

UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

**APPLICATION OF INFORMATION COMMUNICATION TECHNOLOGY IN
THE AWARENESS AND USAGE OF CONTRACEPTIVE INFORMATION
AMONG TEENAGERS IN THE SUNYANI EAST MUNICIPALITY**

EUNICE PRAH

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TEENAGERS IN THE SUNYANI EAST MUNICIPALITY**

BY

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(UDS/CHD/0108/12)



**A DISSERTATION PRESENTED TO THE DEPARTMENT OF COMMUNITY
HEALTH, SCHOOL OF ALLIED HEALTH SCIENCES, UNIVERSITY FOR
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FOR THE AWARD OF MASTER OF PHILOSOPHY IN COMMUNITY HEALTH AND
DEVELOPMENT**

FEBRUARY, 2017

DECLARATION

I hereby declare that this submission of the thesis is my own work towards the award of MPhil in Community Health and Development and that, to the best of my knowledge it contains no materials previously published by another person nor material which has been presented for the award of any degree of the University or elsewhere, except where due acknowledgement has been made in the text.

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Date

I hereby declare that preparation and presentation of this thesis was supervised by me in accordance with the guidelines on supervision of the thesis laid down by the University for Development Studies.

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Date



ABSTRACT

Unplanned teenage pregnancy constitutes an important health problem whilst contraceptive services are less costly in Ghana and abortion services are increasing in most health facilities. The main objective of the study was to examine the application of information communication technology in the awareness and usage of contraceptive information among teenagers in the Sunyani East Municipality. Five specific objectives were formulated to set as a guide for the study.

Descriptive cross sectional study design was used for this study with purposive and systematic random sampling technique used to sample the respondents at the study area. A sample of two hundred (200) respondents made up of 110 females and 90 males was used to gather data from students using questionnaires whiles twelve (12) respondents were interviewed from the health sector and the general public. Primary data was collected from respondents at the study area. Results from the study revealed that, the most popular contraceptive methods known by respondents are; oral contraceptives (15%), male condom (75%), injections (8%) and withdrawal (2%). The results showed that, 80% of the respondents perceived the use of ICT in accessing contraceptives as good while 20% of respondents perceived it as bad. Additionally, 131 (65.5%) respondents agreed that ICT has an effect on the sexual behaviour of teenagers while 69 (34.5%) respondents mentioned otherwise. More education on human reproductive health and contraceptives should be made available early, at the basic school level of a child's education by the health service staff responsible for reproductive health within the municipality. Failure to



help young people deal with sexuality and contraception leads to high incidences of pregnancy, STIs and HIV and AIDS, as well as high maternal and infant mortality. Reproductive health care services need to be available, accessible and comprehensive, provide education and allowing teenage girls to be matured and responsible persons in latter life.



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May God abundantly bless you.



DEDICATION

I dedicate this thesis to the Almighty God and my family including all those who would find the material useful one day.



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DEFINITION OF TERMS

Key terms are defined here as they would be appearing in this research work. These assisted the researcher to be consistent with the use of the terms in the research work.

Contraception: This is the use of various devices, drugs, agents, sexual practices or surgical procedures to prevent conception or impregnation (pregnancy)

Birth Control: Birth control involves one or more actions, devices, sexual practices or medications followed to intentionally prevent or reduce the likelihood of pregnancy or childbirth

Abortion: Abortion is the termination of pregnancy by the removal or expulsion from the uterus of a foetus or embryo before viability.

ICT: Any equipment that can assist the teenager to access contraceptive information and services



ABBREVIATIONS

AD	After the Death of Christ
AIDs	Acquired Immune Diseases
BAR	Brong Ahafo Region
BARN	Body Awareness Resource Network
CHWs	Community Health Workers
CICs	Combined injectable contraceptives
COCs	Combined Oral Contraceptives
DHS	Demographic and Health Survey
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
HIV	Human Immune Virus
ICT	Information and communication technology
ITU	International Telecommunication Union
IUDs	Intrauterine devices
JHU CCP	Johns Hopkins University Centre for Communication Programs
LAM	Lactational Amenorrhoea Method
MOH	Ministry of Health
MDGs	Millennium Development Goals



m4RH	Mobile for Reproductive Health
NGO	Non Governmental Organization
OCs	Oral Contraceptives
PDA	Personal Digital (or data) Assistants
PMTCT	Prevention of Mother to Child Transmission
PoPs	Progestogen-only Pills
SBCC	Social Behaviour Change Communication
SDGs	Sustainable Development Goals
STDs	Sexually Transmitted Diseases
SMS	Short Messaging Systems
SRH	Sexual and Reproductive Health
SSA	Sub-Saharan Africa
TB	Tuberculosis
UNFPA	United Nations Population Fund
WHO	World Health Organization
WIFA	Women in Fertile Age



CHAPTER ONE

1.1 Introduction

Modern contraceptive methods have a surprisingly short history and are dominated by the oral contraceptive pill, which came on to the market in the 1960s (Bracken and Farak, 2009). New developments since the advent of the pill have been largely limited to tinkering with the contents and routes of administration of hormonal contraception (Caldwell and Caldwell, 1999). Sexually active teenagers who do not use contraception face a great risk of pregnancy and often underestimate the likelihood of becoming pregnant or causing a pregnancy during sexual activities (Bracken and Farak, 2009; Chetley and Andrew, 2007). Sexual intercourse is often sporadic among curious teenagers worldwide usually unplanned, and unprotected, leaving many female teenagers vulnerable to both pregnancy and sexually transmitted diseases (STDs) (Abdullah, 2007).

Although teenagers are often viewed as a homogenous group in a lot of the published literature, they are not (Addai, 1999). Very often the precise age parameters used for defining who a teenager is are often documented inconsistently in scattered literature, or an age segment of this group is completely overlooked (Abiodun and Balogun, 2009). In a joint statement in 1998, WHO and UNFPA established the categories of “teenagers” as those aged 10–19 years (UNFPA, 2004, WHO, 2005). For the purposes of consistency and to avoid ambiguous age category for defining teenagers, this thesis is left with no option but to rely heavily on the definition by the use of this international age designation for teenagers by the WHO and UNFPA (1998).

Information and communication technology (ICT) has played an important role in addressing family planning, reproductive health, HIV/AIDS, tuberculosis (TB) and many other health needs



most especially among teenagers in developed countries (Shah, Zelnik, and Kantner, 2009). ICT methods can be used to inform and educate family planning/reproductive health program, community members, sexually active youth, and other service providers, as well as clients in a more effective way than the traditional way of doing it (Solo, 2010; Smit and Venter, 1993; Shah, Ian, Alex, Bongaarts and Townsend, 2009).

Using appropriate existing ICT methods to disseminate contraceptive information particularly mobile technologies have the capacity to improve access to family planning/reproductive health information and services for teenagers, married women and youth, as well as increasing their opportunities to more effectively engage in the economy, with the ultimate potential to better both their health status and their quality of life (Smit and Venter, 1993; Shah, Zelnik, & Kantner, 2009). These technologies and other effective ways of using ICT such as help lines could play a role in an overall approach to addressing gender inequities in accessing contraceptive information from service providers if care is taken to purposely support and encourage their use for and by all teenagers (Ian *et al.*, 2009).

Many developing economies are characterized by rapid population growth that is partly attributed to high fertility rate, high birth rates accompanied by steady declines in death rates, low contraceptive prevalence rate and high but declining mortality rate (Oyedokun, 2007). In Sub-Saharan Africa (SSA), the rate of population growth is one of the highest in the world, (2.8 percent) compared to the rest of the world (Oliver, 1995; Robey *et al.*, 1994; Shah, Zelnik, & Kantner, 2009). Equally, the number of people in need of contraceptives information and service especially among teenagers is still wide and increasing which in turn requires large amounts of resources, personnel and infrastructure to break the gap (Tansfer *et al.*, 2009; Smit and Venter, 1993)



Studies show that women who begin childbearing early are more likely to fall into a pattern of having births too closely together and that these women will tend towards having larger families (World Bank, 2003). The consequences of unsafe abortion and unwanted pregnancies are also extremely worrying in Africa (Zelnik and Kantner, 2009). In addition, inadequate sexual health care contributes to the spread of sexually transmitted infections (STIs) and may lead to damaging effects on an adolescent's lifelong health and fertility (Riddle and Estes, 2008).

According to the World Health Organization (2005) majority of pregnancies among teenagers mostly unmarried are unintended and could be substantially reduced in number by consistent use of contraception; yet close to two-thirds of sexually active young women in the world wide are either nonusers or sporadic users of contraceptive methods. Once a young woman becomes pregnant, whether the pregnancy is continued or not, the effects on her personal, social and educational life are often irreversible (Hawkins *et al.*, 1995; Ismet, 2000). In some societies unmarried young women who become pregnant or who are known to have had an abortion may become social outcasts (Ismet, 2000). Sometimes, young women are forced to give up school because of a fear that they will be a "bad influence" on other girls (Ian et al., 2009). Early parenthood, particularly for young women, may limit or preclude social, educational and employment development and the ability to achieve full status in society (Jaccard and Davidson, 2009; Korir and Mwabu, 2009). These consequences reinforce existing gender divisions and can lead to a spiral of low self-esteem, further pregnancies, intergenerational early pregnancy, early childbearing and poverty.

With decreasing age of menarche and onset of sexual activity, young people are exposed early to unplanned and unprotected sexual intercourse leading to unwanted pregnancies and invariably abortions especially very common in many Sub-Saharan African countries where persistent high



rates of unmet need for family planning and low rates of contraceptive use are reported (Karanja *et al.*, 2005). At the individual level also, multiple barriers to utilization have been identified, including risk perception, insufficient knowledge needed to make informed choices, opposition from male partners and health service limitations (Koray *et al.*, 2000; Koome, Nturibi and Kichamu, 2005)

According to Jaccard and Davidson (2009) as well as Corker and Ligne Verte (2010) the use of ICTs in health is not merely about advancement in technology but ICTs employed effectively by health service providers are a way to achieve a series of desired outcomes, for example:

- 1) Reproductive health facilities reaching a large number of teenagers with contraceptive information
- 2) Teenagers making better decisions about contraceptive usage
- 3) Authorities becoming aware of the need to be involved in reproductive issues especially among teenagers
- 4) Hospitals providing higher quality and safer care of contraceptive information and services
- 5) Policymakers and the public becoming more aware of health risks associated with risk behaviours especially among teenagers

Sources of data for the research work were both primary and secondary data sources. The entire work is organized into six chapters

1.2 Background of Study

Over the last several decades, there have been continuous efforts to promote and improve family planning and reproductive health, especially in the developing world (Foreman and Mia, 2011). Despite these efforts, “unmet need” is likely to grow by 40 percent in the next 15 years (United



Nations Population Fund [UNFPA] 2004). In sub-Saharan Africa, where almost half the female population is of reproductive age, one in four married women still does not have her contraceptive needs met and the total fertility rate of 5.2 is more than double the world average (World Bank, 2003; Tuladhar and Holoway, 2009; Tsui, Croft and Trevitt, 2009). The region also has the highest percent of adults ages 15-49 with HIV/AIDS (Tsui, Croft and Trevitt, 2009). This development has severely hampered economic and social progress further impeding family planning/reproductive health efforts especially among the teeming youth population (Tuladhar and Holoway, 2009).

According to Tanfer, Cubbins and Brewster, (2009), promotion of contraceptive usage among teenagers in countries with high birth rates has the potential of reducing poverty, population growth and hunger, while at the same time averting 32 percent of all maternal deaths and nearly ten percent of child mortality. It has been advanced that contraceptive usage among teenagers has the potential of contributing substantially to women's empowerment, achievement of universal primary schooling and long term environmental sustainability (Steele *et al.*, 1999). If access to family planning services was increased, the unmet need for family planning could be met (Solo, 2010; Routen, and Silas, 2010)

There is a growing interest in adolescent reproductive health (Riddle and Estes, 2008). Teenage pregnancy is an important public health issue because they are associated with maternal, foetal, and neonatal adverse outcomes (Tuladhar and Holoway, 2009; World Bank, 2003). Teenage girls who get pregnant are likely to drop out from school and teenage parents are unlikely to have the social and economic means to raise children (World Bank, 2003; Zelnik, M. & Kantner, 2009). Additionally, researchers have also stated that unintended pregnancy among teenagers pose a



major challenge to the reproductive health of young adults in developing countries (WHO, 2005; Tsui *et al.*, 2009).

