-2 methods	7.1	92.9	290
Mentioned 3 and more methods	13.2	86.8	487
Knows how to use contraceptives	***		
Yes	19.0	81.0	490
No	0.5	99.5	604
Not stated	0.0	100	25
Knowledge how contraceptives work in prevention of pregnancy and HIV/AIDS	***		
High	21.6	78.4	305
Moderate	15.8	84.2	139
Low	7.0	93.0	71
Not stated	0.5	99.5	604
Knowledge of risks to unprotected sex	***		
High	15.8	84.2	19
Moderate	19.6	80.4	291
Low	16.1	83.9	205
No knowledge	0.5	99.5	604

Notes: *** = p<0.01, ** = p<0.05, * = p<0.1, ns = not significant.

Table 5.1: Continued

Factors	Ever use (percent)	Never use (percent)	Total number of cases
Knows source of contraceptives	***		
Knows source	13.5	86.5	608
Does not know	2.7	97.3	511
Perceptions			
Parent/guardian would approve contraceptive use for unmarried youth	***		
Would object	6.2	93.8	728
Would not object	17.7	82.3	237
Other response	5.8	94.2	154
Opinion of unmarried youth to use contraceptives	***		
Approve	23.3	76.7	266
Disapprove	4.1	95.9	838
Not stated	0.0	100	15
Can get contraceptives for self if wanted to	***		
Yes	19.0	81.0	441
No	1.6	98.4	615
Not stated	3.2	96.9	61
Partner communicates about contraceptives	***		
Communicates with sexual partner	77.2	22.8	79
Never communicates	47.7	52.3	65
Not stated	0.4	99.6	975

Notes: *** = p<0.01, ** = p<0.05, * = p<0.1, ns = not significant.

Table 5.1: Continued

Factors	Ever use (percent)	Never use (percent)	Total number of cases
Barriers			
If wanted to use contraceptives today would know source	***		
Would know source	13.7	86.3	673
Would not know source	0.9	99.1	446
Methods available all the time would motivate	***		
No	7.9	92.1	1018
Yes	15.8	84.2	101
Clinic hours convenient	*		
No	8.5	91.5	1112
Yes	28.6	71.4	7
Free services would motivate	ns		
No	8.3	91.7	1069
Yes	14.0	86.0	50
Distance near enough would motivate	***		
No	4.8	95.2	836
Yes	19.8	80.2	283
Services within reasonable time would motivate	***		
No	8.1	91.9	1103
Yes	43.8	56.2	16
Friendly protocols/ procedures would motivate	**		
No	8.3	91.7	1103
Yes	25.0	75.0	16
Privacy would motivate	ns		
No	8.3	91.7	975
Yes	10.4	89.6	144
Total	8.6	91.4	1119

Notes: *** = p<0.01, ** = p≤0.05, * = p<0.1, ns = not significant.

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5.2.1 Basic Demographic Factors

The demographic factors discussed are age, sex and marital status. The results show that contraceptive use increased by age. The results also show that both age and sex were significantly associated with contraceptive use at $p<0.01$ and sex was moderately significant at $p<0.05$. Use of contraceptives increased from 1.2 percent among adolescents 15 years of age to 27.3 percent among adolescents who were 19 years old. Similarly, use of contraceptives increased by sex. Use of contraceptives increased from 6.8 percent among females to10.6 percent among males. These results imply that age and sex were both important determinants of contraceptive use among adolescents in the study area. The results of the FGDs support the quantitative results on association of contraceptive use and age. Most adolescents were afraid of seeking services because service providers discriminated against them due to age. The following excerpts illustrate the reasons why age is a challenge in contraceptive use:

> Joshua: "It is hard to go and buy contraceptives from the shops because when they look at you and see that you are young, they won't give you" (in-school, 16-year-old male respondent).

> Josephine: "There are some hospitals where if you go to get those things [contraceptives], they require an identity card from you. At my age, I don't have such a card" (16-year-old in-school female respondent).

The results above are consistent with theory and empirical evidence. Condom use was the most popular contraceptive method among unmarried adolescents and this may have influenced increased contraceptive use among males. Studies done elsewhere have obtained similar results (Meekers and Klein, 2002; KNBS et al., 2010).

The quantitative results also show that marital status was significantly associated with contraceptive use. The results show that contraceptive use among ever married adolescents (31.6

percent) was higher than that of those who had never married (8.2 percent). The results imply that marital status is an important determinant of contraceptive use in the study area, as expected, since ever married adolescents are more exposed to frequent sex and have the benefit of more positive perceptions from the environment that does not approve contraceptive use among unmarried youth. This finding supports the results from other studies in Kenya (KNBS et al., 2010).

Results of the qualitative data show that although some married male adolescents were reluctant to use contraceptives because their wives were suspicious, many female respondents reported that their partners were supportive as indicated in a quote from the FGD discussion below:

> Effie: "I knew my husband supported contraceptives because he told me so himself. He does not quarrel and he even brings them (contraceptives) to me himself" (19-year-old married female adolescent).

5.2.2 Contraceptive Use by Socio-Cultural Factors

Socio cultural factors presented in this section include: administrative division where adolescents lived and socioeconomic status; living arrangement, school attendance and important source of sexuality information.

The results presented in Table 5.1 show substantial variations in contraceptive use by divisions. Contraceptive use varied from zero among adolescents living in Makadara and Pumwani to 23.1 percent among adolescents living in Kasarani. These results imply that place of residence is a significant determinant of contraceptive use. This is not surprising. Studies carried in Guatemala (Bertrand et al., 2001) and the urban squatter settlements of Karachi (Fikree et al., 2001) obtained similar results.

The pattern of association between ever use of contraceptives among adolescents within socio-economic status is not consistent with expectations as the level of use is nearly the same in low socio-economic and high socio-economic status. The results indicate that contraceptive use varies from 7.3 percent among adolescents in medium socio-economic status, 9.9 percent in low and 10.9 percent among adolescents in high socio-economic status. These results imply that socio-economic status is not a strong determinant of contraceptive use in the study area. This finding somewhat contradicts several other studies that show significant association of socio-economic status with contraceptive use (Klepinger et al., 1995; Bertrand et al., 1998; Madise et al., 1998; Alauddin, 1999; Casterline et al., 2001; CBS et al., 2004; Erulkar et al., 2005; Madise et al., 2007; KNBS et al., 2010).

However, results of qualitative data seem to suggest that socio-economic status could be influencing contraceptive use through the costs of commodities. Most adolescents indicated cost of contraceptives as a challenge. Adolescents felt that contraceptives should be cheaper or even free to make them more accessible. The following statements illustrate the opinions of most adolescents in the FGDs:

> Joyce: "You see for a school girl, she does not have money. We don't get money per day and actually, it [contraceptive] should be free" (in-school 15-year-old female respondent).

> Mercy: "It [contraceptives] should be made free. A woman was married when she was still a girl. So she never got to know about those things and now when she goes to the hospital is when they start telling her about those things. For example, if it is expensive she won't manage and even her husband does not understand. She is just a person who is hustling. Now these things [contraceptives] should be free so that she [the girl) can just continue with them in-case of anything" (in-school, 17-year-old female respondent).

> Beatrice: "Contraceptives should not be more than 10 Kenya shillings. You find that many people cannot afford, if maybe they sell it at 50 shillings, someone tries

to budget and sees this 50 bob [shillings] can buy vegetables, cooking fat and fuel [paraffin], they will not spend 50 bob on condoms that they will use for maybe 15 minutes" (out-of-school, 18-year-old female respondent).

The living arrangement, school attendance and source of sexuality information were all significantly associated with ever use of contraceptive. Contraceptive use was lowest among adolescents who lived with their parents and highest among those who lived with their spouses. This result implies that living arrangement is an important determinant of contraceptive use among adolescents in Nairobi. This finding is expected. Theoretically, fear of parents or other people that are significant to the adolescents can constitute a psychological barrier to contraceptive use. In an environment where parents or guardians disapprove of contraceptive use by unmarried youth, adolescents are less likely to use contraceptive out of fear. This finding is supported by other studies (Brown, 2001; Speizer, 2001; de Belmonte et al., 2000; Rwenge, 2000; Erulkar et al., 2005).

The results of IDIs were consistent with the quantitative results since nearly all 137 respondents felt that adolescents and youth should not have access to contraceptives. In addition, most parents in both IDIs and FGDs indicated that they would discipline their children if they found them using condoms, as abstinence is the thing to encourage. The following quotes from parents illustrate their feelings about contraceptives:

Zawadi: "If I found my daughter with pills, I will swing her neck first before I seek to know where she got those (pills) from" (female parent in IDI).

Mary Anne: "I will chase her [daughter] from the house and tell her to go and get married" (female parent in IDI).

Lukas: "At their age I don't agree [agree with guidance on what contraceptives are, how they are used and availability]. Contraception is a family planning method and should not be abused by youths just because they are lusty [lustful]. They should be taught how to abstain. By exposing the teenagers to condoms and other

contraceptives, it will be like telling them to go out there to experiment" (male parent in FGD).

Jacinta: "I cannot allow family planning in my house. Family planning thing [pill or condom] is a health hazard" (female parent in FGD).

The adolescents attending school were less likely to have ever used contraceptives. Ever use of contraceptives was 19.1 percent among adolescents out-of-school compared to 3.3 percent among adolescents attending school. Adolescents attending school were more exposed to negative messages on contraceptive use by adolescents from teachers than those adolescents out-of school. Studies carried out elsewhere have obtained similar results (Khamasi and Undie, 2008; Brown et al., 2001). Adolescents are also less likely to access contraceptives in an environment where health facilities open during regular working hours reducing access to reproductive health services for school going adolescents (Ndhlovu teal., 1997).

Finally, ever use of contraceptives was significantly associated with source of sexuality information. Ever use of contraceptives varied from a low of 6.3 percent among adolescents whose most important source of information was the teacher to a high of 18.3 percent among adolescents whose most important source of sexuality information was other sources (peers, friends and the media). This result is supported by studies carried out elsewhere (Twa-Twa, 1997; Jaccord and Patricia, 2000; Casterline et al., 2001; Haque and Soontharndhada, 2009).

Association of contraceptive use with the most important source of sexuality information as other sources was confirmed by narratives from teachers, parents and adolescents. Most adolescents discussed sexuality issues with their friends and their siblings. Although adolescents mentioned parents as the main source of sexuality information, most of the messages did not

convey sexuality issues. However, few adolescents also mentioned that content of sexuality information discussed at home included boy-girl relationship, followed by HIV/AIDS, how to avoid a pregnancy, abstaining, sexually transmitted diseases (STDs), menstruation, body development, contraception and abortion in that order. Among parents in IDIs who mentioned sexuality information at all, the content of discussion with their children included HIV/AIDS, drug abuse, sexual immorality, drug abuse and pregnancy prevention. At home, discussions were not structured and parents felt inadequate to discuss sexuality issues. In addition, although a life skills curriculum has been introduced in schools, the content is inadequate and teachers lack the skills to discuss sexuality issues. Opinion on sexuality education in schools was also divided with some teachers supporting it while others opposing it. Content of sexuality issues discussed in school were similar to those discussed at home with contraception being the least topic discussed. The schools also rely on peer educators' clubs to discuss sexuality issues with other students. The following are some of the excerpts that illustrate the environment on sexually information:

> Kate: "I discuss [sexuality issues] with my sister rather than anyone else in the family because we are of the same sex and she understands what I am going through" (in-school 17-year-old female respondent).

> Stephen: "If you approach your mother and ask her about contraceptives and especially condoms, she will think that you want to start using them. She will ask you many questions and stress you" (16-year-old male in-school respondent).

> Japheth: "For me I can say the person I am free with is my cousin or a friend. You just find yourself confiding to either your cousin or a friend" (out-of school 17-year-old male respondent).

> Barnet: "Parents should discuss sexuality with their children freely and discuss it most of the time because it is important'' (in-school, 18-year-old female adolescent).

Susan: "If she [daughter] asks about how to prevent a pregnancy, you will be shocked and ask her to repeat what she has just said. For me, I will get very angry with her" (female parent in FGD).

Jonathan: "We are dealing with growing children who are informed… they are now young adults and they know about sex and since they are your own children, you find it embarrassing to discuss issues of sexuality and HIV" (male parent in FGD session).

Jim: "But you know the problem here is that most of the parents do not know about sex education. They do not even know when a child has started her period or menstruation" (male parent in IDI).

Emma: "Some of the children are technically more knowledgeable than parents about how contraception occurs" (female parent in IDI).

Simon: "Using a language that your teenage child will understand…the language that will bring him to the table becomes very hard" (male parent in FGD session).

Josephat: "To add on that of culture…religion is also a very big barrier…at least when it comes to communicating to a child about sexuality. There is no way as father…may be you go to church or mosque and…church…they do not speak about sexuality. Even fathers [Catholic fathers] or Imams [Muslim preachers]…they do not tell parents to go and discuss about it. So, that looks like it is prohibited. So you as a father, you do not even try to communicate about that" (male parent in FGD session).

Narratives in this study indicate that the Ministry of Education had introduced life skills curriculum in schools. However, most of the teachers and parents interviewed indicated that sexuality education in school was inadequate and unstructured. Teachers who were expected to carry out counselling activities lacked skills, they were overburdened and they lacked supporting materials. Interview excerpts below illustrate the sexuality education environment in schools:

Dickson: "Sexuality policy is not there…save for the last one year when they [Education Managers] brought in life skills…enforcement has been a little bit lacking…I think they just have an idea about that [life skills] …it can be used as a vehicle to get to the young people and their sexuality…I think it can be made better…it just came…we just found ourselves in life skills…I think those on the ground were not told what it was meant to achieve. I am saying there are topics in that syllabus that can be used alongside to teach health reproduction" (male counselling teacher).

Veronica: "Nobody is handling the subject adequately. Schools lack proper curriculum, then lack qualified teachers, then lack time. They [schools] lack books and facilities"(female counselling teacher).

Charity: "First of all as a teacher, we tend to put what we call don'ts...we do not get in detail. We just say do not do this, but nobody sits down with the students to talk to them about their body changes...their sexual urges... and most of the time we just concentrate...like if it is in this sciences...we just say OK, this is the human body...these are the changes that you go through, that, it [subject] finishes there. If it is religious subject, they (teachers) just say sex is bad...all that...the problem we have is that nobody tells them [students] that in marriage sex is not wrong...nobody tells them that they are students and they will have those urges" (female counselling teacher).

Moses: "Yes I am able to talk about sex openly...you know culturally, I feel that we don't talk about it, and when you talk about it, it is in low tones, and we do not call a spade a spade, that is, you will not come out very clearly to talk about sexuality. I think my briefs changed, for example, talking about the use of condoms... we just tell them [students] that it is wrong to use condoms. So those briefs had really to change...so I give them knowledge about contraception and I leave them to make their own choices" (counselling teacher after attending some counselling training sessions).

The findings of inadequacy of sexuality discussions at home and in school are supported by other studies elsewhere (NCPD, 1997; Ayiemba, 2001; Brown et al., 2001; Izugbara, 2007; Khamasi and Undie, 2008). Some of the influences of sexuality education at home could be attributed to urbanization where African traditions that govern appropriate sexual conduct have been eroded.

5.3 Differentials of Contraceptive Use by Intervening factors

Intervening factors discussed in this section are: knowledge about contraceptives, perceptions and barriers.

5.3.1 Contraceptive Use by Knowledge Factors

Knowledge factors discussed here are: ever heard of ways to prevent a pregnancy, knowledge of how a pregnancy can be prevented, contraceptive knowledge, and knowledge of how contraceptives are used, knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS and knowledge of risks of unprotected sex.

The results show the knowledge factors listed above were significantly associated with contraceptive use at $p<0.01$. Results indicate that contraceptive use increased by the level of knowledge of pregnancy prevention, contraceptive knowledge and knowledge of how contraceptives are used. Ever use of contraceptive rose from 0.8 percent among adolescents who had never heard of ways to prevent a pregnancy to 9.7 percent among adolescents who had ever heard of ways to prevent a pregnancy. Ever use of contraceptive also increased from 2.2 percent among adolescents who did not know how a pregnancy could be prevented to 9.2 percent among adolescents who knew that a pregnancy could be prevented by contraceptives. Finally, ever use of contraceptive increased from 7.1 percent among adolescents who mentioned 1-2 methods of contraceptives to 13.2 percent among adolescents who mentioned 3 or more methods and from 0.5 percent among adolescents who did not know how contraceptives work to 19.0 percent among adolescents who knew how contraceptives work. These results are consistent with studies carried out elsewhere (Kiragu and Zabin, 1995; Gage, 1998; Oni et al., 2005;Ryan et al., 2007).

The results of the qualitative data also support knowledge as an important determinant of contraceptive use as illustrated in the quotes below:

Seliste: "For me, I would like to be told how to use the contraceptive. I would like to know even the negative side of it so that I can be aware of the effects" (out-of school, 16-year-old female respondent).

Edina: "Some people will not use contraceptives out of ignorance. There are girls who will not use pills because they think that they will get cancer" (17-year-old, married female respondent).

Although knowledge of contraceptives is important, the type of messages and how the messages are passed influences contraceptive use. Respondents in FGDs indicated that messages delivered by health providers were biased against contraceptive use, as the providers advised adolescents to give birth first before using hormonal contraceptives. Messages given by service providers convey somewhat negative perceptions that may act as a barrier to contraceptive use as illustrated below:

Hannah: "The doctor who taught me said that if you use pills before you get a child, you will not be able to get a child... can get cancer...can give birth to conjoined twins...so you find this is the problem because people discourage you to use" (out-of-school 19-year-old female respondent).

Vane: "At the clinic the provider will tell you that if you get used to taking injections, you will not give birth in future" (out-of-school, 18-year-old female respondent).

Mercy: "The doctor says that you must have two children and then be assessed to be able to use contraceptives...so you must be assessed first" (out-of-school, 17-year-old female respondent).

The finding about providers' negative perception on contraceptive use by adolescents is consistent with that of other studies. Health providers at the health facilities in Kenya were found to advise against use of hormonal contraceptives by adolescents before they give birth at least once (Ndhlovu et al., 1997).

The pattern of association between ever use of contraceptive and knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS is consistent. Ever use of contraceptives among adolescents with higher knowledge seemed higher than use of contraceptives among adolescents with low knowledge. However, ever use of contraceptives and knowledge of risks of unprotected sex was inconsistent. Ever use of contraceptives among adolescents with low knowledge of risks to unprotected sex was 16.1 percent compared with 15.8 percent among adolescents with high knowledge of risks of contraceptive use. The results imply that the level of knowledge of risks of unprotected sex and knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS were not consistent with ever use of contraceptives in the study area. The inconsistencies between the high level of knowledge and low contraceptive use are not surprising. The theory and practise support association of contraceptive use with knowledge of risks associated with unprotected sex (Fishbein and Ajzen, 1980; Kiragu and Zabin, 1995; Gage, 1998; Oni et al., 2005). However, high knowledge of risks of unprotected sex and knowledge of how contraceptives work in the prevention of a pregnancy and HIV/AIDS may not always translate into increased contraceptive use among adolescents (Fishbein and Ajzen 1980; Calves, 1999; Bruckner et al., 2004; CBS et al., 2004; Hall et al., 2004; Izugbara and Undie, 2008; KNBS et al., 2010).

Qualitative analysis supported the results of the quantitative data on the inconsistencies between awareness of risks and positive sexual behaviour. The narratives from FGDs indicated that adolescents were aware of the risks of unprotected sex and use condoms to prevent pregnancy and HIV/AIDS as illustrated below:

> Dan: "You know the modern youth is more empowered with information than ever before. When you think of the risks that you will get yourself into if you don't use a

condom, you just find yourself using it. I think the father of all risks is HIV and other sexually transmitted diseases and then you don't want to get somebody's daughter pregnant. I have seen cases of many girls dying while procuring abortions" (out-of-school 18-year-old male respondent).

Narratives from FGDs indicated that although adolescents may be aware of risks of unprotected sex, lack of planning affects use, as the quotes below illustrates:

Carol: "At times, sex is rushed and you don't know what to do. At times you had not planned for it but you find someone forcing you into it" (in-school, 16-year-old female respondent).

Grace: "You will get maybe a girl visits her boyfriend and they had not planned to have sex. When they get overwhelmed by emotions, they will not stop to go and buy the contraceptives or condoms and they will just go ahead and take the risk" (out-of school, 17-year-old female respondent).

5.3.2 Contraceptive Use by Perception Factors

Perception is a key aspect of this study. Perception factors discussed were: parent approval, opinion of unmarried youth to use contraceptives, ability of adolescents to get contraceptives for self and partner communication.

Parental approval was significantly associated with contraceptive use at $p<0.01$. Contraceptive use increased from 6.2 percent among the adolescents whose parents would object to 17.7 percent among adolescents whose parents would not object. These results imply that parental approval was an important determinant of contraceptive use among adolescents in the study area. Similar findings are found in other studies (Jaccord and Patricia, 2000; Meekers and Klein, 2000; Ryan, 2007).

Similarly, the results also indicate that use of contraceptives was significantly associated with the adolescents' approval. Contraceptive use rose from 4.1 percent among adolescents who disapprove use by unmarried youth to 23.3 percent among adolescents who approve use by unmarried youth. The results imply that adolescents' approval was a significant determinant of use of contraceptives in the study area. Studies done elsewhere have obtained similar findings (Meekers and Klein, 2000; Brown, 2001). Parents are a product of society and their values are likely to influence adolescents' perceptions on contraceptives.

The results of the qualitative analysis supported the quantitative results on the association of parental approval and contraceptive use. During IDIs, very few parents indicated they talked about the advantages of contraceptives with their teenage children and cited disadvantages of contraceptives as their main focus of discussion. Most respondents among the parents indicated that if they found their daughters or sons with contraceptives, they would be annoyed. In narratives from FGDs, parents expressed negative perceptions about contraceptive use among adolescents. These perceptions were contrary to the general consensus about the topics they indicated important to discuss at home which included pregnancy prevention and contraceptive use. One parent noted:

> Magdalene: "I cannot allow such a thing to happen in my house. This family planning thing is a health hazard. That is what I shall tell her [daughter]. Family planning destroys one's body. From a personal experience, I can appeal to my daughter not to use contraceptives" (female parent in FGD session).

However, some parents supported contraceptive use as illustrated by one parent:

> Betty: "I have seen contraceptives in my house. When I first saw them, I was very shocked but logic took over. I asked them [sons] where they got the contraceptives

from. It was a condom... I always tell them that it is better to abstain or use condoms because they are best" (female parent in FGD).

Adolescents in FGDs supported contraception and indicated that use of contraceptives was a sign of maturity and of being responsible. However, some adolescents disapproved because contraceptive use would make adolescents careless. The excerpts below illustrate adolescents' opinions about contraceptive use:

> Douglas: "I would be comfortable if my girl-friend asks me to use condoms because I don't want to spoil both our lives. I will be glad because she will not get pregnant" (in-school, 18-year-old male respondent).
>
> Jennifer: "For me, adolescents should not even be given information on contraceptives because it [information] will make them careless" (15-year-old, in-school female respondent).
>
> Ben: "If a girl asks me to use contraceptives, I can take her to be very responsible because she has foreseen the outcome. I can say that she is taking responsibility of her life" (out-of-school, 19-year-old male respondent).
>
> Njeri: "I cannot walk to the shop and ask for contraceptives. It would be very funny. Girls cannot do that!" (in-school, 15-years-old female respondent).

The association between the ability to get contraceptives for oneself and ever use of contraceptive was also significant. Ever use of contraceptive increased from 1.6 percent among adolescents who could not get contraceptives for self to 19.0 percent among adolescents who could get contraceptives for themselves. This implies that ability to get contraceptives for oneself was a significant determinant of contraceptive use among adolescents in the study area. This result was expected. In Kenya, parents and religious leaders have for a long time opposed contraceptive use by unmarried youth and therefore adolescents are likely to fear seeking contraceptives for themselves. The above results are consistent with results from studies done

elsewhere (Gage et al., 1993; WHO, 1997; Gage, 1998; de Belmonte et al., 2000; Casterline et al., 2001; NCAPD et al., 2011, KNBS, 2004).

The results obtained from IDIs and FGDs illustrate that most adolescents had negative perceptions on contraceptive use out of mistrust, and fear of embarrassment should other peers know about their contraceptive behaviour. The following excerpts illustrate fears and mistrust adolescents have about contraceptive use:

> Linnet: "I would wonder...if we have not been using condoms or pills and my boyfriend tells me that we start using...I will ask myself... what is it that he has done out there that we should use them. ...I will think that he is not responsible and he is disrespectful and he just wants to use me" (out-of-school, 17-year-old female respondent).

Female respondents in FGDs expressed their fears that sexual partners would discuss them among their friends and this would be construed to be immoral as illustrated below:

> Mary Garret: "If a boy asks you to use pills, I would fear that the boy will tell others and this will cause the girl to be embarrassed. Contraceptive use is a girl's secret and I would be embarrassed if the boy goes to tell others" (in-school, 15-year-old female respondent).

The finding of fear of humiliation by other adolescents was not surprising and supports studies done elsewhere (de Belmonte et al., 2000; Otoide et al., 2001; Casterline et al., 2001; Oni et al., 2005; Izugbara and Undie, 2008).

Ever use of contraceptives increased with sexual partner communication. Based on respondents who ever had sex and therefore had sexual partners, the results indicated that use of contraceptives varied with whether adolescents discussed the issue with sexual partners.

Contraceptives use in the study area increased from 47.7 percent among adolescents who never communicated with their sexual partners about contraceptive use to 77.2 percent among adolescents who communicated with their sexual partners. The results imply that partner communication was a significant determinant of contraceptive use. Studies carried out elsewhere have found similar results (Alauddin, 1999; de Belmonte et al., 2000; Casterline et al., 2001).

Narratives from FGDs with sexually active adolescents supported the quantitative results. Most adolescents feared suggesting the use of contraceptives to their partners, especially condoms, as this was viewed as an admission of infidelity. Most respondents who discussed using contraceptives with their sexual partner indicated that this showed a sense of caring as illustrated below:

> Lawrence: "Let us look at it within marital status, because…like the married couples, when they trust each other, they will not see the need of using contraceptives…so they will not use them" (19-year-old married male respondent).
>
> Benson: "She will just ignore you…girls are refusing to use condoms because they want sex live" (out-of-school, 18-year-old male respondent).
>
> Lucy: "I don't think contraceptive is a subject to discuss with your boyfriend. It should be a girl's decision and secret. I think if I discuss with a man, he can go and tell his friends and they will wonder what kind of a girl I am" (out-of school, 17-year-old female respondent).
>
> Hilda: "It is important to discuss about contraceptives because the girl knows the effects of not using them. If she does not use them, the girl is the one who will have problems" (in-school 16-year-old female respondent).

Although some adolescents will not use contraceptives in marriage, others welcomed the idea. Husbands looked for opportunities to discuss the need for contraceptive use while wives indicated indirect communication that showed support to use as illustrated below:

Rose: "If he [husband] does not quarrel when he finds that I am using a contraceptive, I will know he is OK with them [contraceptives] and he supports" (19-year-old female married respondent)

Robinson: "When you see a neighbour get a child too soon...that is as a consequence of not using [contraceptives]... that is when you say...it is better to start using them...because next it will be happening [pregnancy] in your own house...that is when I will tell her [wife] to look at what happened to the neighbour" (19-year-old married male respondent).

5.3.3 Contraceptive Use by Barrier Factors

Barrier variables were the other key factors of the study. This section discusses the patterns of association between barriers and ever use of contraceptive. Barriers discussed here were knowledge of contraceptive supply source and factors that would motivate adolescents to seek contraceptives from a health facility. The motivator factors discussed under barriers were availability of methods, convenience of clinic hours, free services, physical distance, and services given within reasonable time, friendly protocols and procedures and, privacy of services.

The results indicated that knowledge of the source of contraceptives was significantly associated with contraceptive use at $p<0.01$. Results indicated that contraceptive use increased by knowledge of source. Use of contraceptives varied from 0.9 percent among adolescents who did not know the source of contraceptives to 13.7 percent among adolescents who knew source. The results imply that knowledge of source of contraceptives was a significant determinant of contraceptives in the study area. The results support theories and other studies that found similar results (Curtis et al., 1996; Erulkar et al., 2005; KNBS, 2010).

During the FGDs with adolescents, they indicated that knowing where to obtain the methods was not enough. Although most respondents seemed to know where contraceptives could be obtained, many of them indicated that they would love to know how the methods work. Most adolescents also mentioned that they were not free to collect contraceptives from the regular sources as illustrated below:

Monica: "The provider should explain about pills so that girls can make informed decisions" (out-of school, 18-year-old female adolescent).

Dominic: "I can get support from brothers. Your brothers and sisters can go to buy a condom for you because they are older, which will not arouse curiosity from the shopkeeper" (17-year-old, in-school male adolescent).

The results showed that among the motivating factors that were significantly associated with contraceptive use were: if methods are available all the time, if clinic hours are convenient, if distance to the clinic is near enough, if services are given within reasonable time and if clinic protocols were friendly. All these factors were significant at $p<0.01$. However, free services and privacy of services were not significant.

The results indicated that use of contraceptives rose with availability of services all the time from a low of 7.9 percent among adolescents who were not motivated by availability of services to a high of 15.8 percent among adolescents who were motivated if methods are available all the time. Similarly, use of contraceptives varied from 8.5 percent among adolescents who were not motivated by clinic convenience to 28.6 percent among adolescents who were motivated by convenience of the clinic location. Use of contraceptives also varied from 8.3 percent among adolescents not motivated by free services to14.0 percent among adolescents who were motivated by free services.

The results indicated that contraceptive use increased from 8.1 percent among adolescents who were not motivated by services given within reasonable time to 43.8 percent among adolescents who were motivated by this factor. Results also showed that friendly services were significantly associated with contraceptive use. Contraceptive use increased from 8.3 percent among

adolescents who were not motivated by friendly protocols to 25.0 percent among adolescents who were. Similarly, use of contraceptives increased from 8.3 percent among adolescents who were not motivated by privacy to 10.4 percent among adolescents who were motivated by privacy.

The results imply that factors that motivate adolescents to seek services were important determinants of contraceptive use in the study area. If facilities are not youth-friendly, adolescents will be less likely to seek services from them. Studies done elsewhere obtained similar results (Kristin et al., 1999; Otoide et al., 2001; Harper et al., 2004; Erulkar et al., 2005; Prince and Hawkins, 2007).

The results indicated that physical distance was significantly associated with contraceptive use. Contraceptive use increased by physical distance from a low of 4.8 percent among adolescents who did not find the services close enough to a high of 19.8 percent among adolescents who found the distance near enough. The results imply that physical distance was a significant determinant of contraceptive use. The results were not surprising. This finding supports that of study done in Guatemala (Bertrand et al., 2001).

Narratives from the qualitative data supported the quantitative findings on barriers to contraceptive use among adolescents. Most adolescents indicated that de-motivators of contraceptive use included discrimination against services on account of age that made the service environment protocols unfriendly to adolescents. Other provider biases mentioned by adolescents during FGDs were cost of services and privacy. Narratives from FGDs indicated that

shopkeepers refused to sell contraceptives to young people and this caused fear among the respondents. To overcome this barrier (age), adolescents mostly had to ask older family members and friends to buy them contraceptives. Excerpts from the interviews below illustrate opinions of contraceptive service barriers by adolescents:

> Derrick: "At the clinic they should give you all the information and services you need. They should not conclude that I am young and up to some mischief. I would like to be treated as a normal patient. They should just provide me with the information I need, and, not stress me with a lot of lectures" (18-year-old married male respondent).
>
> Naomi: "Some hospitals ask for an identification card before you are attended…they will not give a contraceptive to a girl who is below 18 year of age age" (16-year-old-in-school female respondent).
>
> Peter: "I send my friend who is older than me to go and buy condoms for me" (16-year-old in-school male respondent).
>
> Jessica: "The provider should be kind and should give information freely. The services should also be provided in one room so that no one gets to know what service you are seeking" (17-year-old out-of-school female respondent).

Factors that de-motivated adolescents from seeking services related to quality of services and client satisfaction and therefore were not surprising. Studies done elsewhere support these results (Jain, 1992; Bertrand, 1995; Ndhlovu et al., 1997; Harper et al., 2004).

5.4 Summary and Conclusions

The results showed that contraceptive use varied by demographic factors, socio-cultural and socio-economic factors, knowledge, perceptions and barriers. Contraceptive use increased by age and more males than females were using contraceptives while ever married adolescents used contraceptives more than never married adolescents. Socio-cultural factors were important determinants of contraceptive use in the study area. Unexpectedly, socio-economic factors did

not show significant association with contraceptive use and the study found more adolescents using contraceptives from both high and low socio-economic status. All knowledge factors showed significant association with contraceptive use underscoring the importance of information and knowledge and the critical need for accurate information in forming positive perceptions. All perception factors were significantly associated with contraceptive use and the results showed a consistency with parental objection and adolescents' approval of unmarried youth to use contraceptives. Although barriers were associated with contraceptive use, privacy of services and free services did not show any association.

Results of the qualitative analysis supported association of perceptions and barriers with contraceptive use and importance of sexuality information for adolescents, parents and teachers. Narratives indicated that parents and teachers had negative perceptions and focused their messages on the negative effects of contraceptives. For adolescents, narratives showed that barriers originated from lack of information on contraceptives, not knowing how contraceptives work and age bias by service providers. FGDs and IDIs in this study showed that adolescents were being socialized at home and in school with a minimum of sexuality instruction that would have helped them understand biological processes and how to prevent risk sexual behaviour. Parents and teachers reportedly gave inadequate information on sexuality. Furthermore, parents lacked the confidence to discuss sexuality issues with their children. In many schools, sexuality education was left to unskilled teachers who gave negative messages on contraceptive use. Teachers and parents recommended strengthening sexuality education in schools. Teachers also recommended a comprehensive sexuality curriculum supported with teaching guidelines and

materials. They also recommended that sexuality education should be an examinable subject to ensure teachers took it more seriously.

The effects of intervening factors on background factors and how this interaction influences contraceptive behaviour outcomes is highlighted in Appendix 5. The results showed that among the demographic factors included in the study, age was significantly associated with knowledge factors. Results also showed that the factors significantly associated with age and contraceptive use among intervening factors were: knowledge of how contraceptives are used, knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS, knowledge of risks to unprotected sex, knowledge of source of contraceptives and opinion of unmarried youth to use contraceptives. The results showed that socio-cultural factors were significantly associated with knowledge, perceptions and barrier factors. Attending school was strongly associated with all knowledge factors, parental and adolescents' approval, ability to get contraceptives for self, sexual partner communication, knowledge of source of contraceptives, motivation by availability of methods, physical distance and privacy. The division where adolescents lived was strongly associated with knowledge of how a pregnancy can be prevented, knowledge of contraceptive methods, knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS, knowledge of risks of unprotected sex, knowledge of source of contraceptives, all perception factors, knowledge of source of contraceptives, availability of methods and services given within reasonable time. The most important source of sexuality information was associated with all knowledge factors and all perception factors. However, the most significant association of source of sexuality among the barriers was knowledge of source. Socio-economic status showed the least significant associations with knowledge, perceptions and barriers. Socio-economic status

also showed significant association with only knowledge of how a pregnancy can be prevented, parental approval and sexual partner communication. The above results provide the basis to examine the importance of background factors in determining contraceptive use and how the level of their influence is modified by intervening factors. These latter factors include knowledge, perceptions and barriers.

CHAPTER SIX
DETERMINANTS OF CONTRACEPTIVE USE

6.1 Introduction

This chapter presents and discusses the results of the multivariate analysis. The analysis was guided by the conceptual framework described earlier. The chapter has four sections. Section one discusses the results of the analysis of the effects of the background variables. Section two presents the results of the effects of perception and barrier variables and tests the study hypothesis related to these variables. Section three presents and discusses the results of the multivariate analysis that included all the study variables. A summary of the results is provided in section four.

In line with the conceptual framework of the study, six models were fitted as follows:

(i) Model 1: Background variables

(ii) Model 2: Perception variables

(iii) Model 3: Barrier variables

(iv) Model 4: Background and perception variables

(v) Model 5: Background and barrier variables

(vi) Model 6: All the study variables

During the analysis, the variables were organized such that the category with the lowest contraceptive use was taken as the reference. For example, on the sex variable, the female category was used as the reference because the use of contraceptives was higher among the males than it was among the females. The knowledge variables were included in Model 2 because knowledge is an important factor in perception formation. The results of these models are presented in Table 6.1.

6.2 The Effects of Background Variables on Contraception

This section discusses the role of the background variables in the use of contraceptives. The results showed that age, sex, living arrangements, school attendance and the administrative divisions where adolescents lived had significant statistical association with contraceptive use among the adolescents. Furthermore, the use of contraceptives increased with the age of the adolescent. For example, adolescents aged 19 were 18 times as likely as those aged 15 years to use contraceptives. These results are consistent with those reported in the literature (Meekers and Klein, 2002; Muganda-Onyando et al., 2003; KNBS et al., 2010) which show that contraceptive use increases with age.

The results from FGDs for adolescents indicated some of the reasons why age may be important in contraceptive use. These adolescents said that service providers discriminated against them on account of age. Many adolescents in the FGDs also reported that service providers discouraged the use of contraceptives by those who had not given birth. For example, according to some in-school adolescents, clinics did not give contraceptives to clients who had not given birth. The quotes below illustrate some of the barriers to contraceptive use adolescents faced at the health facilities due to their age:

> Janice: "According to the doctor at the clinic …it is not good to use contraceptives before you get two children" (17-year-old in-school female respondent).
>
> Beatrice: "Some hospitals ask for identification cards before you are attended… this means that if you are below 18 years of age you cannot get a contraceptive" (16-years-old in-school female respondent).
>
> Dickson: "Providers should not discriminate services by age. They should just take you as you are" (17-year-old, in-school male adolescent).

As indicated earlier, living arrangements were important in determining the use of contraceptives. Compared with the adolescents who lived with a parent, adolescents who lived with a spouse were 2.6 times more likely to use contraceptives. Likewise, adolescents who lived elsewhere were 1.8 times more likely to use contraceptives. Results from the parents who participated in the FGDs and IDIs showed that parents did not expect their adolescent children to use contraceptives and they associated those adolescents who did with immorality. In addition, some of the parents who participated in the IDIs indicated they would, for example, disown their children if they found them using contraceptives. These findings are similar to other studies in literature (Gage 1998; Casterline et al., 2001; Speizer, 2001) which show that parents disapprove of young people using contraceptives while the adolescents fear punishment from the family if they are found using them.

The results on the effects of living arrangements on contraceptive use could also be attributed to the messages passed to adolescents by parents, spouses and other people. Messages on sexuality from the parents focused more on misconceptions of contraceptive use to discourage children from using them. In addition, many adolescents in the FGDs indicated that they did not feel free to discuss issues of sexuality with their parents, but were freer with their friends and siblings. However, a few married female adolescents in the FGDs reported that their husbands supported the use of contraceptives and even bought pills for them. The following excerpts from IDIs and FGDs illustrate the feelings of most of the parents, unmarried and married adolescents about contraceptive use:

> Millicent: "I cannot allow such a thing [contraceptive use] to happen in my house. This family planning thing is a health hazard. That is what I shall tell her [daughter]. Family planning destroys one's body. From a personal experience, I can appeal to my daughter not to use contraceptives" (female parent in IDI).

Zawadi: "If I found my daughter with pills, I would beat her up first before asking her where she got them from" (female parent in IDI).

Mary: "If I found my daughter with pills, I would know she is having an affair and would chase her from my house and tell her to go and get married" (female parent in IDI).

Jane: "I discuss those issues [sexuality issues] with my friends because we are freer with each other" (15-year-old in-school female respondent in FGD).

Selina: "If he [husband] does not quarrel when he finds that I am using a contraceptive, it means that he supports my decision" (18-year-old female married respondent in FGD).

Ben: "When I saw my neighbour's wife with another pregnancy, that is when I started discussing contraceptives with my wife and she was in agreement with my suggestions [to space our children]" (19-year-old married male respondent in FGD).

Information from the narratives shows that married adolescents and adolescents living elsewhere would be freer to use contraceptives compared with those living with their parents. In addition, married adolescents were not attending school and this could explain why more adolescents who were out of school were also found to be more likely to use contraceptives more or less as the adolescents who lived with their spouses.

Adolescents whose main source of sexuality information was siblings and peers (other sources) were 1.6 times as likely to use contraceptives as the adolescents whose main source of sexuality information were teachers. The study found that teachers did not discuss safe sex practices and this affected the knowledge adolescents had on contraceptives. This result was emphasized in the FGD sessions. Most of the teachers who participated in the IDIs indicated that adolescents should not be given information on contraceptives because they were very young and that the sexuality information should only focus on abstinence. Most teachers also indicated that they did not have knowledge, skills or supportive policies and teaching materials to enhance discussion

on sexuality issues. In addition, information from the IDIs showed that most teachers focused on discouraging sexual activities without educating their students on the consequences of unprotected sex. The following quotes illustrate the opinions of teachers on sexuality discussions in school:

> John: "Adolescents are not entitled to condoms since they are supposed to abstain. In the first place, they are not supposed to be having sex. They are only supposed to be taught how to abstain" (male counseling teacher in IDI).

> Emma: "As a teacher, we tend to focus on the don't [emphasis that adolescents should not engage in sex]...we do not get into details. We just say, do not do this, but nobody sits down with the students to talk to them about their body changes and sexual urges" (counseling female teacher in IDI).

> Janet: "Nobody is handling the subject [sexuality education] adequately. Schools lack proper curriculum, teaching materials, then lack qualified teachers and time" (counseling female teacher in IDI).

As discussed earlier, teachers had negative perceptions on contraceptive use among adolescents. Teachers might not discuss sexuality issues because they lacked adequate knowledge and skills to communicate sexual and reproductive health issues and this affected contraceptive use among adolescents. Similar results have been reported in other studies in literature (Brown et al., 2001; Speizer, 2001) which show that teachers discourage students from sexual activities without teaching them about the dangers of unsafe sex.

Most of the parents who participated in FGDs also indicated that they felt too shy to discuss sexuality issues. Others indicated that they felt inadequate to discuss issues of sexuality with their growing children as indicated in the quotes below:

> Joan: "We are dealing with growing children who are better informed. They are now young adults and they know about sex... since these are your children you find it embarrassing to discuss issues of sexuality and HIV/AIDS with them" (female parent in FGD).

Mildred: "I think it all starts with our parents. You need to train us parents. If you facilitate me, for example, train me, I can then pass the benefits to my daughter" (female parent in FGD).

Clifford: "One challenge is that of language which may seem outdated. Using a language that your son can understand is very hard. Getting to understand the language to use with them [children] to feel comfortable is a challenge" (male parent in FGD).

Susan: "Using a language that your adolescent child will understand…the language that will bring him to the table becomes very hard" (female parent in FGD).

The information from parents who participated in FGDs showed that parents lacked adequate knowledge and skills to discuss sexual reproductive health issues with their children and this affected contraceptive use among adolescents. These results are consistent with those from other studies reported in literature (Izugbara, 2008; Biddlecom et al., 2009) which show that parents find it difficult to communicate with their children and are too shy to discuss sexuality issues with adolescents.

Most adolescents in all FGDs indicated that they felt more comfortable discussing sexuality issues with their siblings. The following quotes illustrate the opinions of adolescents on sexuality discussions at home:

Jeanne: "I discuss those issues [sexuality issues] with my sister because I am freer with her and she understands most of the issues that I am going through" (16-year-old in-school female adolescent).

David: "I discuss these [sexuality] issues with my brother. I can also discuss with my sister…but it would be awkward to discuss with my mother. If you approach your mother about contraceptives especially condoms, she will think you want to use them and ask you so many questions that stress you" (17-year-old in-school male adolescent in FGD).

The information arising from the discussions with adolescents showed that trust in the source of sexuality information was important in determining contraceptive use.

The results compared use of contraceptives among adolescents living in different administrative divisions. Adolescents who lived in Dagoretti Division were significantly more likely to use contraceptives than those who lived in Embakasi Division. These adolescents were 5 times more likely to use contraceptives than those who lived in Embakasi. Similarly, adolescents who lived in Kasarani Division were 4.5 times as likely as adolescents who lived in Embakasi to use contraceptives; adolescents who lived in Makadara and Pumwani divisions were the least likely to use contraceptives. Similar results are reported in other studies in literature (Fikree et al., 2001) which show that the environment where an individual lives influences contraceptive use through exposure to reproductive health services and contraceptive messages. Disparities in contraceptive use among administrative divisions could also be explained by the type of NGO programmes in the community.[2] Embakasi Division is the largest settlement with the highest population in Nairobi. The rapid expansion of Embakasi Division recorded in the past 10 years may have negatively affected access to contraceptives due to its large geographical area with long distances of travel to health facilities. During this period of expansion, no health facilities were constructed in the division to cater for the large population until 2011 when the government opened a new hospital. In addition, few if any NGOs implemented reproductive health programmes in this community compared to other administrative divisions in Nairobi.[3] While a higher level of contraceptive use among adolescents observed in Dagoretti, Kasarani and Kibera can be attributed to the presence of reproductive health NGOs in these areas, it was not clear on what may have contributed to the low levels of contraceptive use observed in Pumwani and Makadara.

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[2] From personal experience, most of the reproductive health NGOs implementing HIV prevention and family planning programmes are concentrated in Kibera, Dagoretti and Kasarani areas.

[3] The Kenya Demographic and Health Survey of 2008-2009 (unpublished) indicated that Embakasi enumeration area had expanded 10 fold since the 1999 population census.

Marital status and socio-economic status variables were not significantly associated with contraceptive use when controlled for other background variables. Although marital status did not have a significant effect on contraceptive use, married adolescents were almost twice as likely as never married adolescents to use contraceptives. The observed higher use of contraceptives among married adolescents is consistent with other studies (Bertrand, 1995; Ndhlovu et al., 1997; Brown, 2001; Casterline et al., 2001; Speizer, 2001) which show that unmarried adolescents face both cultural factors and provider bias in using contraceptives. The Kenya Demographic and Health Survey (KNBS et al., 2010) also showed that use of contraceptives was higher among married adolescents than among unmarried ones.

Results on the effects of sex and socio-economic status were unexpected. Male adolescents were 2.4 times more likely to use contraceptives than were female adolescents. This result is inconsistent with other studies (KNBS et al., 2011) which show that more females than males use contraceptives. This observation could be explained by increased use of male condoms among the youth in the past five years in Kenya (KNBS et al., 2010). Likewise, adolescents in low socio-economic status households were more likely to use contraceptives than were adolescents living in medium and high socio-economic status households. This result could probably be explained by integration of households that were classified in different socio-economic status in the same administrative divisions and therefore interaction of adolescents living in high, medium and those in low socio-economic status households. More adolescents in low socio-economic status may also be more likely to use contraceptives as a result of access to reproductive health services through reproductive health programmes by NGOs mainly based in

the urban slums of Nairobi (APHRC, 2002). Adolescents living in low socio-economic status households may also have been less controlled by their parents.

6.3 Effects of Perceptions on Contraceptive Use

The results for these variables are presented in Model 2 in Table 6.1 and include knowledge variables, parental approval, opinion of adolescents to use contraceptives, ability to get a contraceptive for self and partner communication. The results showed that only the variables denoting knowledge of how to use a contraceptive method, opinion of adolescents to use contraceptives, ability to get contraceptives for self and partner communication had a statistically significant effect on contraceptive use. All other factors did not show a statistically significant effect on the use of contraceptives.

Adolescents who knew how to use contraceptives were 9 times more likely to use them than those who did not know how to use contraceptives. Adolescents in different FGDs cited lack of knowledge of how to use contraceptives as a reason for non-use. In addition, they also indicated that they would want to know how to use contraceptives to be able to make informed decisions. However, parents and teachers in IDIS indicated that contraception was the topic they discussed the least with adolescents. Most teachers in IDIs had negative perceptions on educating adolescents on contraceptives and they indicated that doing so would be like giving these youth a licence to engage in sexual activities. The following excerpts illustrate some of the feelings adolescents, parents and teachers had on the need for knowledge on contraceptives:

> Jane: "Some girls do not use contraceptives out of ignorance...I would like to know more about contraceptives so that I can make my own decisions" (married female adolescent in FGD).

Lukas: "I think that exposing them [adolescents] to issues of condoms will make them want to experiment...like all other subjects they will want to practice [sex)]too" (male parent in FGD).

Jamlick: "I think that pregnancy prevention should come as a last result...because in the first place we are saying that we want to discourage them...abstinence is the issue to talk about" (male counselling teacher in IDI).

Some of the out-of-school female adolescents who participated in FGDs said that they would prefer to get services from a provider who would be free to tell them how pills are used. Others said that they would like to know the advantages and disadvantages of using pills. Other adolescents felt scared of taking contraceptives because they lacked adequate knowledge and believed that their friends became pregnant even when they used contraceptives. The following quotes illustrate the adolescents' concerns for the need of knowledge on how to use contraceptive methods:

Jediddah: "I would like someone to tell me about the advantages and disadvantages. I would like a provider to tell me how to take these things [pills]...then I can decide whether to use them or not" (18-years-old out-of-school female respondent).

Lona: " I would like some provider who can advise me better...who can advise and show me how to use them [contraceptives]...then I can decide whether to use them or not" (17-years-old out-of-school female respondent).

Joan: "Nowadays, you find people are getting pregnant when they are still using contraceptives...so you are afraid to use them when you remember that your friend got pregnant when using them [contraceptives]...we need to know how they are used" (18-years-old out-of-school female respondent).

In support of the above results, the information from the FGDs showed that knowledge on how contraceptives were used had an effect on the decision-making process on contraceptive use among adolescents. Consistent with other studies (Gage, 1998; Oni et al., 2005), knowledge of how to use contraceptives promotes compliance to use. Knowledge of how to use a contraceptive

method was statistically significant at the level of $p<0.044$ which shows its important role in contraceptive use among adolescents.

Adolescents who were able to get contraceptives by themselves were almost three times more likely than were those who could not get. Narratives from the adolescents' FGDs showed that adolescents were scared to get contraceptives for themselves from health facilities, local pharmacies or shops. In all FGDs, adolescents reported that many of them used their older siblings or friends to collect contraceptives for them. In addition, parents who participated in the FGDs and IDIs indicated they disapproved of unmarried adolescents using contraceptives; this may have discouraged adolescents from using contraceptives. Similarly, teachers emphasized abstinence thereby discouraging adolescents to seek reproductive health services. The following quotes illustrate the environment around obtaining contraceptives by adolescents:

> Bob: "You cannot walk to a clinic and ask for them [contraceptives]...it would be very awkward for a young person like me to do so... the doctor would ask you too many embarrassing questions (17-year-old in-school male respondent in FGD).
>
> Jim: "Your brothers and sisters can support you to go and buy for you condoms because they are older, which will not arouse curiosity from the shop keeper" (15-year-old in-school male respondent).
>
> Josephat: "Because at their age they should focus in their studies and not experimenting with sex...they should therefore not be entitled to condoms" (school administrator in IDI).
>
> Selina: "If I found my daughter using contraceptives, I will beat her up and tell her to go and get married" (female parent in IDI).