With decreasing age of menarche and onset of sexual activity among teenagers, young people are exposed early to unplanned and unprotected sexual intercourse leading to unwanted pregnancies and invariably abortions especially very common in many Sub-Saharan African countries where persistent high rates of unmet need for contraceptive information and services and low rates of contraceptive use are reported (Robey *et al.*, 1994; Riddle and Estes, 2008; Ranck, 2011). The low levels of utilization of contraceptives are typically a function of both the limited capacity of the functioning health systems and the framework within which contraceptive services are delivered to the youth and married women (Robey *et al.*, 1994; Ranck, 2011). Researchers have mentioned factors affecting contraceptive service provision to teenagers as including tenuous commodity security and suboptimal service factors (Potts, 2009; Ranck, 2011).

Sexual behaviour among teenagers is not a new phenomenon. As part of the transition from childhood to adulthood, all teenagers experience sexual feelings (Ranck, 2011). Some act upon these feelings by having sexual intercourse; others do not have intercourse but engage in behaviours stopping short of penile/vaginal intercourse; some engage in anal intercourse or oral sex (Potts, 2009; WHO, 2005). More to this, others deny their sexual feelings by focusing intensely on non-sexual pursuits (Phillips *et al.*, 1996). Other adolescents are able to have socially acceptable intercourse through early, sometimes pre-arranged, marriages (Riddle and Estes, 2008). Worldwide, as women become more educated and the economic development of their home country advances, there is a trend towards delayed median age at first marriage and median age at first intended pregnancy (Oyedokun, 2007; Omran, 2009).



In highly developed countries, the gap between age of puberty and the ability of young people to be economically independent encompassing taking on the responsibilities of marriage and parenthood has increased among the youth (Oyedokun, 2007; Nathan *et al.*, 2004; Omondi-Odhiambo, 1999). Although some adults may find the idea disturbing, the reality now is that many teenagers have sexual relations before they are ready for marriage and families. Compounding all the problems associated with the early experience of first sexual intercourse before marriage is the low level of contraceptive use amongst teenagers (Nathan *et al.*, 2004; WHO, 2005; Oliver, 1995). At the individual level also, multiple barriers to utilization of contraceptives have been identified, including risk perception, insufficient knowledge needed to make informed choices, opposition from male partners and health service limitations (Omondi-Odhiambo, 1999; Abiodun and Balogun, 2009; Potts, 2009).

In order to respond to the needs of teenagers and young people for information and training in contraceptive usage, a growing international movement has been supporting the right of teenagers to receive accurate and balanced information about contraceptive services through the use of ICT and how to develop healthy relationships as well as how to make decisions for themselves using ICT methods (Addai, 1999; Bongaarts, 2008; Bracken and Farak, 2009). Lack of access to appropriate ICT methods among teenagers and lack of access to quality information and communication are the most important factors hindering effective utilization of ICT in assessing contraceptive services and information (Bongaarts, 2008; Bertrand *et al.*, 2005).

The arena of ICT is now transforming the field of public health. In 2008, the International Telecommunication Union (ITU) identified and published ways for the use of ICT in public health with the extension of new technology and the exploration of existing standpoints for revolutionary applications (Clement and Nyovani, 2004; Bracken and Farak, 2009).



Telemedicine, use of ICTs to provide health care where people did not have access to contraceptives services tries to address health challenges in several countries in the world (Foreman and Mia, 2002; Hawkins, Matteson *et al.*, 1995).

Several researchers have mentioned that ICTs, aid in collective efforts to create a dependable and reliable health care and health information system of good quality and it promotes continuous medical training, education and research (Hawkins *et al* 1995; Ismet, 2000; Ian, et al., 2009).

Teenagers are becoming the leading subscribers of mobile phones and users of computers mainly for social networking and sexual health information that is easily accessible, trustworthy, credible, confidential and non-threatening (Jaccard and Davidson, 2009; Karanja *et al.*, 2005).

The profile of internet usage is similar to that of mobile phone usage. Young people's use of social media such as Facebook, Tweeter and WhatsApp in the world serve as a medium by which certain information about contraceptives could be passed unto teenagers at their own convenience without regard to any distance (Karirah-Gitau and Sarah, 1999; Magadi *et al.*, 2001).

Teenagers should be encouraged and supported to use ICT in accessing vital information and services of contraceptives from their peers, adults, and the media effectively and consistently (Munyanziza, 1993; Mwaila, 2011; Nathan *et al.*, 2004). Improving contraceptive use by sexually active adolescents requires expanding and enhancing existing ICT services because teens are more likely to use them (Mwaila, 2011). Teenagers also need confidential, safe and convenient services (Magadi *et al.*, 2001). The above mentioned can be done through the use of ICT methods.

In light of the high unmet need for family planning and reproductive health information, there is significant potential to help teenage women avoid pregnancy and improve their reproductive



health by providing them with timely, actionable, personalized information through Short Messaging Systems (SMS) (Steele, Curtis *et al.*, 1999; Thomas and Maluccio, 1995).

1.3 Problem Statement

Although some successes have been achieved in the area of awareness of family planning services in the country, the unmet need for family planning still remains high (GHS, Report, 2008). Similarly, the Sunyani East Municipality in the Brong Ahafo Region (BA) of Ghana is not spared from this predicament as the acceptor rate for family planning services also remains low. Statistics from the Brong Ahafo Regional Health Directorate shows that from January to June 2013, 235 pregnant girls between 10 to 14 and 684 of them between 15 and 19 years visited antenatal clinics in the region which is a source of great concern (Ghana News Agency, 2013). The Municipal Health Directorate recorded antenatal registration for teenagers from January to December 2014 as follows: Age 10 – 14 years registered 29(0.5%) while age 15 -19 years registered 571 (10%), although there is slight decrease in the figures as compared to 2013, the fact still remains that there is increased dropout rate, poor parental control and peer pressure (Sunyani East Municipal Health Directorate, 2014).

At country level, although there are few studies regarding contraceptive use, most of them relied on secondary data from the demographic health surveys. The current study, however, went beyond by incorporating ICT and its usage to access contraceptives. There have been little empirical studies on the level of awareness and the use of contraceptives among the adolescents in the Sunyani East municipality. In most of the studies that have been conducted, much emphasis is placed mostly on population in tertiary institutions. Since the sexual activity seems to be starting at early ages as noted in some empirical studies, there is therefore the need to



research into contraceptives knowledge among adolescents in JHS and SHS level in the municipality.

1.4 Research Questions

1. How can ICT influence the attitude and perception of teenagers towards contraceptives usage in Sunyani East Municipality?
2. What are the knowledge, attitude and perception of teenagers towards the use of ICT in accessing information about contraceptives in Sunyani East Municipality?
3. What are the effects of ICT on sexual behaviours of teenagers in the Sunyani East Municipality?
4. What is the level of ICT usage by teenagers in accessing contraceptives information in Sunyani East Municipality?
5. Have teenagers overcome the barriers of contraceptive usage through ICT in the Sunyani East Municipality?

1.5 Aim of the Research

The aim of the research is to improve teenagers' use of contraceptives through the applications of ICT techniques within the Sunyani East Municipality by looking at alternative ways ICT could be beneficial to young people's access and knowledge on contraceptives.

1.6 Objectives of the Study

1.6.1 Main Objective of the Study

The main objective of the study is to assess the application of information communication technology and its role in the awareness and usage of contraceptive information among teenagers in the Sunyani East Municipality.



1.6.2 Specific Objectives

1. To investigate how ICT influence the attitude and perception of teenagers towards the use of contraceptives in Sunyani East Municipality
2. To examine the knowledge, attitude and perception of teenagers towards the use of ICT in accessing information about contraceptives in Sunyani East Municipality
3. To assess the effects of ICT on sexual behaviours of teenagers in the Sunyani East Municipality
4. To determine the level of ICT usage by teenagers in accessing contraceptives information in Sunyani East Municipality
5. To find out whether teenagers have overcome the barriers of contraceptive usage through the application of ICT in Sunyani East Municipality

1.7 Justification of the Study

As the world becomes more interconnected than ever before, young people the world over are requesting credible and accessible information on contraceptives and reproductive health. They want to have their many questions and concerns about contraceptives addressed. They need information not only about physiology and a better understanding of the norms that society has set for sexual behaviour, but they also need to acquire the skills necessary to develop healthy relationships and engage in responsible decision making about sex, especially during adolescence when their emotional development accelerates. This many people the world over have stated can be done through effective application of ICT.

It is expected that the findings of this study would increase knowledge and add to literature in this academic field as well as open up issues affecting the wellbeing of teenagers in accessing contraceptives in Ghana and possibly trigger further research. The study could add to the existing



body of knowledge regarding contraceptive and its usage by adolescents, thereby preventing unplanned pregnancies and problems related to teenage motherhood/fatherhood. The research also seeks to serve as information to governments, policy makers and implementers such as the Ministry of Health (MOH), Ghana Health Service (GHS), non-governmental organizations and all stakeholders in finding sustainable solutions to the plight of accessing contraceptives among teenage population in Ghana and in Africa as a whole.

1.8 Scope of the Study

Most people are familiar with the use of more conventional ICTs in health interventions, including radio, television, computers, internet, email, fixed land-line telephones, and fax. Some of these, such as radio and television, have been used for generations with differing results to support a multitude of family planning/reproductive health, HIV/AIDS and other health programs. Health workers and health organizations are familiar with myriad examples: the driver who transports contraceptives from a warehouse to a clinic based on stock data emailed from a central office; the woman listening to a community radio serial or soap opera designed to increase modern contraceptive use or to encourage couples to openly discuss HIV/AIDS; the doctor who accesses the internet to research about family planning/reproductive health protocols or how to integrate services all these are ICT in action.

The study was delimited in scope to only ICT use by teenagers in accessing contraceptive information and teenagers aged 11-19 years in the Sunyani East Municipality for the study. This delimitation of the study was done to manage the data collection considering the time and resources under the control of the researcher to have carried out the survey at the study area.



1.9 Organization of the Study

The thesis is organized into six (6) chapters. Chapter one contains the introduction to the entire research work followed by the background of the study which provides details about the research. The problem statement, objectives of the study, research questions, aim of the research, goal of the research, justification of the study, scope of the study, operational definition of some terms and finally the organization of the study are all included in chapter one. Chapter two looks at related reviews of publications on contraceptive usage among teenagers and the general application of ICT including key concepts and terms. Chapter three consists of introduction, profile of study area, research design, study population, determination of sample size, sampling techniques, sources of data, data collection instruments, variables of the study, dissemination of findings, quality assurance, methods of data analysis and ethical considerations. Chapter four presents results and interpretation while chapter five looks at the discussions of the research findings. Finally, Chapter six deals with the summary of the study findings, conclusions, recommendations and suggestions for further research.



CHAPTER TWO

Review of Related Literature

2.1 Introduction

This chapter is devoted to the review of literature related to factors influencing the uptake of contraceptives, contraceptive usage and its barriers among teenagers. The literature review looks at the concepts of historical perspectives of contraceptives particularly as they pertain globally. Perceived side effects of contraceptives usage by people in the world are also reviewed to permit a realistic discussion. From that foundation, issues relating to economic importance of contraceptives and contraceptive methods available for use by adolescents are carved as headings for easy reading. Additionally, how ICT influence the attitude and perception of teenagers towards contraceptives, knowledge, attitude and perception of teenagers towards the use of ICT in accessing information about contraceptives, effects of ICT on sexual behaviours of teenagers, ICT usage by teenagers in accessing contraceptives information and barriers to contraceptive usage among teenagers are carefully reviewed to accord a realistic discussion with respect to the specific objectives set in this research work.

2.2 Historical Basis of Contraceptives

At the individual level, many contraceptive providers and available health information from many surveys and annual reports indicate that people's perception about family planning explain them to be for only those who are "mothers" and are not suitable for those who have not yet had a child (Foreman and Mia, 2011). At a more broader level, many people interested in birth spacing advocate for the replacement of the term "family planning" with "contraception" a more neutral term that applies to users with or without families (Foreman and Mia, 2011; Hawkins *et al.*, 1995; Jaccard and Davidson, 2009).