These narratives show that adolescents were not feeling free to purchase contraceptives from shops or collect them from the clinics. They were also afraid of their parents and teachers because being caught in the process of getting contraceptives would confirm that they were

sexually active, attracting ridicule and punishment. These results confirm that ability to get contraceptives for self influenced use. This finding is similar to other studies in literature (Bertrand, 1995; Magnani et al., 2001; Prince and Hawkins, 2007) which show that contraceptive use increases in an environment that enhances access.

Approval to use contraceptives by the adolescents was found to significantly affect their contraceptive use. As shown in the Table 6.1, adolescents who approved were 0.444 times less likely to use contraceptives than those who did not approve. Adolescents may approve use but lack access to contraceptives; those who disapproved may have had other factors to motivate them to use contraception. For example, according to the health belief theory (Janz and Becker, 1984; Rosenstock et al., 2001), protective behaviour is more likely to occur if an adolescent perceives self as vulnerable and perceives the benefits of protection to outweigh the cost of non-protection. Adolescents may therefore disapprove use but go ahead to use contraceptives due to their knowledge of associated benefits.

Similarly, adolescents who communicated with their sexual partners were 3.9 times more likely to use contraceptives than adolescents who did not. This result is similar to other studies (Alauddin, 1999) which show that contraceptive use is more likely when both partners communicate. Sexual partner communication was statistically significant at the level of $p<0.001$, which shows its important role in contraceptive use among adolescents.

Although awareness of ways to prevent a pregnancy, knowledge of contraceptive methods and knowledge of the source of contraceptives did not statistically affect contraceptive use, their

association were in the expected direction. Results showed that adolescents who had heard of ways to prevent a pregnancy were more likely to use contraceptives than adolescents who had not (Table 6.1). Similarly, adolescents who knew how a pregnancy could be prevented were more likely to use contraceptives than adolescents who did not. In addition, adolescents who knew more than three methods were more likely to use contraceptives than adolescents with knowledge of less than three methods. Similar findings are reported in other studies in literature (Casterline et al., 2001; and Ryan et al., 2007) which show that knowledge of ways to prevent a pregnancy affect contraceptive use among adolescents and that knowledge of the methods has a positive influence on contraceptive behaviour. These results show that knowledge of sexuality issues was associated with contraceptive use.

Similarly, adolescents who knew of contraceptive source were more likely to use contraceptives than adolescents who did not. This result is consistent with other studies in the literature (Casterline et al., 2001) which show that knowledge of source affects contraceptive use among adolescents. The result could also be explained by the presence of informal sources of contraceptives from community-based distributors of family planning methods through the reproductive health programmes in the community where the study was carried out. However, there was little difference between contraceptive use among adolescents whose parents approved and those whose parents disapproved.

Knowledge influences perceptions and therefore behaviour (Bandura, 1986; Glanz et al., 2002). Knowledge of how contraceptives work in preventing pregnancy and HIV/AIDS and knowledge of risks of unprotected sex were inconsistent with the expected results.

Adolescents with high knowledge of how contraceptives work to prevent pregnancy and HIV/AIDS were more likely to use contraceptives than adolescents with low knowledge. However, adolescents with moderate knowledge of how contraceptives work were less likely to use them than were adolescents with low knowledge. This result showed that the level of knowledge did not have a major influence on contraceptive use. This result was supported by adolescents who participated in FGDs. Narratives showed that knowledge alone without access to services and adequate planning for sex seemed to negatively affect contraceptive use as illustrated in the quotes from the adolescents:

> Rose: "The guys know about contraceptives but they feel shy to go and buy condoms and they also feel shy to visit a clinic" (15-year-old in-school female respondent).
>
> Beatrice: "Many times, girls do not plan to have sex, but they get overwhelmed by emotions. They will go ahead [to have sex] and take the risk" (17-year-old out-of-school female respondent).
>
> Samuel: "Like if I am with a woman right now, before I get to the condoms, it will be too late...when you finish [having sex] is when you remember the contraceptives. It can also come like a surprise, like when you go to visit and you were not expecting anything to happen...when a lady undresses, for sure you can't ran away from that [sex]" (18-year-old out-of-school male respondent).

Likewise, adolescents with high knowledge of the risks of unprotected sex were less likely to use contraceptives than were those with no knowledge. Adolescents who are aware of the risks of unprotected sex may not perceive themselves to be at risk (Calves, 1999; Bruckner et al., 2004). Many adolescents who participated in the FGDs for males indicated that girls wanted sex "live" (without a condom) to prove that their partners were faithful. Female adolescents said that using contraceptives with their sexual partners was unacceptable. When asked how they would react if their boyfriends asked them to use contraceptives, some of the in-school female adolescents indicated that they would be unhappy because this would mean that the partner was unfaithful.

These findings showed that knowledge alone may not necessarily lead to contraceptive use. The Kenya Demographic and Health Survey of 2008-2009 also indicated that awareness of contraceptives was about 90 percent in all ages while use was only 39 percent (KNBS et al., 2010).

6.4 The Effect of Barrier Variables on Contraceptive Use

The barrier variables analysed in this sub-section are described in the conceptual framework. The results of the variables are presented in Model 3. The results showed that knowing the source of contraceptives, physical distance and services given within reasonable time had the expected statistically significant association with contraceptive use. All the other factors did not show a significant effect on the use of contraceptives.

Lack of knowledge of the source of contraceptives at the time when an adolescent needs to use them was considered a barrier. Adolescents who knew where to get contraceptives were 9.8 times more likely to use them than the adolescents who did not. Studies carried out elsewhere have found similar results (Casterline et al., 2001) which show that lack of knowledge on the sources of contraceptives is a barrier to use. Similarly, physical distance to the services was also confirmed as a barrier to contraceptive use among adolescents consistent with other studies in literature (Bertrand et al., 2001; Prince and Hawkins, 2007). As shown in Table 6.1, adolescents who indicated that the services were near enough were 2.6 times more likely to use contraceptives than those who did not indicate so. Finally, the waiting time to receive the services seemed to be another barrier to contraceptive use among adolescents. The results showed that adolescents who found services to be given within reasonable time were 6.2 times as

likely to use contraceptives as adolescents who indicated otherwise. Studies carried out elsewhere have found similar findings (Erulkar et al., 2005; Price and Hawkins, 2007) which show that time is an opportunity cost and short waiting time motivates adolescents to seek contraceptive services from a health facility.

Although availability of contraceptive methods, convenience of the clinic open hours, free services, friendliness of protocols and procedures were not significantly associated with contraceptive use, their association was in the expected direction. The results showed that adolescents who found availability of services important were more likely to use contraceptives (Table 6.1). Furthermore, adolescents who found clinic open hours convenient were more likely to use contraceptives than those who did not find clinic hours convenient. These results are consistent with other studies in the literature (Magnani et al., 2001; Erulkar et al., 2005; Price and Hawkins, 2007) which show that convenience in clinic opening hours affects contraceptive use among adolescents and that convenience is an important factor that contributes towards making facilities youth-friendly.

Similarly, adolescents who had access to free contraceptive services were more likely to use contraceptives than were adolescents who did not have access to such services. Many adolescents in the FGDs cited cost as a barrier and recommended free contraceptive services. The following are some of the quotes that illustrate how adolescents felt about costs of contraceptives:

> Janet: "If they sell it [contraceptive] at 50 shillings, someone tries to budget and sees that this 50 bob [shillings] can buy vegetables, cooking fat and fuel, they will not spend the 50 bob on condoms that they will use just for 15 minutes" (18-year-old out-of-school female adolescent in FGD).

Bernice: "I suggest that contraceptives should be free" (17-year-old out-of school female adolescent in FGD).

The cost of condom is not affordable by the youth...so we end up either borrowing from friends or stealing money or other items to sell" (19-year-old out-of-school male adolescent in FGD).

James: "There are some people from the slums who need to access that service [contraceptives and STI treatment] but they may not even manage to get 100 shillings...that is money that he [person seeking treatment] has really struggled to get. You have problems after problems and the cost should be lowered" (19-year-old male married adolescent in FGD).

Jacob: "When I want to use a contraceptive, I first think about cost. The price of condoms is 3 for 10 shillings. That is not affordable to many youths. But you can always borrow. Although those are of low quality, we use them most" (18-year-old out-of-school male adolescent in FGD).

The FGDs indicated that cost was a barrier to contraceptive use among adolescents. Similar findings are reported in other studies (Erulkar et al., 2005; Guttmacher, 2009) which show that cost of services affects consistent use of contraceptives among adolescents. It is possible that cost was not significant because of the presence of NGOs implementing reproductive health programmes that provide free contraceptives to adolescents in some low income areas in Nairobi.[4]

Adolescents were also more likely to use contraceptives if the service environment was friendly. Adolescents who found clinic protocols and procedures friendly were twice as likely to use contraceptives as those who did not. These results were consistent with other studies (Magnani et al., 2001; Harper et al., 2004; Erulkar et al., 2005; Price and Hawkins, 2007) which show that health facilities that are youth-friendly affect contraceptive use among adolescents.

[4] Most NGOs implementing reproductive health programmes in Nairobi are based in the urban slums and mainly focus on HIV/AIDS prevention.

6.5 Effects of the background variables in the presence of perceptions and barrier variables

The purpose of this analysis was to establish whether the intervening variables mediated the effects of the background variables on the use of contraceptives, as implied by the conceptual framework. If the effects of the background variables were reduced in the presence of the intervening variables, then we would conclude that the effects of the background variables were mediated by the intervening variables. However, if the effects of the background variables did not change or indeed attenuate, then we would conclude that the intervening variables do not mediate their effects. First, the results of the analysis of the background variables with the perception variables are presented and then those involving background variables with barrier variables. Finally, the results of the background variables with all the intervening variables are presented and discussed.

6.5.1 The effects of the background variables in the presence of perception variables

This sub-section discusses the results of the effects of background variables within the presence of perception variables. The results of the analysis are presented in Model 4. The results showed that perception factors modified effects of background factors on contraceptive use. Consistent with the theory (Bandura, 1986; Glanz et al., 2002; Pajares, 2002), effect of background factors on contraceptive use behaviour is influenced by the perception factors. Generally, the effect of background variables on contraceptive use decreased when perception factors were introduced in the analysis. For example, all the statistical significance observed among variables in Model 1 was lost in Model 4 except for adolescents living in Dagoretti Division. However, effect of living in Dagoretti on contraceptive use was also reduced in Model 4. This result shows that

perception variables greatly influenced background variables on contraceptive use among adolescents.

The background variables that lost their significance in Model 4 were age, sex, living arrangement, school attendance and source of sexuality information. The likelihood of using contraceptives observed in Model 1 also decreased among majority of background variables. For example, the likelihood of contraceptive use among adolescents in low socio-economic status households decreased from 1.559 in Model 1 to 0.674 in Model 4. These results showed that perceptions strongly reduced the effect of background factors on contraceptive use among adolescents.

In addition, the results showed that most variables with statistically significant effects on the use of contraceptives increased in Model 4 as compared to the results in Model 2. For example, when compared with sexual partners who did not communicate about contraceptives, the likelihood of using among those who communicated was 7 times more in Model 4 compared to 3.5 times among the similar group in Model 2.

However, compared with Model 2, perception variables in Model 4 reduced their effect on: ever heard of ways to prevent a pregnancy; knowledge of ways to prevent a pregnancy; knowledge of how contraceptives work in the prevention of pregnancy and HIV/AIDS; knowledge of the risks of unprotected sex and; opinion of adolescents on use of contraceptives. For example, the likelihood of using contraceptives among adolescents with knowledge of how a pregnancy can be prevented decreased from 1.160 in Model 2 to 0.531 among the same group in Model 4. This

result shows that background factors influence the effect of information and knowledge on contraceptive use among adolescents.

6.5.2 The effects of the background variables in the presence of barrier variables

This sub-section discusses the results of the effects of background variables in the presence of barrier variables. The results are presented in Model 5. The results showed that barrier factors had modifying effects on background factors. Generally, the effect of background variables on contraceptive use decreased when barrier factors were introduced in the model. For example, compared with females, the likelihood of using contraceptives decreased among males from 2.423 in Model 1 to 2.042 in Model 5. This result shows that barriers reduced the effect of background factors on contraceptive use among adolescents.

Although the barrier variables decreased the effect of background factors on use of contraceptives, there was an increased effect among adolescents living elsewhere, those whose most important source of sexuality information was other sources and those whose socio-economic status was low in Model 5 compared to Model 1. For example, compared with adolescents living with their parents, the likelihood of using contraceptives increased from 1.816 among adolescents who were living elsewhere in Model 1 to 2.215 in Model 5. This result confirms that barriers mediate effect of background factors on the use of contraceptives. The likelihood of using contraceptives also increased when the clinic opening hours were convenient and contraceptive methods were available. For example, the likelihood of using contraceptives among adolescents who found commodities readily available increased from 1.416 in Model 3 to

1.452 in Model 5. These results show that background factors played an important role in contraceptive use.

Although the effects of both, background and barrier variables decreased use of contraceptives in Model 5, the significance in variables observed in Model 1 and Model 3 were maintained. The effects of age, sex, living arrangement, administrative division, school attendance and most important source of sexuality information remained statistically significant in Model 5 as well. Barrier variables that maintained their significance continued to be: knowledge of source of contraceptives, physical distance and services provided within reasonable time.

6.5.3 The Effects of all the Study Variables

This sub-section discusses the results of all the variables included in the conceptual framework when analysed together. The results are presented in Model 6. Generally, the effect of background, perceptions and barriers diminished their effect on contraceptive use when all variables were introduced in one model.

Overall, the most statistically significant variable on the use of contraceptives in Model 6 was sexual partner communication. Adolescents who communicated with their sexual partner about contraceptives were 8.3 times more likely to use them than were those who did not do so; this was significant at $p<0.01$. Other significant variables among perception variables were: ability to get contraceptives for self, opinion of adolescents on contraceptive use and knowledge of how to use a contraceptive method. These variables were all statistically significant at $p<0.05$. None of the barrier variables were statistically significant. These results showed that sexual partner communication was very significant in determining contraceptive use among adolescents.

Only two among the background variables were statistically significant. Ever married adolescents and adolescents out of school were both statistically significant ($p<0.1$). The variable on ever married adolescents gained its statistical significance in Model 6. When compared with unmarried adolescents, the likelihood of using contraceptives among ever married adolescents decreased from 1.825 more likely to use contraceptives in Model 1 to 0.062 less likely to use in Model 6.

When all the variables were analysed together, background factors lost their statistically significant effects on contraceptive use among variables on: age, sex, living arrangement, administrative divisions and source of sexuality information. Barrier factors also lost their significant effect among variables on: knowledge of source of contraceptive methods, physical distance and when services were given within reasonable time. However, none of the perception factors lost their statistically significant effects on contraceptive use among adolescents. In addition, perception variables that were significant in Model 2 increased their effects on contraceptive use when background and barrier variables were analysed together. For example, the ability to get contraceptives for self increased its effect on the likelihood to use them from 2.6 times in Model 2 to 5.0 times more likely in Model 6. These results demonstrate that perceptions strongly influenced the effects of both background and barrier variables on contraceptive use in the study population.

When all variables were analysed together, age was the only variable among the background variables that increased its effect on contraceptive use. For example, when compared with adolescents who were 15 years old, the likelihood of using contraceptives among adolescents

aged 16 increased from 2.47 in Model 1 to 5.988 in Model 6. Likewise, only friendly protocols and free services variables increased their effect on contraceptive use among adolescents. These results demonstrate that when background, perceptions and barrier variables were present together, their effect generally decreased contraceptive use among adolescents.

The test of significance in the final model led to acceptance of three hypotheses and the rejection of three hypotheses as follows:

(i) Adolescents who had knowledge on how to use contraceptives were more likely to use contraceptives at $p< 0.05$. The finding supports the hypothesis that higher knowledge of how to use a contraceptive method is associated with higher levels of contraceptive use.

(ii) Sexual partner communication was statistically significant at the level of $P<0.001$, and therefore supported the hypothesis that Partner communication on contraceptives is associated with contraceptive use.

(iii) The test of significance for marital status was at $p<0.064$. This finding accepted the hypothesis that marital status is associated with higher contraceptive use.

(iv) Clinic protocols and friendly services were found to be statistically insignificant at $p<4.7$. The finding therefore rejected the hypothesis that supportive service environment that is youth friendly is associated with higher contraceptive use.

(v) The test of significance for knowledge of risks of unprotected sex was statistically insignificant at $p< 0.233$. The results therefore reject the hypothesis that higher knowledge of risks of unprotected sex is associated with increased contraceptive use.

(vi) The test of significance for parental approval was at $p< 2.0$. The result rejects the hypothesis that parental approval of contraceptive use is associated with higher contraceptive use.

Table 6.1: The odds ratios indicating background variables and the effects of explanatory variables of perceptions and barriers on contraceptive use, Nairobi, Kenya, 2010

Parameter		Background variables Model 1	Perception variables Model 2	Barrier variables Model 3	Background and perception variables Model 4	Background and barrier variables Model5	Background, perception and barrier variables Model 6
Age:	15 (r)						
	16	2.470	na	na	8.071	2.455	5.988
	17	2.022	na	na	0.239	1.555	0.186
	18	8.373***	na	na	1.215	6.024***	0.864
	19	18.134***	na	na	1.828	12.346***	1.624
Sex:	Female (r)						
	Male	2.423***	na	na	1.124	2.042***	0.965
Marital status:	Never married (r)						
	Ever married	1.825	na	na	0.167	1.710	0.062*
Living arrangement :	With parent (r)						
	With spouse	2.686	na	na	0.357	2.372	0.735
	Elsewhere	1.816**	na	na	0.781	2.215***	0.759
	Not stated	3.358	na	na	1.752	5.412	4.449
School attendance:	Attending school (r)						
	Not attending school	2.323**	na	na	2.948	2.027**	2.873*
	Not stated	0.710	na	na	0.601	0.791	0.945
Division lived in:	Embakasi (r)						
	Central	2.185	na	na	1.661	1.396	1.361
	Dagoretti	4.698**	na	na	5.673*	3.270**	4.060
	Kasarani	4.568*	na	na	0.458	2.592	0.317
	Kibera	1.813	na	na	2.345	1.634	1.984
	Makadara	0.0	na	na	0.0	0.0	0.0
	Pumwani	0.0	na	na	0.0	0.0	0.0
	Westlands	1.893	na	na	1.176	1.903	1.519
Most important source of sexuality information:							
	Teacher (r)						
	Parent	0.885	na	na	0.587	1.047	0.443
	Other sources	1.610*	na	na	1.582	1.647*	1.626
Socioeconomic status:	Medium (r)						
	High	1.043	na	na	1.060	1.032	0.969
	Low	1.559	na	na	0.674	1.950	0.756

Notes: r = reference category; na = not available; *** = p<0.01, ** = p<0.05, * = p<0.1; figures without asterisks are not statistically significant.

Table 6.1: Continued

Parameter	Background variables Model 1	Perception variables Model 2	Barrier variables Model 3	Background and perception variables Model 4	Background and barrier variables Model5	Background, perception and barrier variables Model 6
Ever heard of ways to prevent a pregnancy:						
No (r)						
Yes	na	58.056	na	41.632	na	56.507
Not stated	na	3.693	na	4.267	na	6.105
Knowledge of how a pregnancy can be prevented:						
No (r)						
Yes	na	1.160	na	0.531	na	0.584
Not stated	na	0.0	na	0.0	na	0.0
Knowledge of contraceptive methods:						
Knows 1-2 methods (r)						
No Knowledge	na	0.0	na	0.0	na	0..0
Knows 3 and above methods	na	1.912	na	2.427	na	2.823
Knows how to use a contraceptive:						
No (r)						
Yes	na	8.889*	na	20.539**	na	26.767**
Not stated	na	0.0	na	0.0	na	0.0
Knowledge of how contraceptives work in prevention of pregnancy and HIV/AIDS:						
Low (r)						
High	na	1.330	na	0.964	na	1.116
Moderate	na	0.936	na	0.602	na	0.555
Knowledge of risks of unprotected sex:						
No knowledge (r)						
High	na	0.537	na	0.283	na	0.233
Moderate	na	1.730	na	1.369	na	1.147
Knows source of contraceptives:						
No (r)						
Yes	na	1.077	na	1.567	na	1.406

Notes: r = reference category; na = not available; *** = p<0.01, ** = p<0.05, * = p<0.1; figures without asterisks are not statistically significant.

Table 6.1: Continued

Parameter	Background variables Model 1	Perception variables Model 2	Barrier variables Model 3	Background and perception variables Model 4	Background and barrier variables Model5	Background, perception and barrier variables Model 6
Parent approval to use contraceptives:						
Other response (r)						
Would object	na	1.404	na	1.650	na	1.790
Would not object	na	1.403	na	1.660	na	2.053
Opinion of adolescent to use contraceptives:						
Disapprove (r)						
Approve	na	0.444*	na	0.246*	na	0.208**
Can get contraceptives for self if wanted:						
No (r)						
Yes	na	2.604*	na	4.228*	na	5.021**
Not stated	na	3.592	na	6.004	na	7.445
Partner communication on contraceptive use :						
Never communicates (r)						
Communicates	na	3.572***	na	7.217***	na	8.316***
Not stated	na	0.0***	na	0.003***	na	0.002***
Would know source today if wanted to use: No (r)						
Yes	na	na	9.822***	na	5.907**	0.657
Methods available all the time would motivate:						
No(r)						
Yes	na	na	1.416	na	1.452	0.350
Convenient clinic hours would motivate:						
No (r)						
Yes	na	na	1.469	na	1.647	0.649
Free services would motivate:						
No (r)						
Yes	na	na	1.217	na	1.214	1.761
Distance near enough would motivate:						
No (r)						
Yes	na	na	2.567***	na	2.488***	1.463
Services within reasonable time would motivate:						
No (r)						
Yes	na	na	6.180***	na	4.407**	3.743
Friendly protocols/procedures would motivate:						
No (r)						
Yes	na	na	2.112	na	1.584	4.799
Privacy/confidentiality would motivate:						
No (r))						
Yes	na	na	0.711	na	0.685	0.502

Notes: r = reference category; na = not available; *** = p<0.01, ** = p<0.05, * = p<0.1; figures without asterisks are not statistically significant.

6.6 Summary and Conclusions

The multivariate logistic regression results showed that the perception and barrier variables had significant effects on the use of contraceptives among the adolescents. Generally, perception and barrier variables mediated the effect of background variables on contraceptive use. The perception variables with net statistically significant effects on contraceptive use were: knowledge of how contraceptives work, opinion of adolescent's approval of contraceptive use, ability to get contraceptives for self and sexual partner communication about contraceptives. The results showed that overall, sexual partner communication was the most significant determinant of contraceptive use among perception factors and among all other factors in Model 6. Adolescents who communicated with sexual partners were more likely to use contraceptives compared with those who did not communicate. However, barrier factors lost their net significance when all variables were introduced in the analysis. Among the background variables, only marital status and school attendance had net significance. Marital status gained significance and school attendance retained significance when all variables were introduced in the analysis.

The influence of intervening factors on background factors was consistent with perception formation theory and the effects of barriers on contraceptive use. In support of both perception formation theory (Bandura, 1986; Glanz et al., 2002; Pajares, 2002) and the sociological framework for understanding reproductive health behaviour theory (Price and Hawkins, 2007), adolescents develop values and knowledge from their immediate physical and social environment which in turn influence perception and the behaviour to seek services. However, barriers encountered during the process of seeking services affect contraceptive use and the

experiences adolescents obtain in the external environment during the period of seeking services influence perceptions on use. Consistent with theory (Price and Hawkins, 2007), the results from this study showed that even if an adolescent had a positive perception on contraceptive use, barriers experienced in the process of obtaining services influenced use. The results in this chapter were therefore used to describe the framework of contraceptive use outcomes among adolescents using the case study in Nairobi.

In conclusion, perception and barriers mediate the effects of background factors and the effects of background, perception and barriers on contraceptive use diminished when all factors were analysed in one model. However, variables that maintained their net significance that are mentioned above were all among perceptions which showed that perceptions played an important role in contraceptive use outcomes. Overall, perceptions variables in this study had stronger significant effects on contraceptive use compared with barrier variables when controlled for background factors. Perceptions with the most significant effects on contraceptive use among adolescents in Nairobi are sexual partner communication, ability to get contraceptives for self, opinion of adolescents to use contraceptives and knowledge of how to use contraceptives. In addition, although school and family were important sources of sexuality information, teachers and parents had negative perceptions and discouraged adolescents from using contraceptives.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter has four sections. The first section summarizes substance issues. The, second summarizes and discusses key findings in relation to the study objectives on perceptions, sexuality discussions held at home and in school and barriers to contraceptive use and conclusions. This is followed by a discussion on the policy and programme implications and suggests recommendations on how to influence positive perceptions and reduce barriers to contraceptive use in the third section. Lastly, areas for future research are suggested.

Previous studies in Kenya have focused on whether adolescents are sexually active, adolescent fertility, information and knowledge on contraceptives, contraceptive use among adolescents in high school and assessment of clinic based family planning practices. With an increase in adolescent fertility in the country, compounded by low contraceptive use, this study sought to determine perceptions and barriers of adolescents regarding use of contraceptives and how these perceptions and barriers influence contraceptive behaviour among adolescents 15-19 years. The study had three main objectives:

1) To establish and document perceptions that influence contraceptive use among adolescents aged 15-19 years;
2) To establish the nature and content of discussions on sexuality and contraceptive use held in schools and by family members and;
3) To identify barriers affecting the use of contraception among adolescents in school and out-of-school married and unmarried adolescents.