It is a fact that ever since the dawn of history, women and men have wanted to be able to decide when and whether to have a child (Jaccard and Davidson, 2009). Contraceptives have been used in one form or another for thousands of years throughout human history and even pre-history (Lewis, 2009; Himes, 1936). In fact, family planning has always been widely practiced, even in societies dominated by social, political or religious codes that require people to “be fruitful and multiply” from the era of Pericles in ancient Athens to that of Pope Francis I, today (Himes, 1936, RoCHAT, 1967; Tsui *et al.*, 1981b).

Scattered references to contraceptive regulation exist in many historical records (Tsui, Croft and Trevitt, 2009). Himes's work is the prime referral text (Tsui, Croft and Trevitt, 2009). Written records of contraceptive remedies and abortion techniques survived from the Egyptian Ebers Papyrus (1550 BC) (Tanfer, Cubbins and Brewster, 2009), the Latin works of Pliny the Elder (23 to 79 AD) (Tanfer, Cubbins and Brewster, 2009), Dioscorides (*De materia medica*, c 58 to 64 AD) (Smit *et al.*, 2001) and the Greek writings of Soranus (*Gynaecology*, c 100 AD) (Steele *et al.*, 1999). During the flowering of Arabic medicine in the 10th century, a variety of contraceptive recommendations were detailed, particularly in the works of Al-Razi (Rhazes, d 923 or 924 AD (Ross *et al.*, 2000), *Quintessence of Experience*), Al Ibn Abbas (d 994 AD, The Royal Book) (Riddle and Estes, 2008) and Avicenna (Ibn Sina, d 1037 AD) (Riddle and Estes, 2008). As a matter of fact and objectivity, the methods of contraception used before the 20th century were not always as safe or effective as those available today (Thomas and Maluccio, 1995). Centuries ago, Chinese women drank lead and mercury to control fertility, which often resulted in sterility or death (Thomas and Maluccio, 1995; Tsui *et al.*, 1981a).

During the Middle Ages in Europe, magicians advised women to wear the testicles of a weasel on their thighs or hang its amputated foot from around their necks to control pregnancy (Tsui *et*



al., 1981a). Other amulets of the time were wreaths of herbs, desiccated cat livers or shards of bones from cats as a way of preventing pregnancies (but only the pure black ones), flax lint tied in a cloth and soaked in menstrual blood or the anus of a hare to prevent people from becoming pregnant (Welti-Chanes, 1981a). There was also the belief that a woman could avoid pregnancy by walking three times around the spot where a pregnant wolf had urinated (Tsui *et al.*, 1981b).

The ancient scholars referred to methods under these general categories: (1) those that seemed reasonable at the time but are now known to be ineffective (Example wiping out the vagina after intercourse [Soranus]) (Riddle and Estes, 2008); (2) the reasonable and perhaps effective (Example using honey, pepper, alum or lactic acid as pessaries and barriers [Ebers Papyrus, Dioscorides, and Soranus]) and (3) the unreasonable, manifestly ineffective, such as the woman holding her breath at the time of ejaculation or jumping backward seven times after coitus (Riddle and Estes, 2008).

The manufacture of vaginal pessaries from the dung of animals, such as crocodiles (Petri Papyrus), elephants (Rhazes) or mice (Pliny), perhaps reflects Freudian more than pharmacologic concerns, although Himes pointed out, most animal dung is alkaline (Nathan *et al.*, 2004; Omondi-Odhiambo, 1999). By the turn of the 19th century, all the major leads in contraceptive development had taken place (Welti-Chanes, 1981a). Condoms were described as protection against venereal disease by Fallopius as early as 1504 (Noonan, 1967; Omran, 2009; Potts, 2009), but they might have been a device to wear under the foreskin after intercourse. The British seemed to have pioneered making condoms from the caecum of a sheep (Potts, 2009). In 1954, the United Nations held a Population Conference in Rome (Riddle and Estes, 2008). It was followed in 1965 by one in Belgrade but only in the 1974 Bucharest conference did the issue of international family planning gain wide publicity (Ranck, 2011). Further conferences followed in



1984 in Mexico City and 1994 in Cairo (Welti-Chanes, 1981a). Each was very different but none were implemented as intended (Potts, 2009).

2.3 Perceived Side Effects of Contraceptives

According to Potts (2009), in the case of family planning as a method of birth spacing, moral condemnation has often been underscored with threats of physical harm. In a cross sectional study conducted in Yaoundé, Cameroon by Routen and Silas (2010) it was reported that 90% of the teenagers who were sampled to express their opinions on contraceptives perceived family planning as a birth control method making it difficult for women to deliver normally. This finding from the researchers was backed by Steele, Curtis and Choe (1999) when findings from their research on the impact of family planning service provision on contraceptive-use dynamics in Morocco yielded similar results of understanding of contraceptives. It was revealed that most of the findings at the time seem to have collaborated with early reports published by Sutherland. Sutherland wrote that “The majority of gynaecologists ... have reached the conclusion, from clinical observation, that contraception is a cause of sterility, neurasthenia and of fibroid tumours in women”(Tanfer *et al.*, 2009; p13).

Sir Robert Armstrong-Jones, at the time he was a medical authority in Britain, declared, “Birth control often leads to lunacy in women” (Tanfer *et al.*, 2009; p45). If you are to have birth control on a large scale, then it means there is the need to add to your lunatic asylums for women. “I have known from my own practice this is a fact” (Tanfer *et al.*, 2009; p45). The contemporary world may be marginally more objective, but the shadow of the past is easily discernible in the lack of perspective often attendant to reporting the genuine but rare, serious adverse effects associated with some modern methods of family planning. According to Solo (2010), vaginal irritation among women has been reported as a result of frequent spermicide use



before sexual intercourse which disappears upon discontinuation of spermicide use (Roddy *et al.*, 1993). An increased risk of urinary tract infections has been reported with the use of the diaphragm (Oliver, 1995; Nathan, Ulla, and Dairiku, 2004).

In Ghana, women who were not using any form of contraceptive reported that many of their friends who used one form of contraceptive or the other before pregnancy found it difficult to deliver (Alberta, 2008). Researchers have also mentioned perceived side effects of contraceptives identified by Women in Fertile Age (WIFA) to include; Dizziness, bleeding irregularity, breast tenderness, headaches, bleeding may be at the expected time or delayed and fatigue may also be experienced (Potts, 2009; Ranck, 2011; Riddle and Estes, 2008). According to a study conducted by Shah, Zelnik and Kantner (2009) teenagers who refuse to use contraceptives mentioned nausea and vomiting as side-effects associated with contraceptive use. Side-effects that may be seen with progestogen-only injectables are similar to those that may be seen with any progestogen-only contraceptive, namely: irregular, unpredictable, prolonged or heavy bleeding or spotting, breast tenderness, headaches, dizziness, hirsutism, hair loss, nervousness and acne (Riddle and Estes, 2008). Changes in the menstrual bleeding patterns, acne and weight gain are the side-effects of progestogen-only injectables that are commonly of particular concern to adolescents in Zambia (Munyanziza, 1993; Margaret, Diane, and Melville, 2000; Mamun, and Ataan, 2009)

2.4 Economic Importance of Contraceptives

Contraceptive which is mostly used for family planning is defined as the ability for individuals and couples to attain their desired number of children and plan the spacing and timing of their births through the use of contraceptive methods (WHO, 2005). The benefits of contraceptives have become increasingly recognized worldwide, including improved health, economic and



social outcomes for women and families, as well as public health, economic, and environmental benefits at the population-level (Mamun and Ataan, 2009). At the individual-level, the health benefits for women and infants include the prevention of pregnancy related health risks and deaths in women, reductions in infant mortality and the rate of unsafe abortions, the prevention of the transmission of HIV/AIDS from mother-to-child (PMTCT) and prevention of sexual transmission of HIV and sexually transmitted infections (STI) between partners (Lucas and Patricia, 2010; Lewis, 2009; Korir and Mwabu, 2009).

Contraceptive usage also has significant economic benefits for families and for society as a whole (Koray *et al.*, 2000; Lewis, 2009; Lucas, and Patricia, 2010). By slowing the growth of a population, women have more earning potential and families are able to devote more resources to each child, resulting in reductions of poverty (Lucas and Patricia, 2010). The population community continued to balance a concern for individual suffering associated with unwanted fertility with a realization that rapid population growth has serious economic, environmental and social costs (Maletela *et al.*, 2004; Bracken and Farak, 2009). It was also realised that in other areas of their research, many economists held the notion that free markets can solve all problems and population growth is irrelevant to human progress and happiness (Maletela, Nyovani and Ian, 2004).

2.5 Contraceptive Methods Available For Use by Teenagers

Dual protection and dual method use (Condom plus emergency contraceptive)

Barrier methods (male and female condom, jellies, cervical cap and spermicidal foam)

Emergency contraception (Combined Oral Contraceptives-COCs and Progestogen-only Pills-PoPs)

Low-dose combined oral contraceptives (COCs)



- Combined injectable contraceptives (CICs)
- New hormonal delivery systems
- Progestogen-only pills (POPs)
- Progestogen-only injectables
- Progestogen-only implants
- Intrauterine devices (IUDs)
- Natural family planning/fertility awareness based methods
- Lactational amenorrhoea method (LAM)
- Withdrawal
- Male and female sterilization (Bracken and Farak, 2009)

2.6 How ICT Influence the Attitude and Perception of Teenagers towards Contraceptives

There are critical challenges associated with adolescents' search for information on the Internet. A number of authors indicate that adolescents lack the ability to discern the relevance of information retrieved by search engines and do not know which sites to trust (Tsui *et al.*, 2009; Ross, Stover and Wilard, 2000). Teenagers do not consider the source of the content when searching for health information and scan Web pages randomly rather than systematically (Ross, Stover and Wilard, 2000). Other challenges include adolescents' ability to apply identified health information to their own personal health concerns and the need for privacy in accessing information technology.

A number of studies for developed countries have explored adolescents' perceptions and experiences of using the internet to find information about health and medicines (World Bank, 2003; World Bank, 1993; Tanfer *et al.*, 2009). These studies show that the internet is the primary general information source for adolescents, regardless of their socioeconomic and ethnic



backgrounds and most health information is accessed through search engines with a high success rate. In terms of topics investigated, Tanfer, Cubbins and Brewster (2009) found that Canadian teenagers used information technology for school-related reasons in the first place, followed by interactions with friends, social concerns, specific medical conditions, body image and nutrition, violence and personal safety as well as and sexual health.

Another study by Phillips, *et al.*, (1996) reported that sexually transmitted diseases, diet, fitness and exercise, and sexual behaviours were the health-related topics most sought by adolescents on the internet. Inequality in access to contraceptive information due to variety in socio-economic status of people has also been identified as a serious barrier to the success of e-Health programs. Koivusilta, Lintonen and Rimpelä (2007) reported that computer use and by extension contraceptive use was most frequent among adolescents whose parents had higher education or socio-economic status, who came from nuclear families and those who continued studies after compulsory education. In addition to disparities in access to ICTs at home, the researchers found out that, access issues are deepened if several programs suggest that a computer-based system may be a powerful tool for the reduction of risk-taking behaviour by adolescents.

Bosworth, Gustafson and Hawkins (1994) evaluated the effects of BARN (Body Awareness Resource Network), a computer based health promotion/behaviour change system that provided students (grades 6–12) with information and skill-building activities on contraceptive use, AIDS, body management, sexuality and stress management. During the two years that BARN use was studied, it was used heavily by both middle school and high school students, and particularly attracted adolescents who had already experimented with risk-taking behaviours. Those teens at higher risk for escalating problems selected the relevant BARN topics.



Overall, users of BARN were more likely to remain free of risk-taking behaviours than nonusers of BARN. The research results also indicated that, BARN use was also associated with improvements in risk-relevant behaviours such as contraceptive use, stress reduction, cessation of smoking by light smokers, reduction of alcohol use and reduction of problems associated with alcohol use. No relationship was found between BARN use and initiation of sexual activity, stress prevention or onset of either alcohol use or smoking. Apart from the internet, another vehicle with the potential for delivering successful health behaviour interventions is mobile telephone short-message service (SMS). This service has wide population reach, can be individually tailored and allows instant delivery with a synchronous receipt (Abdullah, 2007). In a review of literature Fjeldsoe, Marshall and Miller (2009) found four studies targeted at preventive health behaviours and 10 that focused on clinical care that used SMS to deliver text messages on contraceptive information.