This study was carried out among male and female adolescents 15-19 years in 8 administrative divisions in Nairobi. The study used a household random sampling frame of the total projected population of adolescents based on the 1999 national census and the 2009 Kenya Demographic and Health Survey enumeration clusters. The sample size was determined through probability sample using normal distribution of 95 percent confidence level, a confidence interval of 3 and relative standard error of 10 percent. Both quantitative and qualitative data were used. The quantitative data were collected from a representative sample of 6,196 households. A total of 1,769 adolescents were sampled and 1,119 were interviewed.

Qualitative data were collected from adolescents, parents of the adolescents who participated in the study and from teachers who counselled students in schools where adolescents attended. Eight FGD sessions with adolescents and parents, 42 IDIs with teachers and 137 IDIs with parents were conducted. The bivariate analysis and multivariate data analysis were used to assess the combined effects of the intervening variables in predicting contraceptive use and in testing the study conceptual framework, study objectives and the study hypotheses. Qualitative data analysis was used to better understand perceptions on contraceptive use among parents, teachers and adolescents.

The study was guided by a conceptual framework modified from various other studies. The theory of reasoned action applied in the study explains how behaviour is influenced by one's belief that significant other people would not want unplanned pregnancy and by an individual's belief that a preferred action has a beneficial outcome. The framework demonstrates that

environment factors are important in shaping behaviour and that peers and parents influence sexuality behaviour of adolescents. The framework, however, suggests that convenience of location and perceptions of services at the health facilities are primary factors influencing contraceptive use among adolescent clients. The framework further explains that barriers to contraceptive use also arise from mechanisms and institutions that affect individuals accessing reproductive health services.

The key findings of the study were that contraceptive use in Nairobi is low and although over 90 percent of adolescents were aware of ways to prevent a pregnancy, only 8.6 percent used contraceptives. The results obtained showed that among socio-cultural factors, living arrangement, place of residence and sources of sexuality information significantly influenced contraceptive use. The test showed that perceptions on adolescent approval on contraceptive use, knowledge of how to use contraceptives, ability to get contraceptives for self and sexual partner communication significantly influenced contraceptive behaviour outcome. Parents were found to be the main source of sexuality education at home and teachers were the main overall source of sexuality information. Despite this, adolescents who received sexuality messages from peers and siblings were more likely to use contraceptives, probably because adolescents were freer to discuss contraceptive issues with their siblings and peers. Barriers to contraceptive use were found to be related to the process of obtaining services in support of Prince and Hawkins theory. Knowledge of the source, physical distance and providing services within reasonable time were also found to significantly affect contraceptive use.

7.2 Perception Factors Associated with Contraceptive Use

Key findings showed that perception factors influencing contraceptive use were: knowledge of how to use a contraceptive method, opinion of adolescents to use contraceptives, ability to get contraceptives for self and partner communication.

The results indicated that adolescents had the correct perceptions that their parents and guardians objected to contraceptive use. The results obtained indicated that parents and service providers had negative perceptions and discouraged adolescents from using contraceptives. The data showed that most adolescents were not able to get contraceptives when they wanted to use them, a finding similar to that of other studies. The adolescents also indicated that service providers discriminated against them on account of age and in some health facilities, providers demanded national identification cards, discouraging adolescents from seeking services.

Perception factors that were found to have net significant effect on contraceptive use were: knowledge of how to use contraceptives, opinion of adolescents to use contraceptives, ability to get contraceptives for self and sexual partner communication, all at the level of $p<0.05$. The logistic regression analysis also showed that partner communication had the most significant effect on contraceptive use ($p<0.01$) and therefore was a major determinant of use among all perception factors. Results of the regressions analysis demonstrated that disapproval did not deter use of contraceptives. Such contradictions on the values and practices of sexuality issues among adolescents are similar to those of other studies where adolescents, for example, indicated value for virginity but also said that premarital sex was acceptable.

The regression analysis results indicated that adolescents with knowledge of how to prevent a pregnancy were more likely to use contraceptives than adolescents with no knowledge. Knowing how a contraceptive method works was also found to have a statistically significant effect on the use of contraceptives. Ability to get contraceptive supplies for self had a significant effect on the use of contraceptives. Results of the regression analysis showed that adolescents with moderate knowledge of the risks of unprotected sex were more likely to use contraceptives than were those with no knowledge. The regression analysis also showed that adolescents with high knowledge about the risks associated with unprotected sex were less likely to use contraceptives than those with low knowledge. This inconsistency on the effects of levels of knowledge on risks of unprotected sex and contraceptive use has been observed in other studies.

7.3 The Nature and Content of Discussions on Sexuality and Contraceptive Use in Schools and by Family Members

Finding out about sexuality messages passed during the process of socialization at the family level and in school was important in understanding the effect of sexuality discussions by parents and teachers on contraceptive use. Key findings showed that the most important source of sexuality discussions is the teacher at 67.1 percent followed by other sources (peers and siblings), 17.5 percent and parents 15.3 percent. However, adolescents' narratives indicated that most of the discussions at home and in school did not focus on sexuality issues. Nevertheless, some of the adolescents listed content of sexuality information discussed at home and in school to include boy-girl relationship followed by HIV/AIDS, abstaining, STDs, menstruation, body development, contraceptives and abortion in that order. However, teachers and parents focused on discouraging adolescents from using contraceptives. Furthermore, sexuality discussion at home is not structured and it is introduced when something negative happened for example with

friends of the adolescents and therefore information passed by parents is more biased towards reprimanding and threats. Qualitative analysis shows that adolescents are freer to discuss sexuality issues and contraceptive use with their siblings and peers than with parents and teachers.

The analysis of sexuality discussions showed that the source of information had a significant association with contraceptive use as demonstrated in the bivariate analysis. Differentials of contraceptive use showed that the lowest number of adolescents who used contraceptives received sexuality information from teachers while most adolescents who used contraceptives received sexuality information from other sources (siblings and peers).

Similar to other studies, teachers had negative perceptions on contraceptive use by adolescents and they focused on telling their students not to engage in sexual activities. However, the teachers did not teach the risks of unprotected sex. Similar to other studies, parents were too shy to discuss sexuality issues with their adolescent children and they could not articulate issues of sexuality. Qualitative data analysis showed that parents had negative perceptions on contraceptive use by adolescents, a finding similar to that from other studies. Although parents and teachers agreed on the need to integrate sexuality topics in the school curriculum, they also indicated inadequacy in the knowledge and skills to discuss adolescent sexuality and reproductive health issues. Teachers also lacked teaching materials and time to discuss sexuality issues in school.

7.4 Barrier Factors Associated with Contraceptive Use

The key finding from the analysis showed that barrier factors with the strongest significant association with contraceptive use were: knowledge of source of contraceptives, availability of contraceptive methods, physical distance and services given within reasonable time.

Similar to other studies, not knowing where to get a contraceptive method at the time of need was a barrier to contraceptive use. Similar to other studies, provider bias was found to be a barrier. Analysis of the qualitative data showed that providers discriminated against adolescents seeking reproductive health services on account of their age. This finding shows the importance of making services environment friendly to adolescents. The results of the overall model of multivariate regression analysis, however, showed that barriers had no significant effects on contraceptive use. This finding demonstrated that barriers were strongly modified by perception and background factors.

7.5 Conclusions

In general, the study confirmed that both perceptions and barriers are important in the influence of contraceptive use among adolescents. Furthermore, the source of sexuality information has a role in the influence of contraceptive use. The study confirmed some of the findings from similar studies on factors associated with contraceptive use among adolescents. In addition, the use of higher level statistical procedures permitted a better understanding of the impact of intervening factors on contraceptive use among adolescents. The study confirmed findings from previous studies on the modifying effects of perceptions and barriers on background factors on the use of contraceptives among adolescents. Sexual partner communication was associated with

contraceptive use, similar to other studies. The test of significance on the final model of multivariate analysis supported three study hypotheses. The hypotheses were in association of higher contraceptive use with: higher knowledge of how to use contraceptive method, partner communication on contraceptives and marital status. The test of significance did not fully support and therefore rejected three study hypotheses. These hypotheses were in relation to the association of increased contraceptive use with: supportive service environment, parental approval and higher knowledge of risks of unprotected sex.

The findings of this study confirmed the importance of addressing the environmental factors that influenced perception on contraceptive use as a result of sexuality messages passed at the family level and in school. School teachers and parents lacked adequate knowledge and skills to communicate sexual and reproductive health issues. These findings demonstrated the importance of developing the capacity of teachers and parents to handle adolescent sexuality issues and pregnancy prevention to reduce negative perceptions on contraceptive use. The study findings also demonstrated the importance of knowing how contraceptives worked to influence contraceptive use among adolescents. Despite the existence of the adolescent policy in the country, the study showed that service providers had negative perceptions on contraceptive use by adolescents and they have continued to deny these youth services on account of age.

7.6 Policy Implications and Recommendations

The study showed that teachers were the main source of sexuality information among adolescents. However, teachers were found to have negative perceptions on contraceptive use by adolescents. These findings have implications on the role of the teacher in the influence of

population policy through providing comprehensive sexuality information in school. Integrating comprehensive information on sexuality with reproductive health information would enhance informed decision making on preventing unwanted pregnancy and on promoting healthy sexuality behaviour among adolescents. There is need therefore to build capacity of teachers to be able to pass accurate sexuality information to the adolescents in school and counsel them on responsible sexual behaviour.

7.7 Programme Implications and Recommendations

Several findings related to sexuality information, perceptions and barriers have programme implications. The study showed that parents had negative perceptions about contraceptive use by adolescents and adolescents whose parents did not object to use of contraceptives were more likely to use them. The quantitative data analysis showed that parents were a source of sexuality education at home. However, in the qualitative analysis, parents expressed lack of adequate knowledge on how to communicate sexuality issues to their adolescent children.

Since parents were one source of sexuality information, programmes should therefore strengthen parent–child communication on sexuality issues. Strategies to educate parents on adolescents' sexuality issues with age specific messages should also be developed. The study found that adolescents who received sexuality information from other sources were more likely to use contraceptives compared to adolescents who received sexuality information from teachers. Programmes should therefore expand channels of communication and messages on contraceptives through electronic and other media that are popular with adolescents.

Among perception factors, partner communication was found to affect contraceptive use. Adolescents who knew how to use contraceptives were more likely to use them than those who did not. These results have important implications for developing programmes that provide accurate information, educate adolescents on how contraceptives work and encourage sexual partner communication about contraceptive use.

Distance to the clinic was found to be associated with increased use of contraceptives and therefore there is a need to strengthen programmes that enhance availability of contraceptive information and services for adolescents at the community to reduce client costs in terms of resources and convenience. Service providers were found to discourage contraceptive use on account of age. These findings demonstrated the effects of provider bias on contraceptive use and therefore raise programme issues. There is need to improve service provider skills on quality adolescent sexual and reproductive health services that are youth-friendly.

7.8 Further Research

The study contributed to the knowledge gaps identified from the literature review as follows:
The study confirmed that perception and barriers influence contraceptive use and that perceptions are more significant in the influence of contraceptive use among adolescents compared to barriers through use of a conceptual framework developed for the study; the study identified the content of sexuality information given in school and at home and that parents and the teachers had negative perceptions about use of contraceptives by adolescents and that sexuality information given at home did not necessarily mean that parents were open and ready to discuss these issues with their children; the study confirmed that knowledge of how to use a contraceptive method was associated with increased use among adolescents and that knowing the

methods of contraceptives was not significant while knowing how to use them was statistically significant; parents and teachers had inadequacies in communicating sexuality issues to adolescents while service providers discouraged adolescents from using contraceptives.

This study showed that using both quantitative and qualitative data to link adolescents' information with their parents and teachers was important in crosschecking sexuality information discussed at home and in school as well as confirming perceptions on adolescent contraceptive use among parents, teachers and adolescents. Including males also enriched the study in understanding perceptions common among adolescent males and females. However, due to social anthropological desirability bias on sexuality discussions and the study conceptualization, it was not possible to determine the influence of specific sexuality messages on contraceptive use passed at home and in school by each adolescent studied. From the above finding, there is need for a follow-up studies in different settings to test the conceptual framework and the methodology in which data was collected and analyzed from the three sources. A follow-up study of sexuality messages passed at home and in school on the influence of contraceptive behaviour of individual adolescents is also recommended. The results from such a study could be used to develop age specific messages to guide development of comprehensive sexuality information. Programmes could use the results of such a research on age specific messages to develop training materials to guide parent–child communication and education on sexual and reproductive health issues. Service providers were found to have negative perceptions on contraceptive use among adolescents despite a policy and guidelines on reproductive health services to adolescents. To address negative perceptions by service providers, it would be important to follow-up the implementation of the "Adolescent Reproductive Health and

Development Policy" (MOH and NCAPD, 2003) and the existing family planning guidelines (MOH, 2005), to assess among service providers the existing myths and biases on contraceptive use directed at the adolescents. The findings could be used to develop appropriate messages to address misconceptions.

REFERENCES

Advocates for Youth Organization. 2007. "The Facts: Adolescent Protective Behaviours: Abstinence and Contraceptive Use." www.advocatesforyouth.or/publications/factsheet> Accessed Jan 10, 2008.

Agyei W. K.A. and Epema E. J. 1992. "Sexual Behaviour and Contraceptive Use Among 15-24 Year Olds in Uganda." *International Family Planning Perspectives* 18 (1):13-17.

Alauddin, Maclaren. 1999. "Reaching Newlywed and Married Adolescents." *Family Health International* July: 1-8.

Alford Sue, Nicole Cheetham and Debra Hauser. 2005. "Science and Success in Developing Countries: Holistic Programmes that Work to Prevent Teen Pregnancy, HIV and Sexually Transmitted Infections." *Advocates for Youth.* Washington DC, USA.

American Family Physician. 1990. "Contraceptive Use in Adolescents." *American Academy of Family Physicians*, September.

African Population and Research Centre (APHRC). 2002. "Population and Health Dynamics in Nairobi's Informal Settlements." *African Population and Research Centre,* April: Pp xiii-xxi.

Ayiemba E. H.O. 2001. "The effect of Health Education Programmes on Adolescents Sexual Behaviour: A case Study on Nairobi City Adolescents." *African Population Studies 16* (1) June: 87-103.

Baker G. K and Rich S. 1992. "Influences on Adolescent Sexuality in Nigeria and Kenya: Findings from Recent Focus Group Discussions." *Studies in Family Planning* 23 (3):199-219.

Bandura Albert. 1986. "Social Foundations of Thought and Action: A Social-Cognitive Theory". *Englewood Cliffs*, NJ: Prentice Hall. Pp. 617.

Bandura Albert. 2001. "Social Cognitive Theory: An Agentic Perspective". *Annual Review of Psychology 52*: 1–26.

Bertrand J. T., Hardee K., Magnani R. J. and Angle M. S. 1995. "Access, Quality of Care and Medical Barriers in Family Planning Programmes." *International Family Planning Perspectives* 21: 64-69 & 74-74.

Bertrand J. T., Eric Seiber, and Gabriela Escudero. 2001. "Contraceptive Dynamics in Guatemala." *International Family Planning Perspectives* 27(3): 112-118.

Biddlecom, A. Awusabo-Asare, K. and Bankole A. 2009. "Role of Parents in Adolescent Sexual Activity and Contraceptive Use in Four African Countries." *International Perspectives on Sexual and Reproductive Health* 35(2): 72-81.

Brown A.D. and Shireen J. 2001. "Sexual Relations Among Young People in Developing Countries: Evidence from WHO Case Studies." *WHO*: 1-47.

Brown Robert T. 2000. "Adolescent Sexuality at The Dawn of The 21st Century." *Adolescent Medicine, State of The Art Review* (2)1: 18-138.

Bruckner H. Martin A. and Bearman P.S. 2004. "Ambivalence and Pregnancy: Adolescents' Attitudes, Contraceptive Use and Pregnancy." *Perspectives on Sexual and reproductive Health* 36 (6):248-257.

Burnard P. 1991. "A Method of Analyzing Interview Transcripts in Qualitative Research." *Nurse Education Today* (6) 11: 461–466.

Calves A. E. and Mellon A.W. 1999. "Condom Use and Risk Perception among Male and Female Adolescents in Cameroon: Qualitative Evidence from Edea." *PSI Research Division working Paper*: Number 22, March.

Casterline John B., Sathar Zeba A., ul Haque, Minhaj. 2001. "Obstacles to Contraceptive Use in Pakistan: A Study in Punjab." *Studies in Family Planning* 32(2): 95-110.

Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro. 2004. "Kenya Demographic and Health Survey 2003." *Calverton, Maryland: CBS, MOH, and ORC Macro.*

Central Bureau of Statistics (CBS). 2001. "Population and Housing Census." *Republic of Kenya*, Nairobi.

Curtis, Siân L., Katherine Neitzel and Macro International. 1996. "Contraceptive Knowledge, Use and Source: Family Planning Comparative Reports." Measure. *Demographic and Health Surveys. Macro international Inc.*, USA.

Darobi Leila. 2002. "Crucial Contraceptive Information and Services not Reaching Asian Adolescents: Nine Country Analysis." *Focuses on Contraceptive Needs of Young Married Women*: December.

Daryl J. Bem. 1972. "Self-Perception Theory: Advances in Experimental Social Psychology." *Academic Press, Inc.*, New York and London. Vol. 6.

de Belmonte L.R., Gutierrez E.Z., Magnani R. and Lipovsek V. 2000. "Barriers to Adolescents' Use of Reproductive Health Services in Three Bolivian Cities, Washington DC." *Focus on Young Adults/Pathfinder International*: January.

Derrel Wilson. 2000. "Selective Perception". http://www.ciadvertizing.org> Accessed February 15, 2009.

Easterlin R.A. and Crummins E.M. 1985. "The Fertility Revolution: Theoretical Framework." *Chicago University Press, Inc.*, Chicago. Vol. 1:12-31.

Erulkar A.S., Linus I.A., Ettyang, Charles Onoka, Fredrick K., Nyaga, and Alex Muyonga. 2004. "Behaviour Change Evaluation of a Culturally Consistent Reproductive Health programme for Young Kenyans." *International Family Planning Perspectives* 30 (2): 58-67.

Erulkar A.S., Onoka C.J. and Phiri A. 2005. "What is Youth Friendly Adolescent's Preferences for RH Services in Kenya and Zimbabwe." *Africa Journal of Reproductive Health* 9(3):51-58.

Family Health International. 1993. "Pakistan's Low Contraceptive use Tied to Medical Issues." *Network*; 13: 24-26.

Family Health International. 2011. "Youth Friendly Services." *YouthNet:* http://www.fhi.org/en/Youth> Accessed May 11, 2011.

Fishbein M. and Ajzen. 1980. "Understanding Attitudes and Predicting Social Behaviour." *Englewood Cliffs: NJ.* Preventive-Hall, Inc.

Fikree F. F., Khan A., Kadir M. M., Sajan F., Rahbar M. H. 2001. "What influences Contraceptive Use Among Young Women in Urban Squatter Settlements of Karachi in Pakistan." *International Family Planning Perspectives* 27 (3): 130-136.

Sonenstein F.L., The Urban Institute Howard Goldberg, Center for Disease Control Gontran Lamberty, Maternal and Child Health Bureau Susan Newcomer, National Institute of Child

Health and Human Development Warren Miller, and Transnational Family Research Institute.1997. "Fertility Motivation, Decision Making, and Intention to Engage in Sex, Contraception, Pregnancy, Abortion and Birth." *Urban Institute*, Washington, DC, January: 16-17.

Gage A. J., Brandson and Dominique Meeker. 1993. "Sex, Contraception and Childbearing Before Marriage in Sub-Saharan Africa." *International Family Planning Perspectives* 19 (1): 14-18.

Gage A.J. 1998. "Sexual Activity and Contraceptive Use: The components of the Decision making Process." *Studies in Family Planning* 29 (2): 154-166.

Gilchrist L. D., & Schinke S. P. 1983. "Coping with Contraception: Cognitive and Behavioural Methods with Adolescents." *Cognitive Therapy and Research* 7: 379-388.

Gupta N. and Leite U.C. 1999. "Adolescent Fertility Behaviour: Trends and Determinants in Northern Brazil." *Family Planning Perspectives* Vol.25, No. 3.

Glanz K., Rimer, B.K., Lewis F.M. 2002. "Concepts of the Social Cognitive Theory Health Behaviour and Health Education: Theory, Research and Practice." *San Francisco: Wiley and Sons,* 176-177.

Guttmacher Institute. 2009. "A real-Time Look at the Impact of the Recession on Women's Family Planning and Pregnancy Decisions." September. http://www.guttmacher.org> Accessed September 29, 2010.

Haberland Change E.I. 2005. "Early Marriage and Adolescent Girls." *Youth lens on Reproductive Health and HIV/AIDS.* Arlington, August 15: 1-4.

Hall P.A., Maxine H., Simon B. S. 2004. "Risk Adolescent Sexual Behaviour: A psychological Perspective for Primary Care Clinicians." *Advanced Practice Nursing Journal* 4 (1). Medscope.

Haque M.R. and Soontharndhada. 2009. "Risk Perception and Condom Use Among Thai Youths: Findings from Kanchanaburi Demographic Surveillance Systems Site in Thailand." *Journal of Health Population and Nutrition* 27 (6): 772-783.

Harper C. Lisa, Raine C.T., Philip M.B. 2004. "Adolescent Clinic Visits for Contraception: Support from Mothers, Male Partners and Friends." *Perspectives on Sexual and Reproductive Health. January-February* 36 (1): 20-26.

Hermann Von Helmholtz.1821. "Perceptions, Unconscious Influence". http://www.answers.com/perception> Accessed December 5, 2008.

Hulton L.A., Rachael C. Symons W.K. 2000. "Perceptions of the Risk of Sexual Activity and Their Consequences Among Ugandan Adolescents." *Studies in Family Planning* 31: 35-46.

Ikamari L.D.E. and Towett R. 2007. "Sexual Initiation and Contraceptive Use among Female Adolescents in Kenya." *Africa Journal of Health Science* 14:1-13.

Impact: Population Reference Bureau (PRB). 1998. "Contraceptive Safety." *Population Reference Bureau*, Washington DC, May: 2-3.

Israel G.D. 2009. "Determining Sample size." *Department of Agricultural Education and Communication, and Extension Specialist, Programme Evaluation and Organizational Development*. University of Florida, Gainesville.32611. http://www.edis.ifas.ufl.edu>Accessed April 10, 2010.

Izugbara C.O and Undie C. 2008. "Masculinity Scripts and the Sexual Vulnerability of Male Youth in Malawi." *International Journal of Sexual Health* 19; 20(4) Pp 2-12.

Izugbara C.O. 2007. "Home-Based Sexuality Education: Nigeria Parents Discussing Sex With Their Children." *Sex Education* 39(4): 575–600.

Izugbara C.O. 2008. "Home-Based Sexuality Education: Nigeria Parents Discussing Sex With Their Children." *Youth and Society* 4(1): 63–79.

Jain A. 1992. "Setting Standards of Quality Family Planning Programmes." *Studies in Family Planning* 6: 392-394.

Jaccord J. and Patricia J. D. 2000. "Adolescent Perceptions of maternal Approval of Birth Control and Sexual Risk Behaviour." *America Journal of Public Health* 90: 1426-1430.

Janz and Becker. 1984. "Health Brief Model: A Decade later." *Health Education* 11(1): 1-47.

John Hopkins School of Public health: 1995. "Population Reports: Meeting the Needs of Young People." *John Hopkins School of Public health*. Baltimore, Maryland.

Jick T. D. 1979. "Mixing Qualitative and Quantitative Methods: Triangulation in Action." *Administrative Science Quarterly* 24(4), 602-611.

Kabiru C. W. and Orpinas P. 2009. "Factors Associated with Sexual Activity Among High School Students in Nairobi." *Journal of Adolescence* 32 (4), 1023-1039.

Kenya National Bureau of Statistics (KNBS) and ICF Macro. 2010. "Family Planning" *Kenya Demographic and Health Survey 2008-2009*. Calverton, Maryland: KNBS and ICF Macro, 57-76.

Kenya National Bureau of Statistics (KNBS). 2010. "Population and Housing Census." *Republic of Kenya*, Nairobi.

Kenya National Bureau of Statistics (KNBS). 2007. "Kenya Facts and Figures." *Republic of Kenya*, Nairobi.

Kenyatta, J. 1995. "Facing Mount Kenya: The Traditional Life of the Kikuyu." *General printers Ltd.* 155-160.

Khamasi J.W Undie C. 2008. "Teaching Human Sexuality in Higher Education: A Case From Western Kenya." *Gender, Sexuality and Development.* Sense Publishers, Chapter 12: Pp 185-196.

Kiragu K. and Zabin L.S.1995. "Contraceptive Use Among High School Students in Kenya." *International Family Planning Perspectives* 21: 108-113.

Klepinger D.H. Lundberg S. Plotnick R. 1995. "Adolescent Fertility and the Educational Attainment of Young Women." *Family Planning Perspective* 27(1):23-28.

Koenig M.A., Hossain M. B. and Whittaker M. 1997. "Influencing of Quality of Care Upon Contraceptive Use in Rural Bangladesh." *Studies in Family Planning* 28 (4): 278-89.

Kristin N., Magnani R.J. and Katherine B. 1999. "The Effects of Youth-Friendly Service Projects on Service Utilization Among Youth in Lusaka, Zambia." *Focus on Young Adults*, Washington, D.C.

Krieger R.A and Casey M.A. 2000. "Focus Groups: A Practical Guide for Applied Research." *Sage Publications, Inc.* New Delhi, Third Edition.

Ladipo A.O. Douglas N. Paxman J.M. and Otolorin E.O. 1986. "Sexual Behaviour, Contraceptive Practice and Reproductive Health among Nigerian Adolescents." *Studies in Family Planning* 17 (2):100-106.

Laurie F. DeRose, Nii-Amoo Dodoo, F. Alex C. Ezeh and Tom O. Owuor. 2004. "Does Discussion of Family Planning Improve Knowledge of Partner's Attitude Toward Contraceptives." *International Family Planning Perspectives* 30 (2): 87-93.

Levinson R.A. 1995. "Reproductive and Contraceptive Knowledge, Contraceptive Self-efficacy and Contraceptive Behaviour Among Teenage Women." *Adolescence* 30 (117):65-85.

Li-Wei Chao. 2002. "A comparison of Consensus and Non-consensus approaches to Modeling Contraceptive Choice Behaviour." *Health Economics* 11: 599-622.

Madise N. Zulu E. and Ciera J. 2007. "Is Poverty a Driver of Risky Sexual Behaviour: Evidence From National Surveys of Adolescents in Four African Countries." *Africa Journal of Reproductive Health* 11 (3): 83-98.

Magnani R.J., Gaffikin L., de Aquino E.M., Seiber E.E. Almeida M.C., Lipovsek V. 2001. "Impact of an Integrated Adolescent Reproductive Health in Brazil." *Studies in Family Planning* 32 (3): 230-243.

Maja TMM.2007. "Factors Impacting on Contraceptive Use Among Youth." *University of Johannesburg.*

Mitika-Tyndale E. and Tenkorang E.Y. 2010. "A Multilevel Model of Condom Use Among Male and Female Upper primary School Students in Nyanza, Kenya." *Social Science and Medicine* 71 (3): 616-625.

Meekers D. and Klein M. 2002. "Determinants of Condom Use Among Young People in Urban Cameroon." *Studies in Family Planning* 33 (4): 335-346.

Ministry of Health. 2005. "Family Planning Guidelines for Service Providers: Services for Adolescents." *Division of Reproductive Health*; March: 30-31.

Missie L. Oindo. 2002. "Contraception and Sexuality Among the Youth in Kisumu, Kenya." *Africa Health Science* 2(1): 33-39.

Moore K.A, Sugland B. W.. 1997. "Using Behavioural Theories to Design Abstinence Programmes." *Children and Youth Services Review*. Vol. 19. No.5/6 Pp. 485-500. (http://www.aei.org/sw/swK.A. Mooresugland.htm> Accessed April 10, 2008.

Muganda-Onyando R. Agwanda A.T. Khasakhala A. Rae G. O. 2003. "Improving Adolescent Reproductive Health Programmes in Africa: Lessons from Kenya." *Centre for The Study of Adolescence*; Nairobi, Kenya. Pp 23-31.

Nahar Q. Tuñón, Houvras C.I., Gazi R., Reza M., Huq N., Khuda B. 2000. "Knowledge Attitudes and Practice of Adolescents Relating to Contraceptive Use," *12 Annual Scientific Conference in Bangladesh.*

National Coordinating Agency and Population Development and Ministry of Health. 2003. "Adolescent Reproductive Health and Development Policy." *Republic of Kenya*. Pp 1-37.

National Coordinating Agency and Population Development (NCAPD) [Kenya], Ministry of Medical Services (MOMS) [Kenya], Ministry of Public Health and Sanitation (MOPHS) [Kenya], Kenya National Bureau of Statistics (KNBS) [Kenya], ICF Macro. 2005. "Kenya Service Provision Assessment: Maternal & Child Health, Family Planning and STI." *Republic of Kenya*. Nairobi, Kenya. Pp 146.

National Coordinating Agency and Population Development (NCAPD) [Kenya], Ministry of Medical Services (MOMS) [Kenya], Ministry of Public Health and Sanitation (MOPHS) [Kenya], Kenya National Bureau of Statistics (KNBS) [Kenya], ICF Macro. 2010. "Kenya Service Provision Assessment: HIV/AIDS Services." *Republic of Kenya, Nairobi*. Kenya. Pp 190.

National Coordinating Agency and Population Development (NCAPD) [Kenya], Ministry of Medical Services (MOMS) [Kenya], Ministry of Public Health and Sanitation (MOPHS) [Kenya], Kenya National Bureau of Statistics (KNBS) [Kenya], ICF Macro. 2011. "Kenya Service Provision Assessment Survey 2010." Nairobi, Kenya: *National Coordinating Agency and Population Development, Ministry of Medical Services, Ministry of Public Health and Sanitation, Kenya National Bureau of Statistics, and ICF Macro.*

National Council for Population and Development (NCPD), Central Bureau of Statistics (CBS) (Office of the Vice President and Ministry of Planning and National Development) [Kenya], and Macro International Inc. (1989, 1993, 1998). "Kenya Demographic and Health Survey." *Calverton, MD: Macro International Inc.*

National Council for Population and Development (NCPD). 1977. "Reproductive Health Communication in Kenya: Results of a National Information, Education and Communication Situation Survey." *Republic of Kenya*, Nairobi. Kenya.

National Council for Population and Development. 1996. "Sessional Paper Number One on National Population Policy for Sustainable Development." *Republic of Kenya*, Nairobi. Kenya.

National Information for Policy, research and Decision making. 2008. http://www.nss.gov.au/home.NSF/pages/sample+Size+Calculator+Description> Accessed November 10, 2008.

National Statistical Service and Sample size calculator. http://www.surveysystem.com/ssscalc.htm> Accessed October 3, 2009.

Ndhlovu L., Julie S., Robert M., Kate M. and Achola O. 1997. "An Assessment of Clinic Based Family Planning Services in Kenya: Results from the 1995 Situation Analysis Study." *Population Council's Africa Operations Research and Technical Assistance*, Nairobi, Kenya. pp 19-28.

Njau W. P. and Radney S. 1995. "Adolescence in Kenya: The Facts." *Centre for the Study of Adolescence*, Nairobi, Kenya.

Oni T.T., Prinsloo E.A.M., Nortje J.D. and G. Joubert G. 2005. "High School Students, Practices and Knowledge of Contraception in Jozini, KwaZulu-Natal". *South Africa Family Planning Practice* 47 (6): 54-57.

Otoide V. O., Oronsaye F. and Okonofua F.E. 2001. "Why Nigerian Adolescents Seek Abortion Rather than Contraception: Evidence from Focus Group Discussions." *International Family Planning Perspectives* 27(2):77-81.

Pachauri S. and Santhya .K.G. 2002. "Reproductive Choices For Asian Adolescents: A focus on Contraceptive Behaviour." *International Family Planning Perspectives* 28 (4): 186-195.
Poopak Taat. 2000. "Opinion, Stereotypes and Perceptions." *The Iranian*, Washington D.C. August 2.

Prince N.L and Hawkins K. 2007. "A conceptual Framework for Social Analysis of Reproductive Health." *Journal of Health Population Nutrition* 25 (1): 24-36.

Rosenstock, I. M., Becker, M.H., Kirscht, Strecher, V.I. 2001. "Health Brief Model. MSU Cares." *Mississippi State University*. http://msucares.com/health/health/appa1.htm> accessed November 13, 2006.

Rwenge M. 2000. "Sexual Risk Behaviour Among Young People in Bamenda, Cameroon." *International Family Planning Perspective* 26(3): 18-123.

Ryan S., Franzetta K., Manlove J. and Holcombe E. 2007. "Adolescents' Discussions About Contraception or STD with Partners Before First Sex." *Perspective Sex Reproductive Health* 39 (3): 149-57.

Ryan S., Franzetta K., Manlove J. and Holcombe E. 2007. "Knowledge, Perceptions and Motivation for Contraception: Influence on Teens' Contraceptive Consistency." *Youth and Society* 39 (2):182-208.

Schwello J, Finger W. and Barker G. 2005. "Boys and Changing Gender Roles." *Youthlens on Reproductive Health and HIV/AIDS*. Arlington. August; (16): 1-4.

Sohail Agha. A 2002. "Quasi-Experimental Study to Assess the Impact of Four Adolescent Sexual Health Interventions in sub-Saharan Africa." *International Family Planning Perspectives* 28 (2): 67-70 & 113-118.

Speizer I.S., Mullen and Amegee, K .2001. "Gender Differences in Adult Perspectives on Adolescent Reproductive Behaviour: Evidence from Lome Toga." *International Family Planning Perspectives* 27 (4): 178-185.

Tesot J. 2005. "Teenage Pregnancy Crisis: The Big Issue." *East African Standard*. March; 12, Pp.1.

Twa-Twa J.M. 1997. "The Role of the Environment in the Sexual Activity of School Students in Tororo and Pailisa Districts in Uganda." *Health Transition Review, Supplement*. Vol. 7:67-81.

Undie C. Crichton C.J., Zulu E. 2007. "Metaphors We Love By: Conceptualizations of Sex Among Young People in Malawi." *Africa Journal of Reproductive Health* 11(3); 221-235.

United Nations Economic and Social Commission for Asia and the Pacific: 2006. "*Asian Population Studies Series*." No. 156.

United Nations Population Fund. 1994. "International Conference on Population and Development." *United Nations*; Sep: 52-53.

United Nations Population Fund: 2001. Population Issues: Briefing Kit. *United Nations Population Fund.* Pp 9-17.

YouthNet. 2010. "Youthlens on Reproductive Health and HIV/AIDS." http://www.path.org/publications/pub.php?id=860> Accessed December 4, 2010.

Whitley B.E and Schofield J.W. 1986. "A Meta Analysis of Research on Adolescent Contraceptive Use." *Population and Environment.* Vol. 8 (3 &4). Human Science Press. Indiana, USA.

Wingood G., Ralph J., Harrington K. Edward W., Kim M. 2001. "Exposure to X-Rated Movies and Adolescents' Sexual and Contraceptive-Related Attitudes and Behaviours." *Paediatrics*: Vol. 107 (May) pp. 1116-1119.

World Health organization (WHO). 1997. "Communicating Family Planning in Reproductive Health." *WHO,* Geneva.

Woog Venessa. 2003. "Annotated Bibliography on HIV/AIDS and Youth in Sub-Saharan Africa: Occasional Report." *The Alan Guttmacher Institute* (10):1-10.

Zulu E.M., Dodoo F.N., Chika-Ezee A. 2002. "Sexual Risk-taking in the Slums of Nairobi, Kenya." *Population Studies* 56: 311-323.

Appendix 3.1: List of households and adolescents sampled from DHS clusters and enumeration areas in Nairobi

No.	Serial	Cluster Number	DIVISION NAME	LOCATION NAME	SUB_LOC NAME	EANAME	# of house holds	Est # adolescents by total household
16	19	1263	CENTRAL	MATHARE	MATHARE	VILLAGE 2	60	26
17	2	1267	CENTRAL	HURUMA	HURUMA	HURUMA	63	27
18	15	1347	DAGORETTI	KAWANGWARE	KAWANGWARE	CENTRE/CIUGUINI	114	49
19	51	1351	DAGORETTI	KENYATTA/GOLF C	KENYATTA	UPPER HILL	173	74
20	24	1293	EMBAKASI	MUKURU KWA NJEN	MUKURU KWA NJENGA	MUKURU KWA NJENGA	247	106
21	7	1297	EMBAKASI	KAYOLE	KAYOLE	KAYOLE	90	39
22	43	1301	EMBAKASI	NJIRU	MAILI SABA	MAILI SABA	75	32
1	41	1289	KASARANI	KASARANI	MWIKI	KARURA	88	38
2	34	1355	KIBERA	LANGATA	HARDY	HARDY ESTATE	18	8
3	17	1359	KIBERA	KAREN	KAREN	COLLEGE	92	40
4	53	1363	KIBERA	MUGUMOINI	MUGUMOINI	THOMAS BARNADOS	163	70

						HOME		
5	36	1367	KIBERA	LAINI SABA	NYAYO HIGHRISE	HIGHRISE	285	123
6	38	1271	MAKADARA	MARINGO	OFAFA MARINGO	OFAFA I	140	60
7	9	1309	PUMWANI	EASTLEIGH NORTH	EASTLEIGH NORTH	EASTLEIGH NORTH	61	26
8	45	1315	WESTLANDS	PARKLANDS	SPRING VALLEY	SPRING VALLEY	77	33
9	28	1319	WESTLANDS	KITISURU	KYUNA	KYUNA ESTATE	122	52
10	11	1323	WESTLANDS	HIGHRIDGE	KARURA	KARURA	249	107
11	47	1327	WESTLANDS	HIGHRIDGE	HIGHRIDGE	HIGHRIDGE	195	83
12	30	1331	WESTLANDS	KANGEMI	KANGEMI	MARENGA	200	86
13	13	1337	WESTLANDS	KILIMANI	KILELESHWA	KILIMAMBOGO	288	124
14	49	1341	WESTLANDS	LAVINGTON	MUTHANGARI	RIVERSIDE PARK	323	139
15	32	1343	WESTLANDS	LAVINGTON	MAZIWA	RUSINGA	238	103
Total							3361	1445

Source: Adopted from KNBS (2010).

Appendix 3.2: Household listing form

Date: .....
Division.....
Location.....
Sub-location.....
E.A number .....
E.A Cluster Name.....
House Hold No. .....

Interviewer: .....

HOUSEHOLD LISTING

LINE NO.	NAME OF RESIDENTS IN THE HOUSEHOLD	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	AGE	NAME OF SCHOOL BEING ATTENDED	ELIGIBLE FEMALES	ELIGIBLE MALES	TOTAL PERSONS IN HOUSEHOLD
	(Start from the eldest to the youngest)	CHECK CODES		(Born between July 1989 and March 1994) 15-19 yrs old		[ ]	[ ]	[ ]
01		[ ][ ]	M F 1 2	IN YEARS [ ][ ]		01	01	
02		[ ][ ]	1 2	[ ][ ]		02	02	

03			1 2			03	03	

CODES
01 = HEAD
02 = WIFE/HUSBAND
03 = SON OR DAUGHTER
04 = SON-IN-LAW OR DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER OR SISTER
09 = OTHER RELATIVE
10 = ADOPTED/FOSTER/STEPCHILD
11 = NOT RELATED
98 = DON'T KNOW

Listing completed: Day one Day two Day three

Appendix 3.3: Results of household listing, adolescent respondents and parents interviewed: January to April 2010

No.	Serial	Cluster Number	Division number	EANAME	Total Households enumerated	# households with	Males	Females	Total	Expected sample	Random starting household number	Cluster household random number	Actual # of adolescents interviewed	# of parents for in-depth interviewed
16	19	1263	CENTRAL	VILLAGE 2	99	22	5	24	29	20	5	CUJ 028	20	4
17	2	1267	CENTRAL	HURUMA	149	33	12	27	39	26	4	CUJ 016	26	5
18	15	1347	DAGORETTI	CENTRE/CIUGUINI	169	36	18	24	42	28	9	CUJ 015	28	4
19	51	1351	DAGORETTI	UPPER HILL	156	24	11	20	31	21	13	CUJ 007	21	2
20	24	1293	EMBAKASI	MUKURU KWA NJENGA	156	23	8	18	26	18	3	CUJ 010	18	3
21	7	1297	EMBAKASI	KAYOLE	3,366	842	420	650	1070	726	700	CUJ 182	709	73
22	43	1301	EMBAKASI	MAILI SABA	150	33	22	15	37	25	27	CUJ 126	25	4
1	41	1289	KASARANI	KARURA	144	23	11	16	27	18	11	CUJ 059	18	3
2	34	1355	KIBERA	HARDY ESTATE	29	2	0	3	3	2	2	CUJ 016	2	1
3	17	1359	KIBERA	COLLEGE	17	10	2	12	14	9	5	CUJ 008	9	2
4	53	1363	KIBERA	THOMAS BARNADOS HOME	176	45	25	38	63	43	13	CUJ 033	43	3
6	38	1271	MAKADARA	OFAFA I	252	40	28	26	54	37	25	CUJ 090	37	3

7	9	1309	PUMWANI	EASTLEIGH NORTH	109	40	18	49	67	45	24	CUJ 070	31	2
8	45	1315	WESTLANDS	SPRING VALLEY	29	1	1	0	1	1	1	CUJ 012	1	0
9	28	1319	WESTLANDS	KYUNA ESTATE	142	36	20	23	43	29	21	CUJ 056	29	4
10	11	1323	WESTLANDS	KARURA	169	35	12	36	48	33	12	CUJ 039	33	3
11	47	1327	WESTLANDS	HIGHRIDGE	102	13	2	11	13	9	3	CUJ 030	9	2
12	30	1331	WESTLANDS	MARENGA	147	25	8	21	29	20	23	CUJ 137	20	4
13	13	1337	WESTLANDS	KILIMAMBOGO	85	25	5	26	31	21	9	CUJ 027	21	3
14	49	1341	WESTLANDS	RIVERSIDE PARK	170	26	8	23	31	21	19	CUJ 129	21	5
15	32	1343	WESTLANDS	RUSINGA	179	23	11	21	32	22	11	CUJ 052	22	3
				Totals	6,197	1388	659	1110	1769	1200			1169	136
				Total expected sample						1,200				

Appendix 3.4: Individual respondent questionnaire

The reproductive health survey is a sample survey to be carried out in Nairobi among adolescents 15-19 years. The survey is designed to provide information on contraceptive use among adolescents, their perceptions and constraints in Nairobi. The survey will involve interviewing a randomly selected group of adolescents aged 15-19 years. The adolescents were asked questions about their background, socioeconomic, socio cultural environment that includes sexuality information, social demographic information, and knowledge of contraceptives, perceptions, and history of contraceptive use, environment information where contraceptives are provided and barriers experienced. Information generated was helpful to policy makers and managers in reproductive health and family planning field.

Identification

Division.....

Location.....

Sub-location.....

EA I.D. number.....

EA Cluster name.....

EA court/sector name where applicable in Embakasi /Kayole (1297) ----------

House hold code

Participant gender

Questionnaire Number

		M		**F**	

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE INTERVIEWER'S NAME RESULTS***				DAY.... MONTH... YEAR ... RESULT
NEXT VISIT: DATE TIME				

*** RESULT CODES

1. Completed
2. No household member at home or no respondent at home at time of visit
3. Entire household absent for extended period of time
4. Postponed
5. Refused
6. Dwelling vacant
7. Dwelling destroyed
8. Other

Introduction and Consent

Hello, my name is ----------and we are conducting this study from the University of Nairobi, Population Studies and Research Institute. The survey is about youth reproductive health behaviour and we would very much appreciate your participation in this survey. I would like to ask you some questions about yourself and your family. The interview will take about 10-15 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons. We would like you to give us your consent to continue with the interview.

Do you have any questions about the survey? I hope you will agree to participate in the interview. But if you decide not to, it is your right and I will respect your decision. May I begin the interview now?

SIGNATURE OF INTEERVIEWER----------DATE……

NO	SECTIONS: QUESTIONS AND FILTER	CODING CATEGORIES	SKIP
	SECTION A: RESPONDENT'S BACKGROUND		
101	First I would like to ask some questions about you and your household. For the first time until you were 12 years old, did you live in Nairobi, Mombasa, in another city or in the country side?	Nairobi/Mombasa/Kisumu……= 1 Other City/Town……= 2 Countryside……= 3 Outside Kenya……= 4	
	How long have you been	Years_____	If visitor in

102	living continuously in Nairobi?	Always .....= 95 Visitor in Nairobi.....= 96	Nairobi terminate interview
103	In what month and year were you born?	Month_____ Does not know month.....= 98 Year_____ Does not know year.....= 99	
104	How old were you at your last birthday? (Compare and correct 3 if inconsistent) (If above 19 years or below 15 years, should not proceed since respondent is above target group)	(Age in completed years) 14 and below.....= 1 15.....= 2 16.....= 3 17.....= 4 18.....= 5 19.....= 6	
105	Have you ever attended school?	Yes.....= 1 No.....= 2	**If no, skip to Q# 108**
106	What level of school attended: Primary, vocational, secondary, or higher	Nursery/Kindergarten.....= 0 Primary.....= 1 Post-primary/vocational.....= 2 Secondary level.....= 3 College/Midlevel).....= 4	
	a) Are you currently in	a)Yes.....= 1	**If yes skip**

107	school? b) What is the highest (standard/form/year) you completed at that level?	If yes, what level_____ No.....= 2 If no what is the highest level completed? b) Standard/Form/year_____	to Q # 108
108	How important is religion in your life?	Very important.....= 1 Not very important.....= 2 Not important.....=3	
109	What is your religion	Roman catholic.....= 1 Protestant/other Christian.....= 2 Muslim.....= 3 No religion.....= 4 Other (specify).....= 96	
110	What is your ethnic group/tribe?	Luhya.....= 1 Kamba.....= 2 Kikuyu.....= 3 Luo.....= 4 Kisii.....= 5 Asian.....= 6 Kalenjin.....= 7 Masai.....= 8 Meru/Embu.....= 9 Mijikenda/Swahili.....= 10 Somali.....= 11 Taita/Taveta.....= 12 Other _____ .....= 96 (Specify)	

	B: SECTION B: SOCIO-ECONOMIC		
201	As you know, some parents/guardians take up jobs which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you or your guardian currently doing any of these things or any other work ?	Yes.....= 1 No.....= 2	
202	Can you describe the house you or your parents live in (Ask question and use observation)	**a) Do you and your siblings have a separate room to sleep** Yes.....= 1 No.....= 2 **b) Do you yourself live and sleep here** Yes.....= 1 No.....= 2 **c) Main material of the house floor** Earth/mud/dung/sand.....= 1 Wood planks.....= 2 Palm, bamboo.....= 3 Parquet or asphalt strips.....= 4 Ceramic tiles.....= 5 Cement.....= 6 Other_____.....= 96 (Specify)	

d) Type of roofing

Grass/thatch/Makuti.....= 1
Polythene paper.....= 2
Tin cans.....= 3
Corrugated iron (Mabati).....= 4
Asbestos sheets.....= 5
Concrete.....= 6
Tiles.....= 7
Other_____.....= 96
(Specify)

e) Source of household water

Tap running water.....= 1
Outside house stand pipe.....= 2
River.....= 3
Underground well.....= 4
Other sources_____.....= 96
(Specify)

f) Toilet family uses

Not shared with other households.....= 1
Shared by 1-2 other households.....= 2
Shared by 3- 4 other households.....= 3
Shared by 5 and more other households.....= 4

g) Cooking

Electricity.....= 1
LPD/Natural gas.....= 2
Biogas.....= 3
Paraffin/Kerosene.....= 4

		Charcoal from wood.....= 5 Firewood/straw.....= 6 Dung.....= 7 Other_____.....= 96 (Specify)
203	Does your household have: A car or truck A bicycle (For adult use) A motor cycle A TV A radio A telephone/mobile A refrigerator Solar power	**a) Means of transport** Car/Truck.....1 Yes 2 No Bicycle.....1 Yes 2 No Motor cycle/Scooter.....1 Yes 2 No **b) Items in the house** TV.....1 Yes 2 No Radio.....1 Yes 2 No Telephone /mobile.....1 Yes 2 No Refrigerator.....1 Yes 2 No Solar.....1 Yes 2 No
	SECTION C: SOCIAL CULTURAL ENVIRONMENT	
301	Currently, whom do you live with?	**Current living arrangement** Living with parents.....= 1 Living with relative.....= 2 Living alone.....= 3 Living with a friend.....= 4 Living with spouse.....= 5 Other _____.....= 96 (Specify)
	Sexuality Information	
302	a) Young people learn about	School teacher.....= 1

	puberty - I mean the ways in which boys' and girls' bodies change during the teenage years - from many sources. They may learn from teachers at school, parents, brothers and sisters, from friends, from doctors or they may learn from books, films and magazines. What has been the most important source of information for you on this topic? (Circle one of your most important source of information on sexuality) b) (**Most important source on reproductive health system**) Now I want to ask you a similar question about sources of information on the sexual and reproductive systems of men and women - I mean where eggs and sperm are made and how pregnancy occurs. What has been the one most important source of information on this topic?	Mother.....= 2 Father.....= 3 Brother.....= 4 Sister.....= 5 Other family members.....= 6 Friends.....= 7 Health professional.....= 8 Books/magazines.....= 9 Films/Videos.....= 10 Media.....= 11 Other _____ .....= 96 (Specify) b) School teacher.....= 1 Mother.....= 2 Father.....= 3 Brother.....= 4 Sister.....= 5 Other family members.....= 6 Friends.....= 7 Health professional.....= 8 Books/magazines.....= 9 Films/Videos.....= 10 Media.....= 11 Other _____ .....= 96 (Specify) c)	

	c) **(Information on boy girl relationships)** Now there is a third similar question about sources of information on relationships - I mean how boys should treat girls and vice versa. What has been the one most important source of information on this topic?	School teacher.....= 1 Mother.....= 2 Father.....= 3 Brother.....= 4 Sister.....= 5 Other family members.....= 6 Friends.....= 7 Medical professional.....= 8 Books/magazines.....= 9 Films/Videos.....= 10 Media.....=11 Other_____.....= 96 (Specify)	
	d) What has been the second most important source of information on boy girl relationships?	d) School teacher.....= 1 Mother.....= 2 Father.....= 3 Brother.....= 4 Sister.....= 5 Other family members.....= 6 Friends.....= 7 Medical professional.....= 8 Books/magazines.....= 9 Films/Videos.....= 10 Media.....= 11 Other_____.....= 96	
303	a) Some schools have classes on puberty, on sexual and	Yes.....= 1 No.....= 2	If no to 303 a), skip to Q

	reproductive systems and on relationships between boys and girls. Did you ever attend school classes on any of these topics?	Not sure.....= 98	# 304
	b) If you were to describe the topics that you discussed last with your teachers, what areas could describe them best (circle all that apply)	b) Menstruation.....= 1 How to avoid pregnancy.....= 2 Contraception.....= 3 Boy girl relationship.....= 4 Body development.....= 5 Abortion.....= 6 How to abstain from sex.....= 7 HIV/AIDS.....= 8 Sexually transmitted diseases.....= 9	
	c) Do you think that there should be (more) classes on these topics, fewer classes or were the number about right?	c) More.....= 1 Fewer.....= 2 About right.....= 3	
304	a) Have you ever discussed about sexuality at home	a) Yes.....= 1 No.....= 2 Can't recall.....= 98	If no or can't recall skip to Q # 305

	b) If you ever discussed sexuality at home, with who did you discuss	b) Mother.....= 1 Father.....= 2 Brother.....= 3 Sister.....= 4 Sexual partner.....= 5 House help.....= 6 Other family members_____.....= 96 (Specify)
	c) If you were to describe the topics that you discussed last with your parents/family members, what areas could describe them best (Circle all that apply)	c) Menstruation.....= 1 How to avoid pregnancy.....= 2 Contraception.....= 3 Boy girl relationship.....= 4 Body development.....= 5 Abortion.....= 6 How to abstain from sex.....= 7 HIV/AIDS.....= 8 Sexually transmitted diseases.....= 9 Other _____.....= 96 (Specify)
305	How would your guardian/parents feel about your using birth control if you were not married?	Would object.....= 1 Would not object.....= 2 Any other response_____.....= 96 (Specify)