Positive behaviour change outcomes were observed in 13 out of the 14 reviewed studies. For example, Becker, Haefner *et al* (2009) conducted a contraceptive use assessment program using mobile phone text messaging to provide tailored and stage-specific messages to teenagers. The intervention increased contraceptive use rates and reduce multiple sexual partners, indicating that mobile phone text messaging is a potentially efficient and easily disseminated method for providing increased interventions for teenagers. Another study used mobile phone messages to send tailored information to adolescents enrolled in a multidisciplinary sexual and reproductive health (SRH) program. Most adolescents found the messages relevant to them personally and reported that the messages helped them to keep focus (Agwanda, 2009; Abdullah, 2007).

Chetley and Andrew (2007), reported findings of a controlled evaluation of a program strategically geared toward teenagers on “increase contraceptive use for the prevention of



sexually related diseases for primary school pupils.” The program was designed to deliver contraceptive information and services to the teenagers via computer-based educational technologies (fluency-building computer-assisted instruction and simulation-based technology) that promoted learning of information and contraceptive uptake, self-efficacy and social competency. Results demonstrated that the program promoted significantly higher levels of accuracy in objective knowledge about contraceptive information and use relative to other effective programs. Participants in the program also achieved positive outcomes in self reported rates of contraceptive use, intentions to use contraceptives, attitudes toward contraceptive, perception about contraceptive use, beliefs about prevalence of contraceptive use among both their peers and adults and the likelihood of refusing a sexual debut if a partner has no intention of using a contraceptive method.

The program offered the potential of providing comprehensive contraceptive education that is more cost-effective than other efficacious but labour-intensive prevention interventions. Contraceptive provision in many settings continues to be based on outdated medical information, unproven theoretical concerns and provider biases (Hawkins, Matteson, and Tabeek, 1995). Studies have found that in some developing countries 25-50% of women seeking contraceptives are refused services until they are menstruating (Hawkins, Matteson, and Tabeek, 1995). There has been evidence that service providers usually private providers and especially, pharmaceutical and chemical shop owners easily perceived that persons who patronise condoms may be leading immoral sexual lives (Caldwell and Caldwell, 2002; Foreman and Mia, 2011). Health workers attitude is also informed by societal perspective of contraception. In Nigeria, health workers are reluctant to provide adolescents with contraceptives yet are willing to counsel them on contraceptives (Clement and Nyovani, 2004; Hawkins, Matteson, and Tabeek, 1995).



The ability to divulge our professional responsibility from societal perspective on who is eligible to use contraceptives is expected of the ideal health worker (Hawkins *et al.*, 1995). Bongaarts, (2008) assessed the opinions of adolescents regarding an internet based contraceptive monitoring instrument and its individually tailored electronic feedback at a number of schools in The Netherlands. While the majority of students appreciated the internet-based monitoring questionnaire and the individually tailored feedback, one out of three respondents claimed that the information was not new to them, and 40 percent indicated that the information failed to provide them with additional insight into their sexual behaviour.

2.7 Knowledge, Attitude and Perception if Teenagers towards the Use of ICT in Accessing Information about Contraceptives

Knowledge of contraceptive is defined operationally as having heard of a family planning method before. Knowing about contraceptives is presumed to be a first step in stimulating the desire for its use (Riddle and Estes, 2008). Assessment of knowledge about contraceptives therefore does not only determine the extent of awareness and sensitization (Caldwell and Caldwell, 1999; Chetley and Andrew, 2007), but further provides the background for which use of the service is further evaluated. Evaluation in this sense relates to the background characteristics, principally social, of users that influence these awareness and sensitization levels. Oral contraceptives (OCs) were the most popular form of contraception for sexually active Canadian women surveyed in 1998 (Caldwell and Caldwell, 1999).

According to a descriptive study conducted in Jamaica by Bracken and Farak, (2009) concerning knowledge of teenagers aged 11-19 years on contraceptives use. It was revealed that all the respondents who took part in the study have ever heard of contraceptive before. Similarly, a cross sectional descriptive survey by Addai (1999) on teenagers perception of family planning



issues revealed that teenagers in Kenya perceived family planning as bad because it has the tendency of promoting unnecessary sexual activities. According to the Ghana Demographic and Health Survey (2003), contraceptive was known by 98 percent of women and 99 percent of men. Considering that these proportions represented Ghanaians who knew at least one method of contraception. One can best say that knowledge of contraceptives among Ghanaians is exceptionally higher. Knowledge about modern and traditional contraceptive has changed over a decade and half ago (Addai, 1999).

Whereas the latter was popular among Ghanaians, the former is now popular even though users of contraceptives use the traditional methods (Alberta, 2008). It is noted in the Ghana Demographic and Health Survey (2003) that contraceptive knowledge among unmarried women was found to be 100 percent. Condoms, diaphragm, the pill, implant, foam tablet and lactational amenorrhoea were among the methods commonly identified (GDHS, 2008). The survey further revealed that effective contraceptive use even among those at risk of pregnancy is relatively low. On the basis of the 1998 GDHS, of the females and males aged 15–19 who were sexually active, only 20% and 37% respectively, were using some form of modern contraceptive. On the contrary, knowledge of teenagers who were sampled for interview on contraceptives use in Uganda was found to be very low (Bertrand *et al.*, 2005). It was revealed by the report that most of the teenagers mostly from the rural communities who were sampled to be study participants mentioned that they were prevented from discussing contraceptives openly even among their colleagues for fear of being reported to their parents. Similarly, knowledge gap was discovered concerning teenagers in rural Tanzania on contraceptive regarding risks, benefits and side effects in several key areas, but was increased by counselling (Chetley and Andrew, 2007).



The report indicated that 77% of the females and 85% of the males who were sexually experienced adolescents had never used any contraceptive method and 64% of the females and 74% of the males had never used a modern contraceptive method before (Chetley and Andrew, 2007). Getting good news out about the many benefits of contraceptives will enable more teenagers to take advantage of their positive health effects and may help increase compliance (Clement and Nyovani, 2004; Corker and Ligne Verte, 2010). In a cross-sectional survey in rural communities in The Gambia, condom was the most widely known modern contraceptive method since it was cited by 43% of women; the Pill was by only 28%, Injectables 16.2%, IUD 8%, spermicidal foam 2%, and the diaphragm by less than 2% (Kayembe *et al.*, 2003). In a related development, knowledge of postpartum women was assessed in Vietnam. Among women who had given birth within the assessment period, there were specific knowledge gaps and fears about safety of contraceptive use specific to the postpartum time period.

For example, it was explained in Clement and Nyovani, (2004) that, in examining reasons for not using contraceptives within six months postpartum among a sample of women in rural Vietnam, Foreman and Mia (2002) reported that 57% said they were unaware of the need for contraception postpartum and 9% were concerned about the effect of contraceptives on the quality of breast milk and/or their own health. Similar beliefs were reported from mixed methods research with postpartum women in Bangladesh (Kayembe *et al.*, 2003). These authors also reported that the Bangladeshi women in their study were more likely to adopt hormonal methods of birth control after the introduction of supplements to the infant's diet, indicating the influence of breastfeeding and lactational amenorrhea on the timing on postpartum contraception adoption.

In an assessment of gender issues relating to contraceptive use in northern Nigeria, Mustapha and Ismaila (2006), observed that educated and sexually active youth had wide spread



knowledge of contraceptives and this background correlated with the number of methods known. Obviously, such wide knowledge did not necessarily mean such persons had adequate exposure to the use of contraceptives because other decision-making influences could determine its use or otherwise. Even though Mustapha and Ismaila (2006), perceived the respondents to have had enough knowledge, it was discovered that even among the enlightened, decision-making on contraceptive use has the male involvement factor essential. In a study on empowering women in Navrongo and its environs, Ghana, Solo and others observed that health decision making including the use of contraceptives is influenced by traditional beliefs, men animist rights and poverty (Solo *et al.*, 2005).

Despite these, others have observed contrary relations to the use of contraceptives with male dominant variables. Correct information about the health benefits of contraceptives have been linked to more favourable attitudes towards contraceptive use especially among teenagers (Margaret, Diane and Melville, 2000). For example, Clement and Nyovani (2004) reported an association between the belief in the efficacy of condoms and condom use among Ghanaian teenagers. Qualitative research among Ugandan youth found negative attitudes towards contraceptives based on beliefs that contraceptives interfere with fertility and cause reproductive health problems (Mwaila, 2011; Foreman and Mia, 2002).

Negative attitudes towards condoms were also reported and were based on the belief that condoms have an infectious lubricant and have been “purposely infected with HIV by Whites” (Andersen, 2009; Ismet, 2000). A systematic review of qualitative studies across researches in sub-Saharan Africa and South-East Asia found similar negative beliefs; the association of condom use with disease and promiscuity and fears of side effects, especially in infertility with hormonal methods were prevalent (Abdullah, 2007). Across all age groups, perceived and actual



side effects of contraceptive methods emerged from a study as the primary barrier to use and negative attitude towards contraception (Mwaila, 2011). Kenya's Demographic and Health Survey (married women only) found that nonusers who did not intend to use contraception in the future most commonly cited fear of side effects and health concerns due to poor knowledge on contraceptives (Foreman and Mia, 2011). Even when awareness is high among people, poor knowledge of contraception methods and their side effects has been associated with poor uptake leading to teenagers having bad attitude towards contraceptive use (Corker and Ligne Verte, 2010; Chetley and Andrew, 2007).

This finding may be related to the myths and misconceptions that many teenagers hold about potential side effects and negative outcomes of contraceptives especially where there appear to be substantially knowledge gap (Goldsmith *et al.*, 2008). Myths about contraceptives are heard about from peers and partners, whose influence on contraceptive demand and uptake are very paramount (Hawkins, Matteson, and Tabeek, 1995). Similarly, in his study on factors affecting contraceptive use in Ghana, it was explained that Tawiah, using a regression analysis modelling identified that, respondent's age, type of place of residence, religion, ethnicity, desire for more children, marital duration, availability of electricity in the household, husband's approval of contraception, husband's education and occupation, have significant effects on current use of contraceptives (Solo *et al.*, 2005).

Adoption of the most effective methods of contraception requires individual decision-making and negotiation with contraceptive providers. Majority of pregnancies among teenagers are unintended and could be substantially reduced in number by consistent use of contraception; yet close to two-thirds of sexually active young women in Nairobi, Kenya are either nonusers or sporadic users of contraceptive methods (Ian, *et al.*, 2009). The negative effect of high fertility



rate on women and their children as well as the benefits of fertility control are well known. Too many or too closely spaced pregnancies and pregnancies of a woman at too young or too old an age, give rise to health risks for mothers and the infant, with associated higher maternal and neonatal mortality rates. The health of other children in the family is also affected (Karirah-Gitau and Sarah, 1999).

These factors, among others provide health rationale for fertility regulation and family planning, which is now considered an essential element of preventive health care (Solo *et al.*, 2005). The benefits from fertility regulation relate to the broader issue of the status of women (Kauffman-Doig, 2009). The ability of a woman to control her own fertility is one of her basic and important rights. It is presumed that a better regulated sexuality and fertility affects the status of the women socially and economically (Kauffman-Doig, 2009). This is perceived to be reflected in their educational, health and economic status coupled with independence to take decisions on their role and be responsible for their total well-being (Karanja *et al.*, 2005). A number of very personal and individual factors affect the use, non-use and the correct/ consistent use of contraceptive methods by adolescents (Koray *et al.*, 2000). In addition, personal, social and cultural factors in the environment of the adolescent also influence patterns of contraceptive use including: Personal likes and dislikes of the teenager, the community norm prevailing in the area, Perceived risk of contraceptives usage, access to services, cost of services etc. In some instances society may not accept contraceptives due to cultural, religious and economic reasons, coupled with poor provider attitude and cost of service (Tanfer, Cubbins and Brewster, 2009). The more enlightened a teenager would be on contraceptive effects could suppress these hindrances through the application of ICT and still pursue its use whilst the non-enlightened value such social and access issues will make people decide not to use contraceptives (Steele, Curtis, and



Choe, 1999). In a cross-sectional survey of 21 countries in Sub-Saharan Africa, using demographic health survey data, Ross, Stover and Wilard, (2000), established that discussions with partners on contraceptive through the application of ICT inform women of their husbands' attitude towards contraceptive and therefore the intention for them to use. The study also established that women usually do not discuss sexual plans and desire with their husbands especially on matters relating to the number of children to have and spacing of birth but could do so more freely on WhatsApp, Facebook or tweeter (Routen, and Silas, 2010). For all persons to enjoy a choice among contraceptive options, a range of methods must be readily available. Yet measures of access show serious deficits that depress use of each method in most service providers place (Karr, 2010). Countries differ both in the number of methods offered and the extent to which each is made available for users of contraceptives (Karr, 2010).