306	If you were asked to select the best source of information about your sexuality, which would be your preferred choice	School teacher.....= 1 Mother.....= 2 Father.....= 3 Brother.....= 4 Sister.....= 5 Other family members.....= 6 Friends.....= 7 Health professional.....= 8 Books/magazines.....= 9 Films/Videos.....= 10 Media.....= 11 Other_____ .....= 96 (Specify)	
	SECTION D: SOCIAL DEMOGRAPHIC		
401	Marital status	Never married.....= 1 Married.....= 2 Living together.....= 3 Divorced/separated.....= 4 Widowed.....= 5	
402	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some family issues Have you ever had sexual Intercourse? "by sexual intercourse I mean a penis in a vagina" If has never had sexual	Yes.....= 1 No .....= 2	If no, Skip to # 501

	intercourse, skip to # 501 (If answer is yes give code 1 and code 2 for none active)		
403	How old were you when you first had sexual intercourse?	Age (Years)_____ Can't remember.....= 98 No response.....= 99	
404	When was the last time you had sexual intercourse	Within past1 week.....= 1 1-2-weeks ago.....= 2 3-4 weeks ago.....= 3 1-3 months ago.....= 4 4-6 months ago.....= 5 7 months-One year.....= 6 More than one year ago.....= 7	

	SECTION E: **KNOWLEDGE OF CONTRACEPTIVES**		
501	Have you ever heard of any ways or methods that women or men can use to avoid a pregnancy?	Yes.....= 1 No.....= 2	
502	How can a pregnancy be prevented	Abstaining from sexual intercourse.....= 1 Using a method of contraception.....= 2 Other_____ = 96 (Specify) Don't Know.....= 98	
503	What methods of contraceptives have you heard about (Circle all that apply)	Pills.....= 1 Condoms.....= 2 Injectable.....= 3 Intra-uterine device (IUCD : coil).....= 4 Implant.....= 5 Female sterilization.....= 6 Male sterilization.....= 7 Other_____.....= 96 (Specify) Don't Know.....= 98	
504	a) Would you say that you know how contraceptives are used? b) Can you indicate what is true of the statements	a)Yes.....= 1 No.....= 2 True Untrue Don't know 1 2 98 b) i) Condoms prevent HIV infection only 1 2 98 ii) Condoms prevent HIV and pregnancy 1 2 98	If no, skip to Q# 506

		iii) UCD, Pills (and other contraceptives) prevent pregnancy only *1 2 98*	
505	Please tell me whether you think the statement is true, or false, or whether you don't know.		
	a) A woman can get pregnant on the very first time that she has sexual intercourse.	True.....= 1 False.....= 2 Don't Know.....= 98	
	b) A woman is most likely to get pregnant if she has sexual intercourse half way between her periods.	True.....= 1 False.....= 2 Don't Know.....= 98	
	c) A woman is not likely to get pregnant if she has sexual intercourse when standing.	True.....= 1 False.....= 2 Don't Know.....= 98	
	d) A woman is not likely to get pregnant if she takes a bath immediately after sexual intercourse.	True.....= 1 False.....= 2 Don't Know.....= 98	
	e) A woman is not likely to get pregnant if she has sexual intercourse after missing a contraceptive method only once	True.....= 1 False.....= 2 Don't Know.....= 98	

506	Do you know of a place where you can obtain a method of contraceptive/family planning?	Yes.....= 1 No.....= 2 Don't Know/ not sure.....= 98	
	SECTION F: PERCEPTION		
601	What would you say is your opinion about unmarried youth using a method to avoid getting pregnant?	Approve.....= 1 Disapprove.....= 2 Don't know/not sure.....= 98	
602	If you wanted to, could you yourself get a contraceptive method?	Yes.....= 1 No.....= 2 Don't know/not sure.....= 98	
603	Refer to question number **402 (had sex)** If answer to question number **304** is yes, how often have you ever discussed with your partner about contraceptives in the past one year?	a) Communication about contraceptives with partner Once.....= 1 More often.....= 2 Never.....= 3	Skip to Q 901 if answer to Question 402 (a) is no
604	a) Have you had sex with any other partner in the last 12 months? b) The last time you had sexual intercourse with another partner, was a condom used?	a) History of sex with other men/women Yes.....= 1 No.....= 2 b) History of condom use Yes.....= 1 No.....= 2 c) Reason for condom use last time with another man To prevent STD/HIV.....= 1	If answer is no skip to Q 701

	c) What was the main reason you used a condom on that occasion? (Multiple response)	To prevent pregnancy.....= 2 To prevent both STD/HIV and pregnancy.....= 3 Did not trust partner/he/she may have other partner.....= 4 Partner insisted.....= 5 Other_____.....= 96 (specify)	
	SECTION G: HISTORY OF CONTRACEPTIVE USE		
701	a) Have you ever used any form of contraceptives to avoid getting pregnant? b) When was the last time you used a method? (state actual month and year) c) Which method was that? d) When did you start using contraceptives (state actual month and year)	Yes.....= 1 No.....= 2 Don't know/not sure.....= 98 b) Month _____ Don't know/not sure.....= 98 Year_____ Don't know/not sure.....= 98 c) Pills.....= 1 Condoms.....= 2 Injectable.....= 3 Intra-uterine device (IUCD : coil).....= 4 Implant.....= 5 Other _____.....= 96 (Specify) d) Month _____ Don't know/not sure.....= 98 Year_____ Don't know/not sure.....= 98	If no, skip to Q # 706
702	What motivated you to use contraceptives	Friends advised.....= 1	

	c) What was the main reason you used a condom on that occasion? (Multiple response)	*To prevent pregnancy*.....= 2 *To prevent both STD/HIV and pregnancy*.....= 3 Did not trust partner/he/she may have other partner.....= 4 Partner insisted.....= 5 Other_____.....= 96 (specify)	
	SECTION G: HISTORY OF CONTRACEPTIVE USE		
701	a) Have you ever used any form of contraceptives to avoid getting pregnant?	Yes.....= 1 No.....= 2 Don't know/not sure.....= 98	If no, skip to Q # 706
	b) When was the last time you used a method? (state actual month and year)	b) Month _____ Don't know/not sure.....= 98 Year_____ Don't know/not sure.....= 98	
	c) Which method was that?	c) Pills.....= 1 Condoms.....= 2 Injectable.....= 3 Intra-uterine device (IUCD : coil).....= 4 Implant.....= 5 Other _____.....= 96 (Specify)	
	d) When did you start using contraceptives (state actual month and year)	d) Month _____ Don't know/not sure.....= 98 Year_____ Don't know/not sure.....= 98	
702	What motivated you to use contraceptives	Friends advised.....= 1	

	(Multiple responses)	*Partner persuaded*.....= 2 *Did not want to get pregnant*.....= 3 Did not want to get HIV/AIDS.....= 4 Other reason_____.....= 96 (Specify) Not sure.....= 98	
703	a) How long have you been on the current contraceptive (State actual period mentioned) b) If used a contraceptive in the past, for how long did you use it? (State actual period mentioned)	a) Actual length of time on current contraceptive method a) Days_____(Completed days < 31 days) b) Months_____(Completed months <24 months) c) Years_____ (Completed years) b) Actual length of time in the past a contraceptive was used a) Days_____ (Completed days < 31 days) b) Months_____ (Completed months <24 months) c) Years_____(Completed years)	If currently using contraceptives, skip to Q 704
704	a) If you have ever used a contraceptive method, did you use the method consistently b) If ever used a contraceptive, was the method used the last time you had sex	Yes, used contraceptive every time I had sex with partner.....= 1 Used contraceptives sometimes.....= 2 b)Yes (If yes, state method used).....= 1 _____ No.....= 2	
705	**(If current user)** If you are currently using contraception, would you say	Mainly respondent.....= 1 Mainly partner.....= 2 Joint decision.....= 3	If not using contraceptives, skip to Q

	that using contraception is mainly your decision, mainly your partner's decision or did you both decide?	*Other*_____ .....= 96 *(Specify)*	*#706*
706	a) Have you or your partner ever used a condom? b) Was the condom used by you or your partner? (Probe on who put on the condom) c) If yes, was it to prevent a pregnancy or HIV/AIDS infection? (Circle what applies)	a) Ever used a condom Yes.....= 1 No.....= 2 b) Person who used condom Used by me.....= 1 Used by partner.....= 2 c) Purpose for using condom To prevent pregnancy.....= 1 To prevent HIV/AIDS infection.....= 2 To prevent both pregnancy and HIV/AIDS.....= 3	If no skip to Q # 707 After answering "c" skip to Q 801
707	If you have never used a contraceptive/method of family planning, do you think you will use a method to delay or avoid pregnancy at any time in the	Yes.....= 1 No.....= 2 Does not know.....= 98	

	future		
708	**(If sexually active: Had sex within last 3 months)** If you are not using a contraceptive method, what is the main reason that you think you will not use at any time in the future?	Infrequent sex.....= 1 Partner opposes.....= 2 Family opposes.....= 3 Religion prohibits.....= 4 Friends oppose.....= 5 Health concerns.....= 6 Fear of side effects.....= 7 Inconvenient to use.....= 8 Other_____.....= 96 (specify) Does not know.....= 98	if response to Q # 404 score is above 4 (more than 3 months)
	SECTION H: SERVICE PROVISION ENVIRONMENT		
801	a) Have you ever visited a health facility to collect a contraceptive method in the past one year? b) If yes to question above, what is the name of the last health facility/clinic you	a) Yes.....= 1 No.....= 2 b) Specific name_____	If no, skip to Q # 807

	visited---Specific name	c) Characteristics of services offered	
	c) How can you describe services offered at the clinic (Multiple response)	Close to where I live.....= 1 Open after 5 pm.....= 2 Open on weekend.....= 3 I feel free to go to this clinic.....= 4 I find other youths when I visit the clinic.....= 5 Clinic supplies contraceptives to unmarried youth.....= 6 Staff discuss contraceptive information.....= 7 Clinic gives reading materials on contraceptives.....= 8 I feel services are provided quickly----------.....= 9 There is adequate privacy during consultation.....=11 Others_____.....= 96 (Specify)	
	d) During the visit to the last clinic, did you feel comfortable enough to ask questions?	d) Yes.....= 1 No.....= 2	
	e) At the time, were you told about side effects or problems	e) Yes.....=1 No.....= 2	

	you might have with the method?		
802	What contraceptive methods are offered at this health facility/ clinic? (Circle all mentioned)	a) Pills.....= 1 b) Male condoms.....= 2 c) Female condoms.....= 4 d) IUCD/Coil.....= 5 e) Others_____.....= 96 (specify)	
803	(For those who visited the clinic for contraceptives) Did you receive privacy/confidential services during the consultation?	Opinion on privacy during consultation Yes.....= 1 No.....= 2	
804	a) Were the questions you asked during the consultation answered adequately? b) Would you recommend your friends to collect contraceptives from the last clinic you visited?	a) Yes.....= 1 No.....= 2 b) Yes.....= 1 No.....= 2 c) Staff do not treat you well.....= 1 Methods not available when needed.....= 2 Would not trust staff with information.....= 3 Any other reason_____.....= 96 (Specify)	If "b" is yes skip to Q # 805

	c) If would not recommend, what are the reasons		
805	a) The last time you went to this clinic for contraceptives, did you get the method you wanted?	a) Yes.....= 1 No.....= 2	If yes to question "a" skip to "c"
	b) If you did not get the method you wanted, what were the reasons given	b)Reason given Method not available.....= 1 Was told that I was too young.....= 2 Referred elsewhere.....= 3 Other reasons .....= 96 . (Specify)	
	c) The last time you went to collect contraceptive methods from the clinic, how long did it take to get the service	c) Time taken to get service Less than 10 minutes .....= 1 Between 10-20 minutes.....= 2 20-30 minutes.....= 3 30-40 Minutes.....= 4 40-60 Minutes.....= 5 More than 1 hour.....= 6	
806	a) The last time you used a contraceptive, did you pay for it and how much was it?	Yes (Amount in Kenya shillings).....= 1 Amount_____ No.....= 2	After answering 806 and 801 is yes (ever visited a

			clinic) then skip to 901
	(Write the amount mentioned)		
807	If you have never visited a clinic, where did you obtain the method last time?	Community based distributor…(CBD)……= 1 Friend/Relative……= 2 Shop……= 3 Other……= 96	

	SECTION I: BARRIERS		
901	a) If you wanted to use a contraceptive method today, would you know where to get them?	a) Source known Yes.....= 1 No.....= 2	If no skip to Q # 902
	b) If you know source, give specific name(s)	b) Specific name_____	If responded to Q# 901 "c" skip to Q # 903
	c) What would motivate you to collect contraceptive supplies from this source (circle yes for all that apply)	c) Reasons Services are free.....= 1 Near enough .....= 2 Methods are available all the time.....= 3 Clinic open hours are convenient.....= 4 Services are given within reasonable time.....= 5 Clinic protocols and procedures used are not cumbersome & are simple and Friendly.....= 6 Privacy.....= 7 Other reason(s)_____.....= 96 (Specify	

902	**(Not currently using contraceptives)** If you wnted to use a contraceptive method but you are not using, what are the reasons (circle all that apply)	*Cost of commodities*.....= 1 Commodities not available when needed.....= 2 Source too far.....= 3 Clinic not open when I have time.....= 4 Clinic protocols and procedures are cumbersome.....= 5 Partner objects.....= 6 Not sexually active.....= 7 Any other reason_____.....= 96 (Specify)	If answer is "Not sexually active" end interview
903	The last time you used a contraceptive, where did you obtain them from	Clinic/hospital.....= 1 Shop/chemist.....= 2 Friend.....= 3 Other_____.....= 96 (specify)	
904	If you used a contraceptive before but you are not using it now, what were the reasons for stopping	Knows no source.....= 1 Clinic too far.....= 2 Cost too high .....= 3 Wanted to become pregnant.....= 4 Clinic introduced new rules .....= 5 Clinic unfriendly.....= 6 Not sexually active.....= 7 Other reason_____.....= 96 (Specify) No reason.....= 98	

Comments

Appendix 3.5: Parent in-depth interview guide

Enumeration Number				
Household code				

Gender	**M**		**F**	
Age				
Parent with adolescents in or out-of-school	**In school**		**Out of school**	

Division:

EA court/sector name where applicable in Embakasi /Kayole (1297) ----------

Date: Name of interviewer:

Note to interviewer:

- This interview guide is intended for parents
- A separate interview guide should be used for each interview. The interviewer should take notes directly on the interview guide. If more space is required, additional sheets of paper can be used as long as the question numbers are clearly indicated.

Introduction and consent

Hello, my name is ---------- and we are conducting this study from the University of Nairobi, Population Studies and Research Institute. The survey is about youth sexuality and health behaviour and we would very much appreciate your participation. I would like to ask you some questions about yourself and your experience in sexuality education in the family. This information will help the government and other partners to design appropriate sexual health programmes for the youth. The interview will take about 10-15 minutes to complete. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

Do you have any questions about the survey? May I begin the interview now?

SIGNATURE OF INTERVIEWEE----------DATE.....

SIGNATURE OF INTERVIEWER----------DATE.....

Study objective: Establish nature of discussions on sexuality held by parents

During this session, we shall discuss about adolescent sexuality which refers to: body changes, growing up experiences by boys and girls (10-24 years), relationships between boys and girls, menstruation and pregnancy prevention. We would like you to please share with us your honest thoughts, feelings, opinions and experiences when answering these questions. With this information, we will be able to identify ways to help adolescents to prevent unwanted pregnancies and prevent contracting sexually transmitted infections including HIV/AIDS. Can we proceed?

1. Do you believe adolescents and youth[5] have unique sexual and reproductive health needs?
    - If yes, what are these specific needs?
    - If no, why not?
2. In your opinion, who is best suited to conduct sexuality education for young people, school or family members? Explain your answer

Probing questions: sexuality information given when the informant was growing up
By who, when, where, how, what, why

3. If you found your daughter/son who is in school taking a contraceptive method, how would you react to him/ her? Explain your response
4. Are there sexual and reproductive health services that you think young people are entitled to?

- ❑ Contraception counselling
- ❑ Contraceptive services
- ❑ HIV/AIDS prevention services
- ❑ STI / HIV / AIDS counselling
- ❑ Pregnancy prevention counselling
- ❑ Condoms

[5] For this interview, "youth and adolescents" refers to people between the ages of 10 and 24 years.

5. Are there any other sexual and reproductive health services that you think young people are entitled to? Explain response

6. As a parent, is there any sexuality information that is important for young people? Explain your response

- ❑ Contraception counselling
- ❑ Contraceptive
- ❑ HIV/AIDS prevention
- ❑ Pregnancy prevention
- ❑ Condoms

7. In your opinion, who among the family members is most appropriate to educate young people about their growing up and relationships? Explain

8. At home, how is sexuality discussions introduced?

- Indirectly through other discussions
- Through parables? Please explain

9. Do parents have specific topics related to sexuality that they normally focus on with their children?

If yes:

- What messages are passed during these topics?
- Do you think these messages are useful in preventing pregnancies among girls or other risk behaviour among the youth?
- Challenges of discussing sexuality with their children
- What recommendations would you give to other parents or schools to improve educating young people on sexuality?

10. In your opinion, who should be best suited to teach sexuality education to young people?

a. Mother
b. Father
c. Aunties
d. Uncles
e. Other family members: explain

11. Do you have any ideas or advice on how parents can improve sexuality education strategies at home?

12. That concludes our discussion. We talked about many things today and you shared some very important and valuable experiences. We want to thank you for being honest and sharing your thoughts and feelings about sexuality education at home. We want to assure you that what we discussed in this interview will not be shared with anyone else outside this room. Please keep this information to yourself. Is there anything else that you would like to share with us? Do you have any questions about what we talked about today?

Thank you for your time

Appendix 3.6: Guide for structured in-depth interviews with head teachers and school counsellors

Date:
Name of interviewer:

Note to interviewer:

- This interview guide is for head-teacher/principle and school counsellor of schools that participated in the study
- A separate interview guide should be used for each interview. The interviewer should take notes directly on the interview guide. If more space is required, additional sheets of paper can be used as long as the question numbers are clearly indicated.

Introduction and consent

Hello, my name is ---------- and we are conducting this study from the University of Nairobi, Population Studies and Research Institute. The survey is about youth sexuality and health behaviour and we would very much appreciate your participation. I would like to ask you some questions about yourself and your experience in sexuality education in schools. This information will help the government and other partners to design appropriate sexual health programmes for the youth. The interview will take about 20-40 minutes to complete and the discussion shall be recorded. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.

Do you have any questions about the survey? May I begin the interview now?

SIGNATURE OF INTEERVIEWEE----------DATE.....

SIGNATURE OF INTEERVIEWER----------DATE.....

POSITION/TITLE.....
AGE.....
GENDER.....

DIVISION----------

NAME OF SCHOOL	PRIVATE	PUBLIC	
TYPE OF SCHOOL	GIRLS	BOYS	MIXED
	DAY	BOARDING	MIXED DAY/BOARDING

Study objective: Establish nature of discussions on sexuality and contraceptive use held in schools

During this session, we shall discuss about adolescent sexuality which refers to: body changes, growing up experiences by boys and girls, relationships between boys and girls, menstruation and pregnancy prevention. Please do not answer these questions as they relate to a specific school. We would like you to please share with us your honest thoughts, feelings, opinions and experiences when answering these questions. With this information, we will be able to identify ways to help adolescents to prevent unwanted pregnancies and prevent contracting sexually transmitted infections including HIV/AIDS. Can we proceed?

1. Do you believe adolescents and youth[6] have unique sexual and reproductive health needs?

2. If yes, what are these specific needs?

3. If no, why not?

4. Do you think that this country has adequate policies on youth and adolescent sexuality and health education?

    a. If yes:

5. Why?
6. Are these policies being adequately implemented?
7. How could implementation be improved?

    a. If no:

8. Why?
9. What sort of policies could help better address the sexuality and health education needs of youth and adolescents in schools?
10. Do you have any specific policy ideas?

11. In general, how adequate are schools in teaching information on growth and development and relationships for young people?

[6] For the purpose of this interview, "youth and adolescents" will refer to people between the ages of 10 and 24 years.

12. Please rate on a scale of 1 to 5, with 1 being not adequate at all, and 5 being completely adequate:
    i. 1 2 3 4 5
13. Please explain your rating:

14. In your opinion, what could be done to make schools more responsive to sexuality issues of the students?

15. In your opinion, which of the following sexual and reproductive health services should adolescents and youth be entitled to?

- ❑ Contraception counseling
- ❑ Contraceptive services
- ❑ HIV/AIDS prevention services
- ❑ STI / HIV / AIDS counseling
- ❑ Pregnancy prevention counseling
- ❑ Condoms

16. Are there any other sexual and reproductive health services that you think adolescents and youth should be entitled to?

17. What youth counselling has your current school been involved in?
18. What of sexuality counselling?

19. Have you ever participated in any sexuality counselling **activities in school**?
20. (In this school or any other school in your teaching carrier)

    a. If yes:
21. Please describe these activities.
22. What did you think of these activities?
23. Were they useful to the students? Why?
24. Did these activities lead you to **take any actions** to assist students address the issue of adolescent and youth sexual and reproductive health? If yes, please describe the action that you took.

25. Have you ever received any training on adolescent and youth sexuality?

    a. If yes:
26. What did you think of the training?
27. Did any of your beliefs or attitudes towards youth and adolescent sexual and reproductive health change? Please explain

28. Does the school have specific topics related to sexuality education?

    a. If yes:

29. What messages are passed during these topics?
30. Do you think these messages are useful in preventing pregnancies among girls or other risk behaviour among the youth?
31. What recommendations would you give to the school authorities (Sponsors of school, Ministry of Education, Parents' Association etc) to improve teaching on sexuality?

32. In your opinion, would you say that sexuality education in schools has been a success so far?

33. Probes:
34. Has sexuality education reduced number of girls/ boys who drop out due to pregnancy or other risk behaviour (drugs abuse, absconding, sexually transmitted infections and HIV/AIDS)?

35. Among the topics below, which ones would you recommend included in sexuality education?
    a. Menstruation
    b. Masturbation
    c. Dangers of unplanned pregnancies
    d. Pregnancy prevention
    e. Contraceptive use
    f. Condom use
    g. Where to get contraceptives
    h. HIV/AIDS prevention
    i. Body growth
    j. Personal hygiene
    k. Breast feeding
    l. How to bring up a baby
    m. How to interact with boys/girls
    n. How to remain a virgin until marriage
    o. How to avoid drug abuse
    p. Any other topic (Give name)

36. In your opinion, who should be best suited to teach sexuality education to young people?

    a. Head teacher/principle of school
    b. A counsellor/teacher allocated to give advice to students
    c. A student allocated by the schools
    d. Any other person (state title of this person)

37. In your opinion, what is the sexuality education in schools greatest weaknesses?

38. Do you have any ideas or advice on how schools can improve sexuality education strategies?

39. hat concludes our discussion. We talked about many things today and you shared some very important and valuable experiences. We want to thank you for being honest and sharing your thoughts and feelings about sexuality education in schools. We want to assure you that what we discussed in this interview will not be shared with anyone else outside this room. Please keep this information to yourself. Is there anything else that you would like to share with us? Do you have any questions about what we talked about today?

Thank you for your time

Appendix 3.7: FGD guide for school going adolescents

Study objectives: Identify perceptions and constraints affecting use and continuing use of contraception among adolescents and youth; establish nature of discussions on sexuality and contraceptive use held in schools, by family members and messages passed during these discussions and; document perceptions that influence contraceptive use among adolescents and youth.

Focus groups for sexually active adolescents will be segmented by gender for both males and females. Each focus group will have approximately 8-12 participants (a minimum of 8) and will last for about 45 minutes but no longer than 1 hour. Participants will be notified about the purpose of the focus group when being recruited and appropriate incentives will be provided such as travel reimbursements (when discussions are held out of school days) or refreshments. In addition, participants will be provided the name of the person and contact information in case they have any questions or concerns regarding the focus group discussions after they leave.