A woman's well-being and that of her family and community depend on access to quality health information and education (Oyedokun, 2007). There are many examples of ICT use for engaging, educating and informing the community about family planning/reproductive health, HIV/AIDS and other health issues as well as the availability of related services. Most programs make use of SMS and text messaging to effectively reach the teenagers (Oyedokun, 2007).

Knowledge of these personal, social and cultural factors is essential in the planning procedures by which contraceptive services are to be provided to adolescents. This information has to be locally obtained through formal and informal mechanisms (Koenig *et al.*, 1997). It also needs to be regularly updated and evaluated. Services must be provided in such a way that any special requirements associated with the factors listed above are met (Kauffman-Doig, 2009). Sometimes these factors pose challenges that cannot be addressed immediately and developing mid- to long-term strategies may be necessary (Karr, 2010). In Lesotho, a country with multiple



ethnic sets and religious groupings, efforts made by the Ministry of Health (MOH) and other agencies on the use of contraceptives among teenagers have resulted in a general increase over the last two decades (Maletela, Nyovani and Ian, 2004). Published literature on the efficacy of contraceptive counselling and education seems to reflect a significant gap between what providers think they offer and what consumers appear to receive (Karr, 2010). An audit of family planning users in Scotland revealed a 30% discrepancy between the number of women whom clinicians thought they had appropriately counselled and the number of patients who actually understood the teaching (Mamun, and Ataan, 2009). Margaret, Diane and Melville (2000), estimated that up to one third of teenagers require more individualized counselling to use Oral Contraceptives (OCs) effectively.

2.8 Effects of ICT on Sexual Behaviours of Teenagers

Most people are familiar with the use of more conventional ICTs in health interventions, including radio, television, computers, Internet, email, fixed land-line telephones, and fax (Nathan, Ulla, and Dairiku, 2004). Most of these, such as radio and television, have been used for generations with differing results to support a multitude of family planning/reproductive health, HIV/AIDS, and other health programs (Thomas and Maluccio, 1995). Health workers and health organizations are familiar with myriad examples: the driver who transports contraceptives from a warehouse to a clinic based on stock data emailed from a central office; the teenager listening to a radio serial designed to increase modern contraceptive use or to encourage young people to openly discuss contraceptive issues; the teenager who accesses the Internet to research family planning/reproductive health protocols or how to integrate services makes use of ICT (McCalister and Thiessen, 2009)



Linking ICT and global health development is not a new concept, but the proliferation of ICT applications over the last decade is unprecedented (Tanfer, Cubbins and Brewster, 2009). Key global health documents now mention ICTs as a means to support strategic development goals. The United Nations' Millennium Development Goals (MDGs) which have now been change to Sustainable Development Goals (SDGs) calls specifically for increased access to new technologies, but ICTs also have the potential to advance results for other components of contraceptives (Karr, 2010). In particular, ICT applications used for family planning/reproductive health efforts are critical for moving ahead on SDG 3 (ensure healthy lives and promote well-being for all at all ages), SDG 4 (ensure inclusive and quality education for all and promote lifelong learning), SDG 5 (achieve gender equality and empower all women and girls), and SDG 8 (Promote inclusive and sustainable economic growth, employment and decent work for all).

In some instances society may not accept contraceptives due to cultural, religious and economic reasons, coupled with poor provider attitude and cost of service (Tanfer, Cubbins and Brewster, 2009). The more enlightened a teenager would be on contraceptive effects could suppress these hindrances through the application of ICT and still pursue its use whilst the non-enlightened value such social and access issues will make people decide not to use contraceptives (Steele, Curtis, and Choe, 1999). In a cross-sectional survey of 21 countries in Sub-Saharan Africa, using demographic health survey data, Ross, Stover and Wilard, (2000) established that discussions with partners on contraceptive through the application of ICT informs women of their husbands' attitude towards contraceptive and therefore the intention for them to use. The study also established that women usually do not discuss sexual plans and desire with their husbands especially on matters relating to the number of children to have and spacing of birth but could do



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Information is therefore needed on how these factors have changed over time and how they have affected contraceptive use overall and use of individual methods. A woman's well-being and that of her family and community depend on access to quality health information and education (Oyedokun, 2007). There are many examples of ICT use for engaging, educating, and informing the community about family planning/reproductive health, HIV/AIDS, and other health issues, as well as the availability of related services. Most programs make use of SMS and text messaging to effectively reach the teenagers (Oyedokun, 2007). In 2010, a Mobile for Reproductive Health (m4RH) project launched a set of SMS and text messages about eight family planning methods for mobile users in Kenya and Tanzania (Ranck, 2011; Potts, 2009). The nine-month pilot project began in Nairobi in collaboration with nine of the city's health clinics, including two private clinics operated by Marie Stopes International/Kenya and Family Health Options Kenya, the Kenyan Planned Parenthood affiliate (Ranck, 2011; Potts, 2009). The messages were developed using information from evidence-based sources such as WHO's family planning handbook for providers (Ranck, 2011; Potts, 2009).

They conform to the standard 160-character texting limit, and were rigorously tested for user comprehension (Ranck, 2011; Potts, 2009). The m4RH system also provided service delivery information so users can locate clinics for the family planning method of their choice (Ranck, 2011; Potts, 2009). The mobile access codes that clients needed to get into the m4RH system



were publicized on posters, palm cards, and flyers. In the evaluation stage of the project in the two countries, it was discovered that most teenagers had access to reproductive health issues including contraceptives and were also able to make the right decision concerning their contraceptive issues (Ranck, 2011; Potts, 2009). International Conference on Population and Development recognize that appropriate methods for couples and individuals vary according to their age, parity, family size-preference and other factors, and ensure that women and men have information and access to the widest possible range of safe and effective family planning methods in order to enable them to exercise free and informed choice (Ranck, 2011; Potts, 2009). Several investigators (Phillips *et al.*, 1996; Omran, 2009; Routen, and Silas, 2010) have observed that contraceptive behaviour has elements in common with more conventional "preventive health behaviour" (for example, obtaining immunizations, screening tests, check-ups) and that an existing decision model developed to account for the latter behaviour might fruitfully be applied to the former behaviour as well.

2.9 ICT Usage by Teenagers in Accessing Contraceptives Information

The level of, and access to, information are key determinants of contraceptive use and choice. Teenagers frequently lack essential information on the characteristics of contraceptive methods, and the information they do have about contraceptives is often sometimes incorrect (Ross *et al.*, 2000). The myths around reproductive issues can have a large bearing on whether teenagers would seek contraceptives or not and how adolescents seek reproductive-health care (Goldsmith *et al.*, 2008; Ismet, 2000). Focus groups discussion conducted among young people in Nigeria revealed that the myth that contraception was a cause of infertility motivated the seeking of abortion services rather than contraceptive services among teenagers in northern part of Nigeria (Ismet, 2000).





Researchers have also stated that in certain cases teenagers may like to access contraceptive information but may not know how to use the ICT very well and sometimes, the information on contraception available in the internet is not tailored to the needs or expectations of teenagers, and in some circumstances it may be intentionally denied in the internet (Agwanda, 2009). Of the more established ICT-based practices, radio and television use has been well tested and reported, and there are numerous websites and portals dedicated to documenting their results, for example Johns Hopkins University Centre for Communication Programs (JHU CCP), Drumbeat, Soul Beat, infoDEV, K4H, C-Hub, and Communication Initiative are available for references for teenagers in the world (Agwanda, 2009). Current strategic social behaviour change communication (SBCC) interventions use mass media in their structural environmental models and radio and television to reach a large number of teenagers in disseminating contraceptives information which has been observed to be effective and changing behaviour towards contraceptive use (Agwanda, 2009)

In a cross sectional survey to evaluate the use of ICT by teenagers in accessing contraceptives information in Zimbabwe, it was disclosed that many of the teenagers (70%) use their mobile phones to load pornographic films to be watching, few (15%) use their lap tops to download contraceptives information to read while 15% teenagers responded that they use the internet to read many things including key information in contraceptives (Foreman, and Mia, 2002). The emergence of the ICT sector is the ideal vehicle for the dissemination of contraceptive information content among teenagers as majority of these category of people in every community have reliable equipment of modern ICT components capable of accessing vital contraceptive information (Addai, 1999). In many jurisdictions, the many radio sector uses fax, telephone, e-mail, and cell phone to support the use of contraceptives (Bracken and Farak, 2009).

There are countless examples of highly successful family planning/reproductive health-related radio shows, many of which incorporate multiple ICTs in their implementation, such as when a family planning/reproductive health serial program also holds call-in quizzes (by phone), and/or is recorded on audiocassettes to be rebroadcast, perhaps as a means for further community outreach by local NGOs or to broadcast in a local clinic (Foreman, and Mia, 2002; Goldsmith et al., 2008). The SANYU FM radio station in Kampala, Uganda, recently adopted a multiple ICT approach for their programming; they held a radio poll asking listeners what service delivery area (health, education, security, transport, or sanitation) should be the priority especially for teenagers (Foreman and Mia, 2002; Goldsmith *et al.*, 2008).

Using a new tool called TRAC FM, the station solicited listener comments via short message service (SMS), discussed the comments on air, and then created and posted online visualizations of the results on Facebook (Foreman, and Mia, 2002; Goldsmith *et al.*, 2008; Hawkins *et al.*, 1995). Of the listeners who voted, 65 percent said contraceptive issue was the greatest concern. The station continues to solicit listener input on a wide variety of issues. In their use of radio, SMS, and internet to spread contraceptive information, Trac FM is mixing old and new technology to promote public debate and create a powerful feedback loop that allows Ugandan citizens to share their views on contraceptive issues through the use of ICT (Corker and Ligne Verte, 2010)

According to a survey conducted in Turkey by Ismet, (2000) concerning how contraceptive information was access by teenagers. It was revealed that majority of the teenagers who were sampled to take part in the survey indicated that the internet was used to download films, watch movies on line, watch celebrity worldwide and watch football matches. Information and communication technology (ICT) can play an integral part in addressing family planning,



reproductive health, HIV/AIDS, tuberculosis (TB), and many other health needs (Jaccard and Davidson, 2009). It has been noted that ICT methods can be used to inform and educate family planning/reproductive health services and information, educate local clinic staff, inform community health workers, and other service providers, as well as clients (Kahad, 2010).

Appropriately applied, existing ICTs particularly mobile technologies have the capacity to improve access to family planning/reproductive health information and services for women, men, and youth, as well as to increase their opportunities to more effectively engage in the economy, with the ultimate potential to better both their health status and their quality of life (Kahad, 2010). These technologies could also play a role in an overall approach to addressing gender inequities if care is taken to purposely support and encourage their use for and by women (Hawkins *et al.*, 1995; Jaccard and Davidson, 2009). Both radio and television will remain viable ICT tools for family planning/reproductive health, HIV/AIDS, and other health issues for years to come. How they may be transformed by digital broadcasting technology in sub-Saharan Africa and elsewhere remains to be seen in a massive way as many teenagers use the medium to do so many activities (Kahad, 2010). Information highway is understood to originate and flow from the developed countries to the developing world. But, in the past few years, information and communications technology has been a pouring wave into the developing countries (Jaccard and Davidson, 2009). The developing countries have no other choice but to adopt such technologies. Those who do not, risk being further marginalized (Kahad, 2010).

Social media in the world has the tendency to influence teenagers' sexual and reproductive right. Adolescents' fast and early adoption of new information technologies creates important opportunities for engaging youths in preventive services via e-Health (Karr, 2010). The Internet and other information and communication technologies (ICTs) such as mobile phone short-



message service (SMS) constitute cost-effective vehicles to access contraceptives in a widespread manner, and they create opportunities for the use of interactive technologies that can increase teenagers' skills and information about contraceptive assimilation (Karanja *et al.*, 2005; Karr, 2010). A number of contraceptive use interventions, for instance, have been introduced in developed countries through the Internet with relative success (Kauffman-Doig, 2009; Korir and Mwabu, 2009).

While there is little evidence of success of similar programs in less developed countries (Korir and Mwabu, 2009), the potential of e-Health preventive efforts in Uruguay acquires a special dimension when considering the recent introduction of a national education plan aimed at providing each student in the country with a laptop computer with Internet access to access information including contraceptive information and services (Koenig *et al.*, 1997; Lewis, 2009). By the end of 2010 all students in Uruguay's public elementary schools as well as all students enrolled in the first year of public secondary schools were expected to have a laptop connected to the internet to access vital information including contraceptives (Whittaker, 1997; Lewis, 2009).

Computers, specifically personal computers, are an extremely important technology that can be used to strengthen health systems, advance health services, and widely share and exchange health information (Nathan *et al.*, 2004). However, there are significant areas of sub-Saharan Africa where computers are still not in use, and health clinics rarely have staff with the time or requisite skills to champion their use in a sustainable manner (Mwaila, 2011; Karr, 2010). Furthermore, there is little ongoing support from the health system to maintain and upgrade computer equipment or software (Karr, 2010).

While the personal computer penetration rate in households in the industrialized world is over 70 percent, in the Global South, the rate is less than 25 percent (Munyanziza, 1993). Although no



concrete data is available on computer access in health service settings in sub-Saharan Africa, it is likely low especially among teenagers of deprived socio economic status (Nathan *et al.*, 2004). While computer use is frequently associated with Internet use, not all computers are connected to the Internet (Nathan *et al.*, 2004). Handheld devices, including mobile phones, are now being used extensively for Internet access and are generally less expensive and more user-friendly than desk- or laptop computers, and they do not require a constant power source (Omondi-Odhiambo, 1999; Nathan *et al.*, 2004).

Internet penetration in Africa as of April 2011 was 11.4 percent, while the world average is 30.2 percent (Omondi-Odhiambo, 1999; Nathan *et al.* 2004). Nigeria currently has the highest number of Internet users (44 million) across the continent, but only a 28 percent Internet penetration rate (Nathan *et al.*, 2004). In the sub-Saharan region, the Seychelles has the highest penetration rate, at 37 percent, and Sierra Leone has the lowest at 0.2 percent, followed closely by the Central African Republic, Congo, and Niger all at 0.3 percent (McCalister and Thiessen, 2009; Omondi-Odhiambo, 1999; Nathan *et al.*, 2004).

Although large parts of Africa gained access to international fibre bandwidth for the first time in 2009 and 2010 through submarine cables, current broadband penetration in sub-Saharan Africa is less than 1 percent, making bandwidth expensive and connectivity very limited (Nathan *et al.*, 2004). Nonetheless, remarkable telecommunication advances are currently taking place throughout the region, which will have a great impact on Internet use and ICT applications (Korir and Mwabu, 2009; Maletela *et al.*, 2004). New wireless ICTs is revolutionizing all aspects of life and development around the world (Nathan *et al.*, 2004). Previous generations of ICT are being upgraded to digital platforms and open-source software use is increasing transparency and operability (Omondi-Odhiambo, 1999).





People often associate wireless technology with mobile phones and personal digital (or data) assistants (PDAs), but the number and sophistication of wireless products and services is astounding, and many of these are being designed specifically to improve health information, diagnostics, and services (Shah *et al.*, 2009). In 2009, the interest in mobile technology for health spurred the launch of the mHealth Alliance to “harness the power of wireless technologies to improve health outcomes in low- and middle-income countries” (Routen, and Silas, 2010; Omondi-Odhiambo, 1999). The numbers are indisputable. There are now more than 5 billion wireless subscribers worldwide and more than 70 percent of them live in low- and middle-income countries (Nathan *et al.*, 2004). Commercial wireless signals cover more than 85 percent of the global population, providing a much greater reach than the electrical grid (WHO, 2005; Omondi-Odhiambo, 1999).

Wireless technology does not rely on fixed telephone landlines, which are uncommon in many places throughout Africa. In 2009, sub-Saharan Africa had more than 300 million wireless subscribers and the mobile phone coverage was at 60 percent (Smit and Venter, 1993). Beyond what wireless technology can do for the end-user, it also provides significant revenue for governments; between 2000 and 2012, sub-Saharan governments received US\$71 billion in tax revenues from the wireless industry (Oyedokun, 2007; Ranck, 2011; Omondi-Odhiambo, 1999)

In theory, any available ICT could be used to directly or indirectly support family planning, reproductive health, and HIV/AIDS activities and help build the capacity of health providers and clients alike. An ICT that “improves the ability of a person or entity to carry out stated objectives” has been noted to be very good (Stephenson and Madise, 2007) and can be viewed as an element of capacity-building and systems strengthening. The variety, availability, and the cost of ICTs directly affect usefulness and uptake of contraceptives among teenagers (Omondi-

Odhiambo, 1999). How well people can use them depends on ICT literacy and operability (Omondi-Odhiambo, 1999; Nathan *et al.*, 2004). The use of ICTs in health is not merely about technology; ICTs are a way to achieve a series of desired outcomes, for example: People having better access to the information and knowledge they need to make informed choices for their own better health (Tanfer *et al.*, 2009).

ICT can play a vital role in training and updating the knowledge and practices of teenagers and professionals in nursing and medical schools, health facilities, urban settings, and particularly rural areas, where it is often needed the most (Omondi-Odhiambo, 1999). For example, ICT can support healthcare workers in remote hospitals, health centres and dispensaries, which are typically under-staffed and service hard-to-reach populations (Tuladhar and Holoway, 2009). Family planning services can use ICT to enhance provider skills and take health care worker productivity to the next level, helping them to update their knowledge and also maximize their direct interaction with patients (Tanfer *et al.*, 2009).

The technology already exists to deliver on-site, high-quality health opportunities to health care workers in remote and rural areas through individual handheld devices and computers receiving relevant data directly from satellite feeds (Tanfer *et al.*, 2009). According to Riddle and Estes, (2008), eighty-three percent of Malawi's population lives in rural areas, and thus family planning/reproductive health and HIV/AIDS services are largely delivered in community health centres and district hospitals located miles from rural villages. To increase access to these services, Malawi's Ministry of Health (MOH) has been working with coordinating partners to revitalize a cadre of volunteer community health workers (CHWs) to bring contraceptives and family planning/reproductive health and HIV/AIDS education directly to the rural population through mobiles SMS (Riddle and Estes, 2008).





The USAID-funded K4H pilot project promotes family planning/reproductive health and HIV/AIDS information use and exchange, and aims to increase access to up-to-date information on these topics through the use of district health learning centres, electronic health information toolkits, and a SMS-based mobile telephone network to benefit managers and service providers at the national, district, and community levels to improve family planning/reproductive health and HIV/AIDS services (Riddle and Estes, 2008). The reality in most countries, however, is far different. Most countries offer only a limited choice of contraceptive methods, and couples cannot easily choose the method that best suits their reproductive needs even through the internet (Margaret *et al.*, 2000; Lucas and Patricia, 2010). In fact, international programme effort scores for 1994 showed that large proportions of people in most developing countries did not have ready access to a variety of contraceptive methods (Korir and Mwabu, 2009). Couples had essentially no access to the IUD in 30 countries, no access to female sterilization in 37 countries and no access to vasectomy in 61 countries (Tanfer *et al.*, 2009). Many African countries had low access scores on almost every method (Korir and Mwabu, 2009).

In the 1999 ratings for 88 countries in the world, only 65% of countries offered the pill to at least half their population, 54% the IUD, 42% female sterilization, 26% male sterilization and 73% the condom (Thomas and Maluccio, 1995). Substantial evidence indicates that a restricted choice of contraceptive methods has constrained the opportunity of individual couples to obtain a method that suits their needs, resulting in lower levels of contraceptive prevalence (Korir and Mwabu, 2009). A study noted that in Taiwan, each new method seemed to add another layer of use to existing prevalence; similar increases were evident in South Korea, Thailand and Hong Kong (Thomas and Maluccio, 1995). Similar study found that broadening the choice of contraceptive methods increased overall contraceptive prevalence in Matlab, Bangladesh, where

household provision of injectables in early 1997 helped raise contraceptive prevalence from 7% to 20%, the introduction of tubectomy services in 1998 helped increase prevalence by an additional ten percentage points, and household insertion of IUDs in 1989 elevated prevalence yet further (Zelnik and Kantner, 2009).

Solo, (2010) has estimated that the widespread addition of one method to the options available in a country would be associated with an increase of ten percentage points in contraceptive prevalence. Like availability, the prevalence of contraceptive use has risen markedly over the decades (UNFPA, 2004). The latest United Nations review, using surveys that cover 85% of the developing world's population, shows that "almost all of the less developed countries with trend data experienced an increase in the level of contraceptive use (UNFPA, 2004). Over an average period of 9.5 years, use increased by at least one percentage point per year, or 10 points per decade, in more than two-thirds of the countries and by two points or more annually in 11% of the countries. By region, the UN's medium estimate is highest for East Asia (83% of couples using a method), followed by Latin America and the Caribbean (66%), other Asian regions (44%), northern Africa (42%) and Sub-Saharan Africa (14%) (Stephenson and Madise, 2007; Tuladhar and Holoway, 2009).

2.10 Barriers to Contraceptive Usage

An intrapersonal barrier to contraceptive use is that it is perceived as interfering with the "pleasure, spontaneity, or convenience" of sex (Bertrand *et al.*, 2005). The major reported barriers to continuation of a birth control method, among teenagers as among adults, are problems with the method: side effects that are experienced in conjunction with current use nausea, pain, weight gain and/or fear of future negative side effects (Clement and Nyovani, 2004). It should be noted however, that because unforeseen "medical" complications are a



legitimate reason for the discontinuation of any medically prescribed therapy, these reasons may be offered for discontinuation of medical methods even if other reasons are, in fact, more significant.

Clement and Nyovani, (2004) identified lack of support from friends, parents, or partners as barriers to contraceptive use among teenagers. Similarly, clinic fees and the cost of contraceptives themselves may not be affordable by adolescents, or they may have to take time off from work or school to attend service providers place to acquire one (Addai, 1999). Throughout the literature in developing countries, economic underdevelopment and poverty are contextual factors identified as determinants of contraceptive use and the uptake of sexual health services (Kahad, 2010). The upstream factor of poverty is often manifested as structural barriers in the environment or health system. With limited health services available in many settings, especially in rural areas, proximity to the clinic is a major barrier to women (Kahad, 2010). In a Ugandan study, the most common obstacle to contraceptives use identified among women was a lack of access to quality commodities and information in health facilities (Abiodun and Balogun, 2009). Similarly, Bracken and Farak, (2009) found proximity to a private health facility was positively associated with current contraceptive use among Ugandan women than public health facilities. Even when women live in close proximity to a healthcare facility, the availability of a range of contraceptive methods and the quality of services provided at those facilities may be lacking (Bracken and Farak, 2009). Failure to provide universal access to contraceptives to people has been documented throughout resource-limited settings, with cases of contraceptive stock-out and limited choice in methods commonly reported, especially in rural areas compelling people to be very reluctant to use contraceptive (Foreman and Mia, 2011). Sub-Saharan Africa



has been identified as having the least availability and the least variety of methods of contraceptives to meet the ever growing demand of variety by their people (Ismet, 2000).

Adequate supply included not only the availability of contraceptives, but access to trained staff, protocols of treatment, follow-up care, cost, and the environment of health facilities (Foreman and Mia, 2011). In addition to perceived or actual partner acceptance of contraception, partner's fertility desires are important to consider in this context. In many sub-Saharan countries and in other developing nations, individuals tend to favour large family sizes (Jaccard and Davidson, 2009), with cultural status often tied to family size for both men and women (Jaccard and Davidson, 2009). Kenyan women cited the need to have many children as a way to keep their husband satisfied and to avoid abandonment and social stigma (Karr, 2010).