Register of names
Introductions
Establish Ground rules
Review Verbal Consent Forms and have Moderators name, Sign and Date
Provide Snacks/Incentives
Prepare for voice recording

A. Introduction of Moderator & Recorders

B. Purpose of Conducting the Focus Group – We have invited you all here today so that you can share with us your thoughts and feelings regarding contraceptive/reproductive health services and how you would like to receive these services to best meet your needs. The _____ moderator would like to hear your thoughts on how to increase contraceptive use among adolescents and youth and reasons and views you may have for not using or not continuing to use contraceptives. With this information, we will be able

to identify ways to help adolescents use contraceptives to prevent unwanted pregnancies and prevent contracting sexually transmitted infections including HIV/AIDS.

C. Review ground rules

D. Read and Review Oral Informed Consent Form – Include voice-recording and confidentiality issues. Moderator & Recorders to sign & date Oral Informed Consent form after reading out loud to participants.

E. Introduction of Participants – We would like to begin by introducing ourselves to one another. Please tell us your first name and why you wanted to participate in this focus group discussion. (Facilitators can pick other introductory questions that might be more appropriate, relevant, etc.)

Thank you. We would like to start by asking you how you define contraceptives and reproductive health services overall and how you would like to receive these services. During this session, we shall discuss about adolescent sexuality which refers to: body changes, growing up experiences by boys and girls, relationships between boys and girls, menstruation and pregnancy prevention. Please do not answer these questions as they relate to a specific school, family or health centre but if you were to receive these services anywhere. We would like everyone to please share with us their honest thoughts, feelings, opinions and experiences when answering these questions. Do you have any questions before we begin?

Source of sexuality information

1. In your opinion, who among family members would you freely discuss about growing up, pregnancy prevention and HIV/AIDS prevention?
    a. Mother
    b. Father
    c. Aunt
    d. Uncle
    e. Brother
    f. Sister
    g. Cousin
    h. Nobody
    i. Any other person (indicate relationship to you)

2. If sexuality information is given at home, what topics are discussed?
    a. Menstruation
    b. Masturbation
    c. Dangers of unplanned pregnancies
    d. Pregnancy prevention
    e. Contraceptive use
    f. Condom use
    g. Where to get contraceptives
    h. HIV/AIDS prevention
    i. Body growth
    j. Personal hygiene
    k. Breast feeding
    l. How to bring up a baby
    m. How to interact with boys/girls
    n. How to remain a virgin until marriage
    o. How to avoid drug abuse
    p. Any other topic (Give name)

3. Is sexuality information given in schools? If so, by who?
    a. Head teacher/principle of school
    b. A counsellor/teacher allocated to give advice to students
    c. A student allocated by the schools
    d. Any person (state title of this person)

4. If sexuality information is given in school, what topics are discussed?

    a. Menstruation
    b. Masturbation
    c. Dangers of unplanned pregnancies
    d. Pregnancy prevention
    e. Contraceptive use
    f. Condom use
    g. Where to get contraceptives
    h. HIV/AIDS prevention
    i. Body growth
    j. Personal hygiene
    k. Breast feeding
    l. How to bring up a baby
    m. How to interact with boys/girls
    n. How to remain a virgin until marriage
    o. How to avoid drug abuse
    p. Any other topic (Give name)

5. Now we are going to ask you a couple of questions about how sexuality issues are discussed at home and schools.

6. At home:
7. Some teenagers discuss sexuality issues at home. For those who discuss these issues, how are the topics introduced by the family members? (Probing questions)
    a. Arranged discussions
    b. Through questions (example of questions)
    c. Indirectly by discussing other people or issues first
    d. Warning of dangers (give examples)
    e. Threats (give example)

8. What are the topics used to introduce discussions on sexuality
    a. At home
    b. In schools
    c. Among friends

9. Service environment

10. When going to a contraceptive/reproductive health clinic, how would you like to be treated?
    a. (If respondents say "with respect, nicely, etc." probe with the following)
    b. What does "respect, nice, etc." mean to you?
    c. What would you expect from a respectful/nice provider?

11. Who would you prefer going to for contraceptives/reproductive health services? For example, would you feel most comfortable going to: (Support the response)
    a. A CBD or peer youth educator or someone from your community
    b. Someone you know or someone you don't know
    c. A counsellor, nurse, or a doctor
    d. A man or a woman
    e. Someone who is older or same age as you
    f. Someone with same socio-economic class
    g. Someone from same ethnic group
    h. Anything else?

12. Given a choice, what clinic hours and days would be most convenient for you to access services? (Give reasons)

13. How important is privacy to you? When you enter a clinic or are with a provider, what are some specific things that make you feel like you have privacy?

14. What would be a reasonable cost for contraceptive/reproductive health services?

15. For you, what are the three most important things when deciding whether to use a contraceptive?

16. What are some of the biggest challenges, problems or barriers you face when obtaining a contraceptive? And how would you go about addressing or fixing some of these challenges and problems?

17. Would you prefer a provider to ask you questions regarding other sexual and reproductive health topics, such as…
    a. Gender-based violence
    b. Domestic violence
    c. HIV/AIDS
    d. Anything else?

18. Perceptions:

19. Some people discuss with their boyfriends/girl friends about contraceptives. What would motivate young people to feel free to discuss contraceptive use with their boyfriends/girlfriends?

20. Why do some teenagers use contraceptives while others do not?

21. Are there messages given by family members or schools that would be interpreted to communicate support to use contraceptives. Can you describe some of the messages young people receive that communicates support and that can influence young people to use contraceptives including condoms (probing questions),
    a. Direct advice to collect contraceptives from the clinic
    b. Being provided the supplies
    c. Given money to visit clinic
    d. Other messages (use names to describe the messages)

22. How would you react if your partner requested you to use a contraceptive?

a. That concludes our discussion. We talked about many things today and you all shared some very important and valuable experiences. We want to thank you all for being honest and sharing your thoughts and feelings about contraceptive/reproductive health services. We want to remind everyone that what was discussed in this focus group should not be shared with anyone else outside this room. Please keep this information to yourself and respect other people's privacy. Is there anything else that you would like to share with us? Do you have any questions about what we talked about today?

Appendix 3.8: FGD guide for unmarried out-of-school adolescents

Study objectives: Identify perceptions and constraints affecting use and continuing use of contraception among adolescents and youth; establish nature of discussions on sexuality and contraceptive use held in schools, by family members and messages passed during these discussions and; document perceptions that influence contraceptive use among adolescents and youth.

Focus groups for sexually active adolescents will be segmented by gender for both males and females. Each focus group will have approximately 8-12 participants (a minimum of 8) and will last for about 45 minutes but no longer than 1 hour. Participants will be notified about the purpose of the focus group when being recruited and appropriate incentives will be provided such as travel reimbursements (when discussions are held out of school days) or refreshments. In addition, participants will be provided the name of the person and contact information in case they have any questions or concerns regarding the focus group discussions after they leave.

Register of names
Introductions
Establish Ground rules
Review Verbal Consent Forms and have Moderators name, Sign and Date
Provide Snacks/Incentives
Prepare for voice recording

A. Introduction of Moderator & Recorders

B. Purpose of Conducting the Focus Group – We have invited you all here today so that you can share with us your thoughts and feelings regarding contraceptive/reproductive health services and how you would like to receive these services to best meet your needs. The _____ moderator would like to hear your thoughts on how to increase contraceptive use among adolescents and youth and reasons and views you may have for not using or not continuing to use contraceptives. With this information, we will be able

to identify ways to help adolescents use contraceptives to prevent unwanted pregnancies and prevent contracting sexually transmitted infections including HIV/AIDS.

C. Review ground rules

D. Read and Review Oral Informed Consent Form – Include voice-recording and confidentiality issues. Moderator & Recorders to sign & date Oral Informed Consent form after reading out loud to participants.

E. Introduction of Participants – We would like to begin by introducing ourselves to one another. Please tell us your first name and why you wanted to participate in this focus group discussion. (Facilitators can pick other introductory questions that might be more appropriate, relevant, etc.)

Thank you. We would like to start by asking you how you define contraceptives and reproductive health services overall and how you would like to receive these services. During this session, we shall discuss about adolescent sexuality which refers to: body changes, growing up experiences by boys and girls, relationships between boys and girls, menstruation and pregnancy prevention. Please do not answer these questions as they relate to a specific school, family or health centre but if you were to receive these services anywhere. We would like everyone to please share with us their honest thoughts, feelings, opinions and experiences when answering these questions. Do you have any questions before we begin?

Source of sexuality information

1. In your opinion, who among family members would you freely discuss about growing up, pregnancy prevention and HIV/AIDS prevention?
    a. Mother
    b. Father
    c. Aunt
    d. Uncle
    e. Brother
    f. Sister
    g. Cousin

h. Nobody
i. Any other person (indicate relationship to you)

2. If sexuality information is given at home, what topics are discussed?
   a. Menstruation
   b. Masturbation
   c. Dangers of unplanned pregnancies
   d. Pregnancy prevention
   e. Contraceptive use
   f. Condom use
   g. Where to get contraceptives
   h. HIV/AIDS prevention
   i. Body growth
   j. Personal hygiene
   k. Breast feeding
   l. How to bring up a baby
   m. How to interact with boys/girls
   n. How to remain a virgin until marriage
   o. How to avoid drug abuse
   p. Any other topic (Give name)

3. Is sexuality information given in schools? If so, by who?
   a. Head teacher/principle of school
   b. A counsellor/teacher allocated to give advice to students
   c. A student allocated by the schools
   d. Any person (state title of this person)

4. If sexuality information is given in school, what topics are discussed?

   a. Menstruation
   b. Masturbation
   c. Dangers of unplanned pregnancies
   d. Pregnancy prevention
   e. Contraceptive use
   f. Condom use
   g. Where to get contraceptives
   h. HIV/AIDS prevention
   i. Body growth
   j. Personal hygiene
   k. Breast feeding
   l. How to bring up a baby
   m. How to interact with boys/girls
   n. How to remain a virgin until marriage
   o. How to avoid drug abuse
   p. Any other topic (Give name)

5. Now we are going to ask you a couple of questions about how sexuality issues are discussed at home and schools.
6. At home:
7. Some teenagers discuss sexuality issues at home. For those who discuss these issues, how are the topics introduced by the family members? (Probing questions)
    a. Arranged discussions
    b. Through questions (example of questions)
    c. Indirectly by discussing other people or issues first
    d. Warning of dangers (give examples)
    e. Threats (give example)

8. What are the topics used to introduce discussions on sexuality
    a. At home
    b. In schools
    c. Among friends

9. Service environment

10. When going to a contraceptive/reproductive health clinic, how would you like to be treated?
    a. (If respondents say "with respect, nicely, etc." probe with the following)
    b. What does "respect, nice, etc." mean to you?
    c. What would you expect from a respectful/nice provider?

11. Who would you prefer going to for contraceptives/reproductive health services? For example, would you feel most comfortable going to: (Support the response)
    a. A CBD or peer youth educator or someone from your community
    b. Someone you know or someone you don't know
    c. A counsellor, nurse, or a doctor
    d. A man or a woman
    e. Someone who is older or same age as you
    f. Someone with same socio-economic class
    g. Someone from same ethnic group
    h. Anything else?

12. Given a choice, what clinic hours and days would be most convenient for you to access services? (Give reasons)

13. How important is privacy to you? When you enter a clinic or are with a provider, what are some specific things that make you feel like you have privacy?

14. What would be a reasonable cost for contraceptive/reproductive health services?

15. For you, what are the three most important things when deciding whether to use a contraceptive?

16. What are some of the biggest challenges, problems or barriers you face when obtaining a contraceptive? And how would you go about addressing or fixing some of these challenges and problems?

17. Would you prefer a provider to ask you questions regarding other sexual and reproductive health topics, such as…
    a. Gender-based violence
    b. Domestic violence
    c. HIV/AIDS
    d. Anything else?

18. Perceptions:

19. Some people discuss with their boyfriends/girl friends about contraceptives. What would motivate young people to feel free to discuss contraceptive use with their boyfriends/girlfriends?

20. Why do some teenagers use contraceptives while others do not?

21. Are there messages given by family members or schools that would be interpreted to communicate support to use contraceptives. Can you describe some of the messages young people receive that communicates support and that can influence young people to use contraceptives including condoms (probing questions),
    a. Direct advice to collect contraceptives from the clinic
    b. Being provided the supplies
    c. Given money to visit clinic
    d. Other messages (use names to describe the messages)

22. How would you react if your partner requested you to use a contraceptive?

That concludes our discussion. We talked about many things today and you all shared some very important and valuable experiences. We want to thank you all for being honest and sharing your thoughts and feelings about contraceptive/reproductive health services. We want to remind everyone that what was discussed in this focus group should not be shared with anyone else outside this room. Please keep this information to yourself and respect other people's privacy. Is there anything else that you would like to share with us? Do you have any questions about what we talked about today?

Appendix 3.9: FGD guide for married adolescents

Study objectives: Identify perceptions and constraints affecting use and continuing use of contraception among adolescents and youth; establish nature of discussions on sexuality and contraceptive use held by family members and messages passed during these discussions and; document perceptions that influence contraceptive use among adolescents and youth.

Focus groups for sexually active adolescents will be segmented by gender for both males and females. Each focus group will have approximately 8-12 participants (a minimum of 8) and will last for about 45 minutes but no longer than 1 hour. Participants will be notified about the purpose of the focus group when being recruited and appropriate incentives will be provided such as travel reimbursements (when discussions are held out of school days) or refreshments. In addition, participants will be provided the name of the person and contact information in case they have any questions or concerns regarding the focus group discussions after they leave.

Register of names
Introductions
Establish Ground rules
Review Verbal Consent Forms and have Moderators name, Sign and Date
Provide Snacks/Incentives
Prepare for voice recording

A. Introduction of Moderator & Recorders

B. Purpose of Conducting the Focus Group – We have invited you all here today so that you can share with us your thoughts and feelings regarding contraceptive/reproductive health services and how you would like to receive these services to best meet your needs. The _____ moderator would like to hear your thoughts on how to increase contraceptive use among adolescents and youth and reasons and views you may have for not using or not continuing to use contraceptives. With this information, we will be able to identify ways to help adolescents use contraceptives to prevent unwanted pregnancies and prevent contracting sexually transmitted infections including HIV/AIDS.

A. Review ground rules
B. Read and Review Oral Informed Consent Form – Include voice-recording and confidentiality issues. E....Moderator & Recorders to sign & date Oral Informed Consent form after reading out loud to participants.

C. Introduction of Participants – We would like to begin by introducing ourselves to one another. Please tell us your first name and why you wanted to participate in this focus

group discussion. (Facilitators can pick other introductory questions that might be more appropriate, relevant, etc.)

Thank you. We would like to start by asking you how you define contraceptives and reproductive health services overall and how you would like to receive these services. During this session, we shall discuss about adolescent sexuality which refers to: body changes, growing up experiences by boys and girls, relationships between boys and girls, menstruation and pregnancy prevention. Please do not answer these questions as they relate to a specific school, family or health centre but if you were to receive these services anywhere. We would like everyone to please share with us their honest thoughts, feelings, opinions and experiences when answering these questions. Do you have any questions before we begin?

Source of sexuality information

1. What are some of the contraceptives available in our country today?

2. What types of contraceptives are most accessible to you? How?

3. In your opinion, who among family members would you feel free to discuss pregnancy prevention, use of contraception and HIV/AIDS prevention?(probes)
    a. Spouse
    b. Mother
    c. Father
    d. Aunt
    e. Uncle
    f. Brother
    g. Sister
    h. Cousin
    i. Nobody
    j. Any other person (indicate relationship to you)

4. Before you got married, what sexuality information did you get at home and what topics did you discuss, and with who? (probes)
    a. Menstruation
    b. Masturbation
    c. Dangers of unplanned pregnancies
    d. Pregnancy prevention
    e. Where to get contraceptives
    f. HIV/AIDS prevention
    g. Body growth
    h. Personal hygiene
    i. Breast feeding
    j. How to bring up a baby
    k. How to interact with boys/girls

l. How to remain a virgin until marriage
m. How to avoid drug abuse
n. Any other topic (Give name)

5. What of how to avoid pregnancy/ contraceptive use including condom?

6. Also important to (explore acquisition of the particular sexuality information (especially use of contraceptives) in schools, groups, churches peers (friends), mass media (newspapers, internet, radio, TV) etc.

7. Now we are going to ask you a couple of questions about how sexuality issues are discussed at home
8. At home:
9. Some teenagers discuss sexuality issues at home. For those who discussed these issues, how were the topics introduced by the family members? (Probing questions)
    a. Which family member
    b. Arranged discussions
    c. Through questions (example of questions)
    d. Indirectly by discussing other people or issues first
    e. Warning of dangers (give examples)
    f. Threats (give example)

10. What of contraceptives use and avoiding pregnancy?

11. Service environment

12. When going to a contraceptive/reproductive health clinic, how would you like to be treated?
    a. (If respondents say "with respect, nicely, etc." probe with the following)
    b. What does "respect, nice, etc." mean to you?
    c. What would you expect from a respectful/nice provider?

13. Who would you prefer going to for contraceptives/reproductive health services? For example, would you feel most comfortable going to: (Support the response)
    a. A CBD or peer youth educator or someone from your community
    b. Someone you know or someone you don't know
    c. A counsellor, nurse, or a doctor
    d. A man or a woman
    e. Someone who is older or same age as you
    f. Someone with same socio-economic class
    g. Someone from same ethnic group
    h. Anything else?

14. Given a choice, what clinic hours and days would be most convenient for you to access services? (Give reasons)

15. How important is privacy to you? When you enter a clinic or are with a provider, what are some specific things that make you feel like you have privacy?

16. What would be a reasonable cost for contraceptive/reproductive health services? Explore different types of contraceptives

17. For you, what are the three most important things when deciding whether to use a contraceptive?
18. What are some of the biggest challenges, problems or barriers you face when obtaining a contraceptive? And how would you go about addressing or fixing some of these challenges and problems?

19. Perceptions:
20. Why do some young people use contraceptives while others do not?
21. What type of contraceptive do young people prefer? Why?
22. How would you know that your family member or your partner supports your use of contraceptives (including condom)? (probing questions),
    a. Direct advice to collect contraceptives from the clinic
    b. Being provided the supplies
    c. Given money to visit clinic
    d. Other messages (use names to describe the messages)

23. How would you react if your partner requested you to use a contraceptive?

24. What would motivate young people to feel free to discuss contraceptive use with their partners or friends?

That concludes our discussion. We talked about many things today and you all shared some very important and valuable experiences. We want to thank you all for being honest and sharing your thoughts and feelings about contraceptive/reproductive health services. We want to remind everyone that what was discussed in this focus group should not be shared with anyone else outside this room. Please keep this information to yourself and respect other people's privacy. Is there anything else that you would like to share with us? Do you have any questions about what we talked about today?

Appendix 3.10: FGD guide for parents

Study objectives: Identify barrier affecting the use and maintaining use of contraception among adolescents and youth; establish nature of discussions on sexuality and contraceptive use held in schools by family members and messages passed during these discussions and; document perceptions that influence contraceptive use among adolescents and youth.

Focus groups for parents will be segmented by gender for both males and females. Each focus group will have approximately 6-10 participants and will last for about 1 hour but no longer than 1.5 hours. Participants will be notified of the purpose of the focus group when being recruited and appropriate incentives will be provided such as refreshments or travel reimbursement. In addition, participants will be provided the name of a person and contact information in case they have any questions or concerns regarding the focus group discussions after they leave.

Provide Nametags
Introductions
Establish Ground rules
Review Verbal Consent Forms and have Moderators Sign and Date
Provide Snacks/Incentives
Label Cassettes (when tape recording focuses group discussions)

A. Introduction of Moderator & Recorders

B. Purpose of Conducting the Focus Group – We have invited you all here today so that you can share with us your thoughts and feelings regarding sexuality, reproductive health information and services that meet adolescents and youth needs. The _____ moderator would like to hear your thoughts and opinions on contraceptive use among adolescents and youth and reasons and views you may have for using or not using contraceptives.

C. Review ground rules

D. Read and Review Oral Informed Consent Form – Include tape-recording and confidentiality issues. Moderator & Recorders to sign & date Oral Informed Consent form after reading out loud to participants.

E. Introduction of Participants – We would like to begin by introducing ourselves to one another. Please tell us your first name and why you wanted to participate in this focus group discussion. (Facilitators can pick other introductory questions that might be more appropriate, relevant, etc.)

Thank you. During this session, we shall discuss about adolescent sexuality which refers to: body changes, growing up experiences by boys and girls, relationship between girls and boys, menstruation and pregnancy prevention. We would like everyone to please share with us your honest thoughts, feelings, opinions and experiences when answering these questions. Do you have any questions before we begin?

Sexuality information

1. In your opinion, who is best suited to conduct sexuality education for young people, school or family members? Explain your answer

2. In your opinion, who among family members is involved with discussing about growing up, pregnancy prevention and HIV/AIDS prevention?
    a. Mother
    b. Father
    c. Aunt
    d. Uncle
    e. Brother
    f. Sister
    g. Cousin
    h. Nobody
    i. Any other person (indicate relationship to you)

3. If sexuality information is given at home, what topics are discussed?
    a. Menstruation
    b. Masturbation
    c. Dangers of unplanned pregnancies
    d. Pregnancy prevention
    e. Contraceptive use
    f. Condom use
    g. Where to get contraceptives
    h. HIV/AIDS prevention
    i. Body growth
    j. Personal hygiene
    k. Breast feeding
    l. How to bring –up a baby
    m. How to interact with boys/girls
    n. How to remain a virgin until marriage
    o. How to avoid drug abuse
    p. Any other (Give name)

4. Now we are going to ask you a couple of questions about how sexuality issues are discussed at home and schools.

5. At home:
6. Some parents discuss sexuality issues at home. For those who discuss these issues, how are the topics introduced by the family members? (probing questions)
    a. Arranged discussions
    b. Through questions (example of questions)
    c. Indirectly by discussing other people or issues first
    d. Warning of dangers (give example)
    e. Threats (give example)

7. Perceptions:
8. What challenges do parents have in educating the young people on sexuality issues?

9. Some parents discuss with their children about pregnancy prevention and contraceptives. What would motivate parents to feel free to discuss pregnancy prevention and contraceptive use with their children?

10. What strategies should be taken to educate young people about sexuality issues, pregnancy and HIV infection prevention?

11. If you found a school going son/daughter with a condom or pills, what would be your reaction? Please explain your response

12. In your opinion, who should be best suited to teach sexuality education to young people at home?

    a. Mother
    b. Father
    c. Aunties
    d. Uncles
    e. Other family members: explain

13. In your opinion, what are the sexuality education greatest weaknesses?

    a. At home
    b. In school

14. How would you react if your daughter requested you to give him/her information on how to prevent a pregnancy or HIV infection?

15. Are there sexual and reproductive health services that you think young people are entitled to?

- ❑ Contraception counselling
- ❑ Contraceptive services
- ❑ HIV/AIDS prevention services
- ❑ STI / HIV / AIDS counselling
- ❑ Pregnancy prevention counselling
- ❑ Condoms

16. Are there any other sexual and reproductive health services that you think young people are entitled to? Explain response

17. Do you have any ideas or advice on how parents can improve sexuality education strategies at home?

18. In your opinion, would you say that sexuality education in schools has been a success so far?
    a. Yes. Explain your response
    b. No Explain your response and give suggestion on how the situation could be improved
19. Probes:
20. Has sexuality education reduced number of girls/ boys who drop out due to pregnancy or other risk behaviour (drugs abuse, absconding, sexually transmitted infections and HIV/AIDS)?

21. That concludes our discussion. We talked about many things today and you all shared some very important and valuable experiences. We want to thank you all for being honest and sharing your thoughts and feelings about contraceptive/reproductive health services. We want to remind everyone that what was discussed in this focus group should not be shared with anyone else outside this room. Please keep this information to yourself and respect other people's privacy. Is there anything else that you would like to share with us? Do you have any questions about what we talked about today?

Appendix 3.11: Statement of consent for FGDs

Name of Study: Adolescent reproductive health study
Purpose of Study: To establish the nature of discussions on sexuality and contraceptive use held by family members and messages passed during these discussions

Contact Information:

Adolescent study
Joyce Kinaro
P. O. Box 53094-00200, Nairobi, Kenya
Tel: (254)722-844-827
Email: jkinaro@yahoo.com

The survey is about youth sexuality and health behaviour. This information will help the government and other partners to design appropriate sexual health programmes for the youth.

As a volunteer participant in the above mentioned study, I will participate in a focus group discussion where I will be asked to discuss the issue of adolescent and youth sexual and reproductive health. I will also be asked to discuss my opinion on adolescent reproductive health information in the family. The discussion should last no longer than one hour. I understand that the information I provide will be used exclusively for this study and will in no way be associated with my name or any other identifiable information of mine.

By signing below, I state that I have read this consent form in its entirety and that all of my questions have been answered. I understand that by signing below, I am consenting to participate in this discussion and to having someone take notes of the discussion tape recording and to be photographed. I also understand that I am in no way obligated to answer any question that I do not wish to answer.

Signature _____ Date _____

Appendix 5: Percentage distribution of the study population according to knowledge, perceptions and barriers on contraceptive use by background characteristics, Nairobi, 2010

Characteristics	Characteristics of knowledge							
	Ever heard ways to prevent a pregnancy	How a pregnancy can be prevented			Contraceptive Knowledge			Knows how contraceptives are used
	Yes	Abstaining/cont Contraceptives	Don't know	No information	No knowledge	1-2 methods	3 >methods	Yes
Age	***	**			***			***
15	74.9(182)	86.8(211)	12.8(31)	0.4(1)	36.2(88)	63.4(154)	0.4(1)	20.2(49)
16	87.7(214)	93.4(228)	5.3(13)	1.2(3)	29.1(71)	68.9(168)	2.0(5)	30.3(74)
17	88.5(238)	90.3(243)	8.9(24)	0.7(2)	19.0(51)	77.3(208)	3.7(10)	49.8(134)
18	91.5(215)	93.6(220)	6.4(15)	0.0(0)	11.9(28)	83.8(197)	4.3(10)	61.3(144)
19	93.8(120)	93.8(120)	6.3(8)	0.0(0)	6.3(8)	85.2(109)	8.6(11)	69.5(89)
Total	86.6(969)	91.3(1022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)
Sex	ns	ns			ns			***
Male	88.1(457)	91.1(473)	7.9(41)	1.0(5)	23.7(123)	72.6(377)	3.7(19)	50.3(261)
Female	85.3(512)	91.5(549)	8.3(50)	0.2(1)	20.5(123)	76.5(459)	3.0(18)	38.2(229)
Total	86.6(969)	91.3(1022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)
Marital status	ns	ns			*			ns
Never married	86.4(950)	91.4(1003)	8.5(94)	0.5(6)	22.4(246)	74.4(818)	3.3(36)	43.5(479)
Ever married	100(19)	89.5(17)	10.5(2)	0.0(0)	0.0(0)	94.7(18)	5.3(1)	57.9(11)
Total	86.6(969)	91.3(1022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)
Socio cultural fac.								
Living arrangement	**	ns			ns			***
With parents	88.1(748)	92.3(784)	6.9(59)	0.7(6)	22.6(192)	74.7(632)	2.7(23)	41.7(354)
With spouse	100(15)	93.3(14)	6.7(1)	0.0(0)	0.0(0)	93.3(14)	6.7(1)	60.0(9)
Other people	80.6(199)	87.9(217)	12.1(30)	0.0(0)	20.6(51)	74.1(183)	5.3(13)	51.0(126)
No information	87.5(199)	97.5(2)	0.0(0)	0.0(0)	37.5(3)	62.5(5)	0.0(0)	12.5(1)
Total	86.9(969)	91.30(1022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)

Notes: Numbers in parenthesis refer to the number of responses in each category; Source: Primary Analysis of the Data; ***-p<0.01, **-p<0.05, *-p<0.1, s-not significant

Table 5: Continued

Characteristics	Characteristics of knowledge							
	Ever heard ways to prevent a pregnancy	How a pregnancy can be prevented			Contraceptive Knowledge			Knows how contraceptives are used
	Yes	Abstain/Contracep	Don't know	No information	No knowledge	1-2 methods	3 >methods	Yes
Attending school	***	**			***			***
Attending	100(969)	91.9(638)	0.8(8)	0.2(2)	14.2(138)	81.9(794)	3.8(37)	49.59480)
Not attending	0(0)	91.1(338)	58.9(76)	0.0(0)	71.3(92)	28.7(37)	0.0(0)	7.0(9)
No information	0(0)	4.5(46)	33.3(7)	19.0(4)	76.2(16)	23.8(5)	0.0(0)	4.8(1)
Total	86.6(969)	91.3(1022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)
Division	**	ns			***			*
Central	91.8(56)	90.2(55)	9.8(6)	0.0(0)	11.5(7)	86.9(53)	1.6(1)	49.2(30)
Dagoretti	89.6(43)	97.9(47)	2.1(1)	0.0(0)	20.8(10)	79.2(38)	0.0(0)	52.1(25)
Embakasi	86.5(619)	90.8(850)	8.4(60)	0.8(6)	24.3(174)	72.1(516)	3.6(26)	45.1(323)
Kasarani	92.3(12)	92.3(12)	7.7(1)	0.0(0)	7.7(1)	92.3(12)	0.0(0)	76.9(10)
Kibera	88.3(69)	93.5(72)	6.5(5)	0.0(0)	11.7(9)	88.3(68)	0.0(0)	37.7(29)
Makadara	95.6(43)	93.3(422)	6.7(3)	0.0(0)	17.8(8)	77.8(35)	4.4(2)	48.9(22)
Pumwani	70.0(21)	83.3(25)	16.7(5)	0.0(0)	50.0(15)	46.7(14)	3.3(1)	23.3(7)
Westlands	82.9(107)	92.2(119)	7.8(10)	0.0(0)	17.1(22)	77.5(100)	5.4(7)	34.1(44)
Total	86.6(969)	91.31022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)
Most important source of information	***	***			***			***
Teacher	89.9(675)	94.1(707)	5.5(41)	0.4(3)	19.3(145)	77.5(582)	3.2(24)	43.0(323)
Parent	76.0(130)	84.2(144)	15.2(26)	0.6(1)	35.7(61)	60.8(104)	3.5(6)	36.3(62)
Other sources	83.2(164)	86.9(171)	12.2(24)	1.0(2)	20.3(40)	76.1(150)	3.6(7)	53.3(105)
No information	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Total	86.6(969)	01.4(1022)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)
Socioeconomic st	**	ns			**			ns
High	87.5(265)	92.4(280)	7.6(23)	0.0(0)	19.5(59)	78.5(238)	2.0(6)	41.6(126)
Medium	85.2(592)	90.5(6299)	8.6(60)	0.9(6)	24.6(171)	71.2(495)	4.2(29)	44.2(307)
Low	92.6(112)	93.4.7(113)	6.6(8)	0.0(0)	13.2(16)	85.1(103)	1.7(2)	47.1(57)
Total	86.9(969)	91.3(113)	8.1(91)	0.5(6)	22.0(246)	74.7(836)	3.3(37)	43.8(490)

Appendix 5: Continued

Characteristics	Characteristics of knowledge								
	Knowledge on how contraceptives work in prevention of pregnancy and HIV/AIDS				Knowledge of risks to unprotected sex				Knowledge of source of contraceptives
	High	Moderate	Low	No information	High	Moderate	Low	No information	
Age	***				***				***
15	11.5(28)	4.9(12)	8.6(21)	74.9(182)	0.8(2)	10.7(26)	13.6(33)	74.9(182)	37.0(90)
16	15.6(38)	10.7(26)	7.4(18)	66.4(162)	2.0(5)	16.8(41)	14.8(36)	66.4(162)	46.7(114)
17	32.0(86)	12.6(34)	6.3(17)	49.1(132)	1.9(5)	27.9(75)	21.2(57)	49.1(132)	56.9(153)
18	42.1(99)	16.2(38)	3.0(7)	38.7(91)	2.6(6)	35.3(83)	23.4(55)	38.7(91)	66.0(155)
19	42.2(54)	22.7(29)	6.3(8)	28.9(37)	0.8(1)	51.6(66)	18.8(24)	28.9(37)	75.0(96)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)
Sex	***				***				ns
Male	32.6(169)	13.5(70)	6.2(32)	47.8(248)	1.3(7)	31.2(162)	19.7(102)	47.8(248)	57.0(296)
Female	27.7(136)	11.5(69)	6.5(39)	59.5(356)	2.0(12)	21.5(129)	17.2(103)	59.3(356)	52.0(312)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)
Marital status	*				ns				
Never married	26.8(295)	12.6(138)	6.3(69)	54.2(595)	1.6(18)	26.1(286)	18.0(198)	54.2(595)	54.0(594)
Ever married	52.6(10)	5.3(1)	5.3(1)	36.8(7)	5.3(1)	26.3(5)	31.6(6)	36.8(7)	73.7(14)
No information	0.0(0)	0.0(0)	33.3(1)	66.7(2)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)
Socio cultural factors									
Living arrangement	***				**				ns
With parents	26.5(225)	11.1(94)	6.2(53)	56.2(477)	1.8(15)	25.8(219)	16.3(138)	56.2(477)	53.8(457)
With spouse	60.0(9)	0.0(0)	0.0(0)	40.0(6)	6.7(1)	33.3(5)	20.0(3)	40.0(6)	73.3(11)
Other people	28.3(70)	18.2(45)	7.3(18)	46.2(114)	1.2(3)	26.7(66)	25.9(64)	46.2(114)	54.7(135)
No information	12.5(1)	0.0(0)	0.0(0)	87.5(7)	0.0(0)	12.5(1)	0.0(0)	87.5(7)	62.5(135)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)

	High	Moderate	Low	No information	High	Moderate	Low	No information	
Attending school	***				***				***
Attending	21.6(303)	9.8(68)	7.1(49)	61.5(427)	1.3(9)	21.5(149)	15.76109)	61.5(427)	60.3(584)
Not attending	1.6(2)	18.1(67)	5.7(21)	38.5(143)	2.7(1)	33.4(124)	25.3(94)	38.5(143)	15.5(20)
No information	0.0(0)	3.0(4)	2.1(1)	97.0(44)	0.0(0)	2.9(33)	4.8(1)	95.2(20)	19.0(4)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)
Division	***				**				***
Central	37.7(23)	9.8(6)	1.6(1)	50.8(31)	4.9(3)	21.3(13)	23.0(14)	50.8(31)	67.2(41)
Dagoretti	37.5(18)	12.5(6)	2.1(1)	47.9(23)	2.1(1)	27.1(13)	22.9(11)	47.9(23)	68.8(33)
Embakasi	28.4(203)	13.7(98)	6..0 (43)	55.0(372)	1.5(11)	29.3(210)	17.2(123)	52.0(374)	54.6(391)
Kasarani	53.8(7)	15.4(2)	7.7(1)	23.1(3)	0.0(0)	38.5(5)	38.5(5)	23.1(3)	92.3(12)
Kibera	24.7(19)	7.8(6)	7.8(6)	59.7(46)	2.6(2)	22.1(17)	15.6(12)	59.7(46)	62.3(48)
Makadara	28.9(13)	8.9(4)	15.6(7)	46.7(21)	2.2(1)	24.4(11)	26.7(12)	46.7(21)	35.6(16)
Pumwani	3.3(1)	16.7(5)	3.3(1)	76.7(23)	0.0(0)	6.7(2)	16.7(5)	76.7(23)	13.3(4)
Westlands	16.3(21)	9.3(12)	8.5(11)	65.9(85)	0.8(1)	15.5(20)	17.8(24)	65.9(85)	48.8(63)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)
Most important source of information	***				***				**
Teacher	25.7(193)	12.3(92)	6.9(52)	55.1(414)	1.5(11)	25.7(193)	17.7(133)	55.1(414)	53.8(404)
Parent	21.1(36)	12.9(22)	5.3(9)	60.8(104)	1.2(2)	17.5(30)	20.5(35)	60.8(104)	48.0(82)
Other sources	38.6(76)	12.7(25)	5.1(10)	43.7(86)	3.0(6)	34.5(68)	18.8(37)	43.7(86)	61.9(122)
No information	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)
Socioeconomic status	ns				ns				ns
High	26.1(79)	10.2(31)	5.9(18)	57.8(175)	1.3(4)	22.1(67)	18.8(57)	57.8(175)	60.1(182)
Medium	27.5(191)	12.7(88)	6.9(48)	52.9(368)	1.6(11)	27.9(194)	17.6(122)	52.9(368)	51.9(361)
Low	28.9(35)	16.5(20)	4.1(5)	50.4(61)	3.3(4)	24.8(30)	21.5(26)	50.4(61)	53.7(65)
Total	27.3(305)	12.4(139)	6.3 (71)	54.0(604)	1.7(19)	26.0(291)	18.3(205)	54.0(604)	54.3(608)

Appendix 5: Continued

Characteristics	Characteristics of perceptions							
	Parent/Guardian approve of contraceptive use				Opinion of unmarried youth to use contraceptives			
	Yes	Would object	Would not object	Other response	Would approve	Disapprove	Not sure	No information
Age	***	***			***			
15	2.5(6)	76.5(186)	9.5(23)	14.0(34)	7.0(17)	77.4(188)	12.8(31)	2.9(7)
16	4.5(11)	61.9(151)	25.4(62)	12.7(31)	18.0(44)	75.0(183)	5.3(13)	1.6(4)
17	11.5(31)	63.9(172)	21.6(58)	14.5(39)	25.7(69)	66.2(178)	7.4(20)	0.7(2)
18	24.7(58)	59.6(140)	24.7(58)	15.7(37)	34.5(81)	59.6(140)	5.5(13)	0.4(1)
19	39.1(50)	61.7(79)	28.1(36)	10.2(13)	43.0(55)	52.3(67)	3.9(5)	0.8(1)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)
Sex	ns	*			**			
Male	15.0(78)	66.3(344)	22.5(117)	11.2(58)	27.0(140)	65.1(338)	6.7(35)	1.2(6)
Female	13.0(78)	64.0(384)	20.0(120)	16.0(96)	21.0(126)	69.7(418)	7.8(47)	1.5(9)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)
Marital status	***	***			ns			
Never married	12.7(140)	65.5(721)	20.5(226)	13.9(153)	23.8(262)	67.5(742)	7.4(81)	1.4(15)
Ever married	84.2(16)	36.8(7)	57.9(110	5.3(1)	21.1(4)	73.7(14)	5.3(1)	0.0(0)
Total	13.9(156)	65.1(728)	21.2 (237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)
Socio cultural factors								
Living arrangement	***	***			***			
With parents	9.3(79)	67.1(570)	20.0(170)	12.8(109)	20.7(176)	72.6(616)	5.7(48)	1.1(9)
With spouse	80.0(12)	40.0(6)	60.0(9)	0.0(0)	13.3(2)	80.0(12)	6.7(1)	0.0(0)
Other people	25.5(63)	60.7(150)	23.5(58)	15.8(39)	34.4(85)	50.2(124)	13.0(32)	2.4(6)
No information	25.0(2)	25.0(2)	0.0(0)	75.0(6)	37.5(3)	50.0(4)	12.5(1)	0.0(0)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)

Appendix 5: Continued

Characteristics	Characteristics of perceptions							
		Parent/Guardian approve of contraceptive use			Opinion of unmarried youth to use contraceptives			
	Yes	Would object	Would not object	Other response	Would approve	Disapprove	Not sure	No information
Attending school	**	***			***			
Attending	15.1(146)	66.4(643)	21.8(211)	11.9(115)	26.6(256)	68.9(668)	4.1(40)	0.3(3)
Not attending	6.2(8)	53.5(69)	17.8(23)	**28.7(37)**	5.4(7)	61.2(79)	32.6(42)	0.8(1)
No information	9.5(2)	76.2(16)	14.3(3)	9.5(2)	4.8(1)	42.9(9)	0.0(0)	52.4(11)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)
Division	***	***			***			
Central	24.6(15)	60.7(37)	21.3(13)	18.0(11)	31.1(19)	63.9(39)	4.9(3)	0.0(0)
Dagoretti	25.0(12)	58.3(28)	22.9(11)	18.8(9)	33.3(16)	64.6(31)	2.1(1)	0.0(0)
Embakasi	12.8(92)	69.7(499)	17.6(126)	12.7(91)	26.0(186)	64.5(462)	7.8(56)	1.7(12)
Kasarani	38.5(5)	69.2(9)	7.7(1)	23.1(3)	46.2(6)	53.8(7)	0.0(0)	0.0(0)
Kibera	13.0(10)	62.3(48)	14.3(11)	23.4(18)	15.6(12)	76.6(59)	6.5(5)	1.3(1)
Makadara	0.0(0)	53.3(24)	40.0(18)	6.7(5)	11.1(5)	84.4(38)	2.2(1)	2.2(1)
Pumwani	0.0(0)	70.0(21)	26.7(8)	3.3(1)	0.0(0)	80.0(24)	16.7(5)	3.3(1)
Westlands	17.1(22)	48.1(62)	38.0(49)	14.0(18)	17.1(22)	74.4(96)	8.5(11)	0.0(0)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)
Most important source of information	***	***			***			
Teacher	10.1(76)	70.8(532)	17.3(130)	11.9(89)	21.8(164)	72.0(541)	5.1(38)	1.1(8)
Parent	16.4(28)	53.2(91)	28.1(48)	18.7(32)	17.5(30)	63.7(109)	16.4(28)	2.3(4)
Other sources	26.4(52)	53.3(105)	29.9(59)	16.8(33)	36.5(72)	53.8(106)	8.1(16)	1.5(3)
No information	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)
Socioeconomic status		**	***				**ns**	
High	16.8(51)	58.4(177)	27.7(84)	13.9(42)	22.4(68)	72.6(220)	4.6(14)	0.3(1)
Medium	11.7(81)	68.5(476)	17.0(118)	14.5(101)	24.9(173)	64.2(446)	8.9(62)	2.0(14)
Low	19.8(24)	62.0(75)	28.9(35)	9.1(11)	20.7(25)	74.4(90)	5.0(6)	0.0(0)
Total	13.9(156)	65.1(728)	21.2(237)	13.8(154)	23.8(266)	67.6(756)	7.3(82)	1.3(15)

Appendix 5: Continued

Characteristics	Characteristics of perceptions			
	Can get contraceptives for self if wanted	Partner communication about contraceptives		
	Yes	Communicates with partner	Never communicates	No information
Age	***	***		
15	7.0(17)	2.5(6)	0.4(1)	97.9(238)
16	18.0(41)	4.5(12)	0.8(2)	96.7(236)
17	25.7(69)	15.3(36)	5.9(16)	89.6(241)
18	34.5(81)	16.4(21)	8.1(19)	76.6(180)
19	43.0(55)	16.4(21)	21.1(27)	62.5(80)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)
Sex	*	ns		
Male	27.0(140)	7.1(37)	6.9(36)	85.9(446)
Female	21.0(126)	7.0(42)	4.8(29)	88.2(529)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)
Marital status	ns	***		
Never married	23.8(262)	6.2(68)	5.5(60)	88.4(972)
Ever married	21.1(4)	57.9(11)	26.3(5)	15.8(3)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)
Socio cultural factors				
Living arrangement	***	***		
With parents	20.7(176)	4.5(38)	4.2(36)	91.3(775)
With spouse	13.3(2)	60.0(9)	20.0(3)	20.0(3)
Other people	34.4(85)	12.1(30)	10.5(26)	77.3(191)
No information	37.5(3)	25.0(2)	0.0(0)	75.0(6)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)

Appendix 5: Continued

Characteristics	Characteristics of perceptions			
	Can get contraceptives for self if wanted	Partner communication about contraceptives		
	Yes	Communicates with partner	Never communicates	No information
Attending school	***	**		
Attending	26.6(258)	8.0(78)	6.1(59)	85.9(832)
Not attending	5.4(7)	0.8(1)	3.9(5)	95.3(123)
No information	4.8(1)	0.0(0)	4.8(1)	95.2(20)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)
Division	***	***		
Central	31.1(19)	13.1(8)	9.8(6)	77.0(47)
Dagoretti	33.3(16)	14.6(7)	10.4(5)	75.0(36)
Embakasi	26.0(186)	5.2(37)	6.6(47)	88.3(632)
Kasarani	46.2(6)	30.8(4)	0.0(0)	69.2(9)
Kibera	15.6(12)	10.4(8)	2.6(2)	87.0(76)
Makadara	11.1(5)	0.0(0)	0.0(0)	100.0(45)
Pumwani	0.0(0)	0.0(0)	0.0(0)	100.0(30)
Westlands	17.1(22)	11.6(15)	3.9(5)	84.5(109)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)
Most important source of information	***	***		
Teacher	21.8(164)	4.7(35)	4.5(34)	90.8(682)
Parent	17.5(30)	8.2(14)	7.0(12)	84.8(145)
Other sources	36.5(72)	15.2(30)	9.6(19)	75.1(148)
No information	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)
Socioeconomic status	**	***		
High	22.4(68)	11.2(34)	5.0(15)	83.8(254)
Medium	24.9(173)	4.9(34)	5.8(40)	89.4(621)
Low	20.7(25)	9.1(11)	8.3(10)	82.6(100)
Total	23.8(266)	7.1(79)	5.8(65)	87.1(975)

Appendix 5: Continued

Characteristics	Characteristics of barriers							
	If wanted to use contraceptives today would know source	Methods available all the time would motivate	Clinic open hours convenient would motivate	Free services would motivate	Distance near enough would motivate	Services within reasonable time would motivate	Protocols /procedures friendly would motivate	Privacy provided would motivate
Age	***	***	ns	ns	***	ns	**	*
15	41.6(101)	3.3(8)	0.0(0)	2.9(7)	16.0(39)	0.8(2)	0.4(1)	6.6(16)
16	49.6(121)	6.6(16)	0.4(1)	4.1(10)	18.0(44)	0.8(2)	0.4(1)	13.1(32)
17	62.8(169)	10.0(27)	1.1(3)	3.3(9)	17.5(74)	1.5(4)	1.1(3)	15.6(42)
18	76.2(179)	15.7(37)	0.9(2)	7.2(17)	33.6(79)	2.1(5)	3.4(8)	14.0(33)
19	80.5(103)	10.2(13)	0.8(1)	5.5(7)	36.7(47)	2.3(3)	2.3(3)	16.4(21)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)
Sex	**	ns	*	ns	ns	ns	ns	ns
Male	63.4(329)	10.0(52)	0.2(1)	4.6(24)	27.2(141)	1.0(5)	1.7(9)	11.4(59)
Female	57.3(344)	8.2(49)	1.0(6)	4.3(26)	23.7(142)	1.8(11)	1.2(7)	14.2(85)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)
Marital status	ns	*	***	ns	*	***	ns	ns
Never married	60.2(662)	8.8(97)	0.5(5)	4.5(49)	25.0(275)	1.3(14)	1.4(15)	12.7(140)
Ever married	57.9(11)	21.1(4)	10.5(2)	5.3(1)	42.1(8)	10.5(2)	5.3(1)	21.1(4)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)
Socio cultural factors								
Living arrangement	ns	***	***	ns	**	***	ns	ns
With parents	59.7(507)	9.5(81)	0.6(5)	4.0(34)	24.0(204)	1.5(13)	1.8(15)	12.4(105)
With spouse	60.0(9)	40.0(6)	13.3(2)	0.0(0)	46.7(7)	13.3(2)	0.0(0)	13.3(2)
Other people	61.5(152)	5.7(14)	0.0(0)	6.5(16)	29.1(72)	0.4(1)	0.4(1)	13.8(34)
No information	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	37.5(3)
Total	60.1(673)	9.0(1010	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)

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Appendix 5: Continued

Characteristics	Characteristics of barriers							
	If wanted to use contraceptives today would know source	Methods available all the time would motivate	Clinic open hours convenient would motivate	Free services would motivate	Distance near enough would motivate	Services within reasonable time would motivate	Protocols /procedures friendly would motivate	Privacy provided would motivate
Attending school	***	***	ns	*	***	ns	ns	***
Attending	66.2(641)	10.2(99)	0.7(7)	5.1(49)	27.8(269)	1.7(16)	1.7(16)	14.3(139)
Not attending	17.1(22)	1.6(2)	0.0(0)	0.8(1)	7.0(9)	0.0(0)	0.0(0)	1.6(2)
No information	47.6(10)	0.0(0)	0.0(0)	0.0(0)	23.8(5)	0.0(0)	0.0(0)	14.3(3)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)
Division	***	***	ns	ns	**	***	*	*
Central	70.5(43)	14.8(9)	1.6(1)	3.3(2)	34.4(21)	9.8(6)	3.3(2)	13.1(8)
Dagoretti	72.9(35)	6.3(3)	0.0(0)	4.2(2)	41.7(20)	8.3(4)	2.1(1)	10.4(5)
Embakasi	59.5(426)	7.3(52)	0.6(4)	3.9(28)	24.7(177)	0.6(4)	0.7(5)	11.7(84)
Kasarani	92.3(12)	15.4(2)	0.0(0)	0.0(0)	38.5(5)	7.7(1)	7.7(1)	7.7(1)
Kibera	74.0(57)	10.4(8)	1.3(1)	7.8(6)	24.7(19)	0.0(0)	3.9(3)	15.6(12)
Makadara	55.6(25)	22.2(10)	0.0(0)	6.7(3)	17.8(8)	0.0(0)	2.2(1)	11.1(5)
Pumwani	30.0(9)	3.3(1)	0.0(0)	0.0(0)	10.0(3)	0.0(0)	3.3(1)	3.3(1)
Westlands	51.2(66)	12.4(16)	0.8(1)	7.0(9)	23.3(30)	0.8(1)	1.6(2)	21.7(28)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(160	1.4(16)	12.9(144)
Most important source of information* ** ns ns ns * ns ns**								
Teacher	60.3(453)	9.1(68)	0.5(4)	4.9(37)	25.8(194)	1.2(9)	1.5(11)	13.2(99)
Parent	49.1(84)	9.1(68)	0.0(0)	4.1(7)	18.1(31)	0.6(1)	1.2(2)	9.4(16)
Other sources	69.0(136)	5.3(9)	1.5(3)	3.0(6)	29.4(58)	3.0(6)	1.5(3)	14.7(29)
No information	0.0(0)	12.2(24)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)	0.0(0)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)
Socioeconomic status	**	**	ns	ns	Ns	**	*	ns
High	66.0(200)	9.9(30)	0.3(1)	4.6(14)	28.1(85)	2.6(8)	2.0(6)	13.5(41)
Medium	57.8(402)	7.6(53)	0.9(6)	4.6(32)	25.3(176)	0.7(5)	0.9(6)	12.2(85)
Low	58.7(71)	14.9(18)	0.0(0)	3.3(4)	18.2(22)	2.5(3)	3.3(4)	14.9(18)
Total	60.1(673)	9.0(101)	0.6(7)	4.5(50)	25.3(283)	1.4(16)	1.4(16)	12.9(144)

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You are advised to report to the Provincial Commissioner and the Provincial Medical Officer of Health Nairobi before embarking on your research.

On completion of your research, you are expected to submit two copies of your research report to this office.

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