High infant and child mortality rates in resource limited settings also contributed to the desire for a high number of pregnancies, as it is often anticipated that only a portion of pregnancies will lead to children that survive infancy and childhood (Koray *et al.*, 2000). Not surprisingly, research indicated higher fertility desires among couples is associated with less contraceptive use (Abdullah, 2007). Furthermore, qualitative studies in Nepal indicated that one's religion has a strong influence on family planning; Ugandans identifying as both Catholic and Muslim cited their religion as a major reason for not using contraceptives and for their desire for a large family (Kahad, 2010).

Another key barrier to effective contraceptive use is lack of physical and financial access to family planning commodities (Karr, 2010). Studies have shown that health facilities offering family planning are not equitably distributed throughout the country (Solo, 2010). Women complain of frequent stock-outs and the associated costs of lost wages, transport and other financial challenges. Studies have shown that, among youth, lower socioeconomic status has



been associated with less contraceptive use (Solo, 2010). Shame is also a significant factor preventing use of family planning (specifically condoms), particularly for unmarried youth (Solo, 2010; Karr, 2010).

Young people perceive women who carry condoms as promiscuous, and that asking a partner to use condoms would reveal them as sexually wayward or untrustworthy (Karr, 2010). Young people also noted that while married people may freely ask for family planning, they are inhibited because of the shame associated with procuring contraceptives (Abdullah, 2007; Karr, 2010). A study among a fairly representative sample of teenagers in Nigeria found misinformation about contraceptive to have a negative effect on use and accurate information to have a positive effect on use (Karr, 2010). Myths and misinformation negatively related to contraceptive use included the belief that contraception makes women become promiscuous, contraception causes cancer, and contraception is expensive (Karr, 2010; Smit and Venter, 1993). Underdeveloped logistical systems leading to frequent contraceptive shortages are reported in Uganda, as is a shortage of skilled staff, and other health and social concerns competing for the limited resources available (Zelnik and Kantner, 2009). Research in Ghana reports mistrust of service providers as a major barrier to accessing sexual and reproductive health services among people especially teenagers for fear of being exposed by health workers to their friends or parents (Kahad, 2010) and the presence of three or more service providers trained in providing integrated reproductive health services has been associated with contraceptive use (WHO, 2005), highlighting the importance of skilled providers.



Conceptual Framework

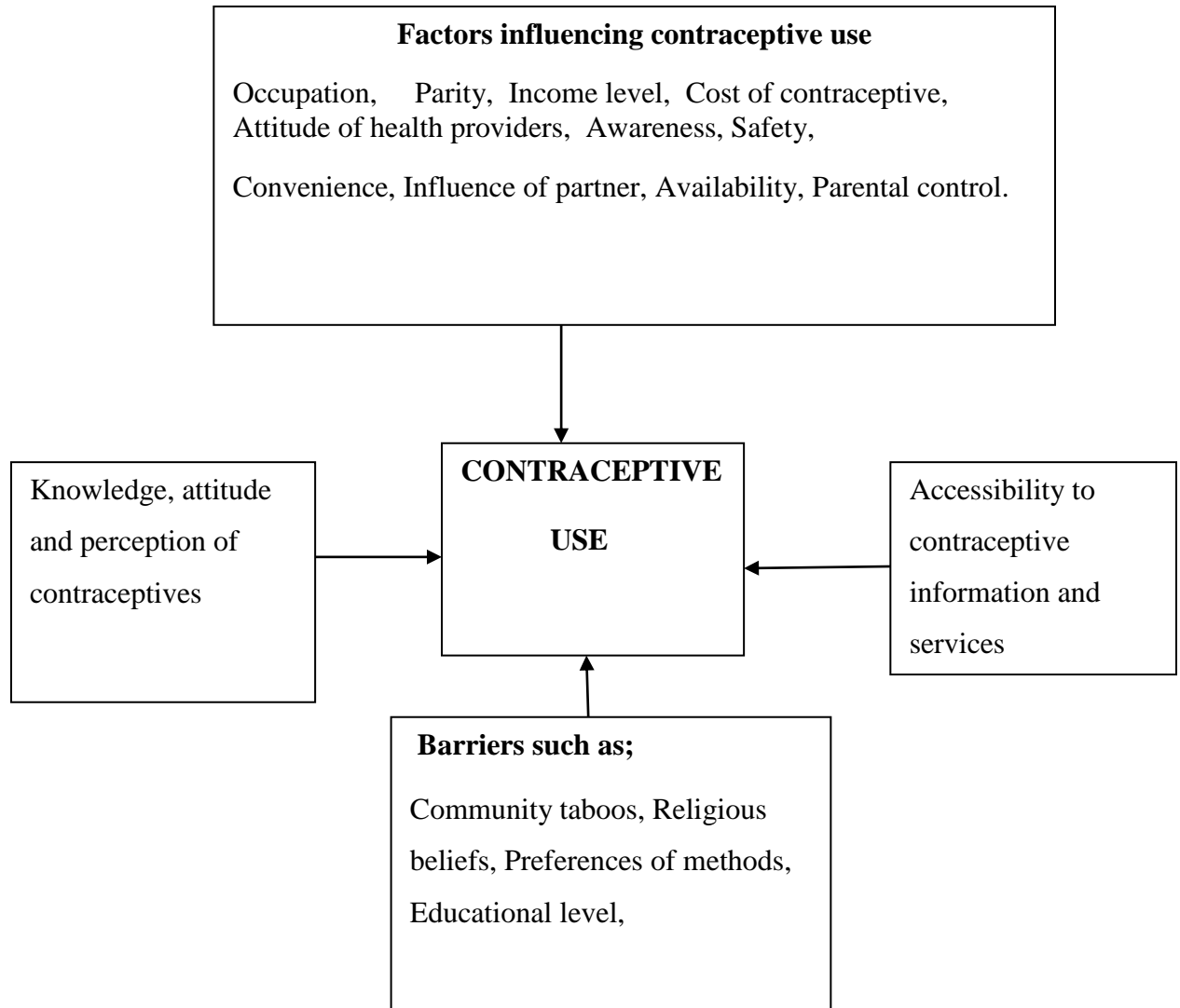


Figure 1.1

Source: Researcher's Own Construct, 2015

It has been widely recognized that the knowledge, attitude, perception and barriers affect teenagers' use of contraceptives in many countries. Accessibility to contraceptives information and services further influence teenagers' use of contraceptives. Poor accessibility could therefore lead to low use of contraceptives whereas the contrary would lead to an increase in use. Further



accessibility characteristics, which are connected and influenced by barriers such as occupation of the person, income level of the person, cost of commodity, parity of the person, attitude of service provider, influence of partner and services available at places contraceptives are sought influence it uses.

Other identifiable barriers having the possibility of influencing commodity usage among teenagers are; religious beliefs of the person, community taboos, personal likes and dislikes of contraceptives, choice of preference and educational level of the person. Knowledge and use of contraceptive information, has a direct and indirect influence on contraceptive use. Directly, a more enlightened person on contraceptive may use it but the less enlightened, may doubt its potency and its benefit and therefore may not find it attractive to use. Indirectly, issues of social and accessibility may affect the patronage of family planning (Tsui *et al.*, 1981b).

In some instances society may not accept contraceptives due to cultural, religious and economic reasons, coupled with poor provider attitude and cost of service (Tuladhar and Holoway, 2009; World Bank, 2003). The more enlightened on contraceptive effects could suppress these hindrances and still pursue its use whilst the non-enlightened values such as social and access issues will make people decide not to use contraceptives (Steele, Curtis *et al.*, 1999; Thomas and Maluccio, 1995). An individual's experiences at health facility will also have either a negative or positive effect on the use of contraceptives. Teenagers for instance are sometime exposed to negative behaviours from health professionals when seeking contraceptive services. However, the society influence on the health professionals sometimes account for such negative behaviours. Influences like religion and community taboos hinder the promotion of contraceptives education among teenagers. Another issue of importance is the cost involved in accessing contraceptives. Teenagers economic status is usually low coupled with low knowledge



level about contraceptives, hence the lack of prioritization of contraception among teenagers. There is the need for parents and guardians to understand and accept the responsibility to introduce contraceptives to their children.



CHAPTER THREE

Research Methodology

3.1 Introduction

This chapter contains the research methodology that was used in the research study. It comprise profile of the study area, research design, study population, sample size determination, sampling techniques, sources of data for the research, data collection instruments, quality assurance, variables, limitations of the study, dissemination of findings, methods of data analysis and ethical considerations.

3.2 Brief Profile of Study Area

3.2.1 Location of the Municipality

The study was conducted in the Sunyani East Municipality with Sunyani Township as its administrative capital. Sunyani East Municipality shares boundaries with Sunyani West District to the North, Dormaa District to the West, Asutifi District to the South and Tano North District to the East (GSS, 2010). The municipality has a total land area of 829.3 Square Kilometres (320.1square miles).

3.2.2 Climate

The municipality falls within the wet Semi-Equatorial Climatic Zone of Ghana (GSS, 2010). The mean monthly temperatures vary between 23°C and 33°C with the lowest around August and the highest being observed around March and April (GSS, 2010). The relative humidity is high, averaging between 75 and 80 percent during the rainy seasons and 70 to 80 percent during the dry seasons of the year which is ideal for luxurious vegetative growth (GSS, 2010).

Sunyani East Municipality falls largely within the Moist-Semi Deciduous Forest Vegetation Zone. Most of the primary vegetation can be found in patches around the north-west, east and



southern parts of the Municipality (GSS, 2010). The Municipality experiences double maxima rainfall pattern (GSS, 2010). The main rainy season is between March and September with the minor between October and December (GSS, 2010).

3.2.3 The People / Population

The growth of the District population has been on the increase year by year. Apart from the natural growth rate of the population, migration of people especially students and workers who are attending universities in the region but are residing in Sunyani are contributing factors to the current population of the Municipality (GSS, 2010). The current population is estimated at 134,958 by the 2010 housing and population census (GSS, 2010). The municipality has diverse ethnic background because its capital serves as the administrative capital for the region and as such offers certain services not existing in most sub-districts (GSS, 2010). There are nine main identifiable ethnic groups in the Municipality (GSS, 2010).

Akan the majority ethnic group constitute 71.1 percent; Ga Adangme represents 2.1 percent whereas Ewe constitutes 3.2 (GSS, 2010) with other tribes from the northern part of the country constituting 19.3 percent (GSS, 2010). Predominantly Christians, Islam, and Traditional groups form the main religious groups in the Municipality (GSS, 2010).

3.2.4 Social, cultural and economic structure

The Municipality has traditional leaders who form part of the Sunyani Traditional Council which is composed of 22 divisional and sub chiefs and is headed by the “Omanhene”. There are about 27 settlements under the jurisdiction of the Sunyani Traditional Council. The Traditional Council is the Traditional Authority of the people and has the responsibility to mobilize its people for development and the overall wellbeing of the people (GSS, 2014). The Municipality consists of diverse ethnic and religious affiliations thereby allowing the harmonization and promotion of



peace. The religious affiliations include Christians, Islam and Traditional religion, with the Christians having the largest percentage of the population. Traditional religion constitutes the least while there are those who do not belong to any of the groups.

Currently the service sector employs majority (58.3%) of the population in the Municipality. Although the economy used to be predominantly agrarian, the development of commercial, industrial and service activities encourages diversification of the local economy. There are quite a number of financial institutions that are found in the Municipality. These comprise of banks and non-bank financial institutions such as micro finance companies, savings and loan companies as well as insurance companies, (GSS, 2014).

3.2.5 Educational infrastructure

The municipality has a total of 87 JHS (50 Public/ 37 Private), 6 SHS (4 Public/ 2 Private) and four tertiary institutions (2 universities, 1 polytechnic and 1 nurses training college). Given the criterion that persons aged 15 years and above who complete basic school (Primary, JSS or Middle school level) are literates, about 76 percent of the population of the municipality are literates. The municipality can therefore be said to be highly literate when compared to the national average of 53.3 percent. This situation allows for majority of people to understand and get involved in the development process of the municipality, (MHD, 2014).

3.2.6. Health infrastructure

The Municipality offers all individuals the eligibility for seeking health services. It is in this line that services are provided in all health facilities both government and private, market places and in the communities to reach all eligible clients. Six hospitals, twelve clinics, seven chips compounds, three maternity homes and three health centres provide health services to the municipality (GSS, 2014).



3.3 Research Design

A survey method is the technique of gathering data by posing questions to people who are considered to have the desired information. Surveys are used when the researcher needs to generalize from a sample to a given population that inferences can be made about some characteristic, attitude or behaviour of a given population. The research employed descriptive cross sectional survey study design. A critical analysis of descriptive cross sectional survey design describes phenomena under investigation in a wider coverage within a short period using largely questionnaires and interviews. This type of study design offers the researcher the opportunity to measure both exposures and outcomes at the same time during the research period at the study area (Creswell, 1994). Considering the determinants that were investigated by the research, this study design was appropriate.

3.4 Study Population

The study involved both male and female JHS and SHS students (both private and public schools) who were teenagers aged 11-19 years and were available at the Sunyani East Municipality at the time of the research and were willing to participate in the research. The 11 and 12 years were included because of their huge numbers in the Junior High Schools and exposure to issues of sexuality. These categories of respondents were sampled and used as the study subjects because they were considered as information rich group. Additionally, it should be remembered that the number of teenagers married while in teenage is not insignificantly increasing in the study area.

3.5 Sample Size

The study involved two hundred and twelve (212) study respondents comprising of (90) males and (110) females in the JHS and SHS within the Sunyani East Municipality. This sample size



was purposefully selected considering the number of students willing to participate in the research, the unwillingness of some head-teachers to allow students answer questionnaires due to the sensitive nature of the questions, time and resources available for the researcher to have completed the research work. The rest of the sample was purposefully selected from the adult males within the municipality and staff of the reproductive and child health unit of the Municipal Health Directorate.

3.6 Sampling Method

The municipality has a total of 87 JHS (50 Public/ 37 Private) and 6 SHS (4 Public/ 2 Private). There are 5 circuits within the municipality with an average of 17 JHS in every circuit. The researcher therefore chose 10% of JHS schools from each circuit ($1.7=2$) and all the 6 SHS within the municipality to make a total of 16 schools. The researcher then purposefully used the number of students willing to participate in the study in each school as the sample frame for that particular school. Systematic random sampling method (N/n ; $N/12$ where N =population of students willing to participate in the study at a school and 'n'= sample size needed in each school) was used to determine the sampling interval considering the sample frame in each of the schools. This procedure was used in all the 16 selected schools until a total of 192 respondents were chosen. However a simple random sampling was further employed to select rest 8 subjects from the four most populated SHS to make up the total 200 respondents needed for the data questionnaire administration.

Purposive sampling was also used to select 10 males within the municipality (two from each circuit) based on their willingness to discuss issues relating to contraception in teenagers. They were selected based on the fact that contraceptive use by teenagers can be influenced by partners who may be older as well as parents and guardians; hence the view of adults was very important.



Two (2) reproductive and child health (RCH) staffs were also interviewed about the patronage of teenagers on contraceptives and family planning as a whole. Their views were then considered in the analysis, discussions and summaries.

Data collection began in October after an approval by my supervisor and lasted for a period of three weeks. The researcher explained the purpose of the research to heads of institutions and respondents in the study area. Respondents gave their consent to participate in the study before the administration of questionnaires and interviews were conducted.

3.7 Variables

3.7.1 Dependent variables

Availability of contraceptive information and services through ICT and health facility is dependent variables and were measured as the proportion of teenagers who accessed such facilities and could access them freely at a particular point in time on their own.

3.7.2 Independent variables

The independent variables in this study were socio demographic characteristics like age, religion, education level and marital status. Health factor variables like behaviour of health workers, availability and accessibility to ICT, shortage of commodities, medical supplies, equipment and distance to health facility were also measured. Other variables were traditional beliefs, perception of health services availability.

3.8 Data Collection Instruments

3.8.1 Questionnaire Administration

A questionnaire made up of both close and open ended questions were employed to collect primary data from the respondents. All the 200 respondents who were selected to answer the questionnaire were willing to fill in questionnaire prepared by the researcher. The use of the



questionnaire in the study area gave the researcher an opportunity to better describe the socio-economic characteristics of the respondents. Close ended questions were accompanied with very possible responses categorized to allow respondents to easily select the most applicable to them while open ended questions were left open to allow respondents to provide their own responses. With the aid of the questionnaire, the responses helped in analyzing the specific objectives of the study.

3.8.2 Interviews

Face to face interview was used to collect the data from the two staffs of the reproductive health unit in the Sunyani East Municipal Health Directorate as well as ten adult males within the municipality. The interview guide was structured using the study objectives. This made the interview very easy for the researcher. The use of this data collection method helped the researcher to gain more insight into the family planning and contraception accessibility and its challenges within the municipality.

3.8.3 Key Informants

Key informants from the Sunyani Municipality were contacted to assist in providing responses on the effects of ICT on sexual behaviours of teenagers. A total of 3 key informants were circuit supervisors selected purposively from Municipal Ghana Education Service Office. These officers also provided information on ICT usage by teenagers in accessing contraceptives information specifically as they relate to the study area. The responses were however in agreement with the responses from the RCH unit in the Health Directorate.

3.9 Sources of Data Collection

The sources of data for the research work were gathered mostly from primary and secondary sources. The primary source of data was collected raw from the respondents in the study area.



The secondary data sources however, were from the review of relevant materials such as; books online, periodicals, Journals, annual reports of World Health Organization, MOH – Municipal Directorate Reports and Ghana Health Service Reports. All researched materials were duly acknowledged in the appendix of this research work.

3.10 Data Analysis and Presentation

The completed questionnaires were crossed checked for completeness and accuracy. The questions were then coded and entered into the excel computer software for analysis using Microsoft Word 2013. Descriptive statistics were used to analyze the primary data from the respondents. The descriptive tools were tables, pie chart and bar charts. Variables included in the research tools that were found after the data collection not to be necessary were excluded from the analysis.

3.11 Quality Control

The research tool was always cross-checked after administering to ensure that all questions applicable to the respondents were answered correctly and appropriately recorded or ticked. After the data collection exercise from the field, the questionnaire were put in secured places for data cross checks. Research tools that were coded and entered into the computer software for analysis were put in secured places.

3.12 Limitations of the Study

The study was constrained by many factors among which was inadequate access to previous data related to the research topic because of extreme data gap situation in the country and this in a way hindered in-depth analysis of some of the objectives of the study. There was limited access to large respondents especially from the JHS and SHS, some of the head teachers, time and resources for data collection which also influenced the sample size. The researcher however



applied randomization during the data collection which helped in obtaining responses evenly to avoid the data being compromised.

3.13 Dissemination of Findings

Once the project is completed, the researcher seeks to share the findings with health workers, stakeholders and policy makers in the country through stakeholders meetings, professional conferences, media programs and publications in health related journals for public access.

3.14 Ethical Considerations

Ethical issues that were considered in this study included ethical clearance from the University for Development Studies and consent from the respondents for primary data that were collected in the educational institutions as well as permission obtained from the authorities before the administration of the data collection tool in the schools. All the respondents were informed that their participation in the research work was voluntary and that they have the right to withdraw from the study if they wish to do so any time. The anonymity and confidentiality of respondents were ensured once respondents did not indicate their names or other identifying information on the questionnaire that were likely to be used to trace them. Collection of secondary data from the health institutions and education directorate was also possible by approval given on the bases of an introductory letter from the University for Development Studies.



CHAPTER FOUR

Results

4.1 Introduction

This chapter presents the results from the data that was collected from the respondents. Data was obtained based on the relevant variables and was used for the analysis. The data was analysed using descriptive statistical methods such as pie charts, tables and bar charts. The analysis of the primary data collected from respondents was based on key areas pertaining to respondent's background. Variables that were insignificant were excluded from the analysis and subsequently not used for discussion in chapter five. For ease of reading and convenience, the chapter puts the various headings and sub-headings in bold and carefully analysed according to the results obtained from the respondents.

4.2 Socio-Demographic Background of Respondents

The research covered certain key bio data of respondents on age, sex, educational level, marital status and religious status. The average age of the respondents was 14.96 years with the minimum age being 11 years while the maximum age 19 years. The socio-demographic background of the respondents are shown in Table 4.1 below under the following headings; age, sex, educational level, marital status and religious status.



Table 4.1: Socio-demographic characteristics of respondents

Variable	Frequency	Percent
AGE (years)		
11-15	120	60
16-19	80	40
Total	200	100
Sex		
Female(10 married)	110	55
Male	90	45
Total	200	100
Educational level		
JHS(2married, 14yrs each)	120	60
SHS(8 married, 15-19yrs)	80	40
Total	200	100
Marital status		
Single	190	95
Married(9% of females)	10	5
Total	200	100
Religious status		
Christianity(3married)	166	83
Islamic(7married)	26	13
Other	8	4
Total	200	100



Source: Field data, 2015

From Table 4.1 it is clear that more than half 120 (60%) of the respondents were between the ages of 11-15 years while 80 (40%) of the teenagers were between 16-19 years at the time of the research within the study area. On the issue of sex of respondents, more than half of the respondents representing 55% were females while 90 (45%) respondents were males. A very high proportion 120 (60%) of the respondents had Junior High School education with only 80 (40%) of respondents having secondary education.

The result also shows that most respondents 189 representing (94.5%) were single or in consented relationship while 11 (5.5%) respondents were married at the time of the research work. The results further revealed that majority (166) respondents representing 83% were of the Christianity faith with only 26 respondents (13%) and 8 respondents (4%) being Muslims and other religions unspecified by respondents respectively.

4.3 Knowledge, Attitude and Perception of Teenagers towards the Use of ICT in Accessing Information about Contraceptives

Knowledge of people on contraceptive information and services is generally believed to be always linked to the performance of a specified task with less difficulty related to contraceptives. In several studies about contraceptive knowledge and use, contraceptives are generally classified into two types: modern and traditional methods. Modern methods include the Pill, intrauterine device, Injectables, Spermicides, Condoms (male and female), female and male sterilization and Norplant. Traditional methods usually include periodic abstinence or rhythm, withdrawal and folk methods (such as using charms, herbs, etc). In some settings, the known methods of contraception include prolonged abstinence, breastfeeding, Billing or mucus or natural family planning. The most popular contraceptive methods known by almost every teenager are; oral contraceptives (15%), condom for males mostly (75%), injections (8%) and withdrawal (2%). It is common to believe that, should teenage girls insist on contraceptive use the number of unplanned pregnancies may reduce. Unplanned pregnancies would be reduced significantly if women chose to use reliable methods of birth control that are less adherence-demanding (implants, injections or IUD) and if significant numbers of condom users became dual-method users in conjunction with a hormonal-based method.



Teenagers these days with the support of modern equipment can assess several information on the internet including contraceptives information and many other relevant information that are worth reading to better enhance their knowledge of contraceptives.

The results show that an over whelming majority of the respondents (97%) stated they have ever heard of contraceptives while a relatively smaller number (3%) however, stated otherwise. This high knowledge of respondents is not surprising as all of the teenagers used for the study were literates and this probably might have informed their knowledge. Moreover, at the time of conducting the research, majority of the respondents were in possession of mobile phones which these days have become common among teenagers, therefore one cannot rule out the possibility of these respondents accessing contraceptive information by the use of these devices.

Table 4.2: Meaning of contraceptive

Variable	Frequency	Percent
Medicine to stop pregnancy	150	75
Medicine for women only	20	10
Medicine that prevents women from giving birth	30	15
Total	200	100

Source: Field data, 2015

Table 4.2 revealed that more than half of the teenagers 150 (75%) explained contraceptives to be any medicine that can stop pregnancy, 30 (15%) respondents explained contraceptives to be medicines that prevents women from giving birth while a relatively lesser 20 (10%) number stated that contraceptives are medicines solely for women. These different or various



explanations put forward by respondents are not new as many adults could have also perceived contraceptives to be similar explanations.

Respondents were also asked to mention their sources of knowledge on contraceptives. some of the respondents representing 39% mentioned the radio or television, this high number is not surprising as many teenagers would naturally prefer to watch television or listen to their favourite programs on radio and occasionally, advertisement on contraceptive could be played or better still sex education on television nowadays is common, 32% of respondents stated School, 14% of the respondents identified the internet while 15% respondents identified other sources such as friends, parents, religious leaders, hospitals and bill boards.

Table 4.3: Sources of contraceptives for respondents

Variable	Frequency	Percent
Market	40	20.0
Chemical store	5	2.5
Drug peddlers	4	2.0
Pharmacy	40	20.0
Friends	90	45.0
Health workers	11	5.5
Hospital	10	5.0
Total	200	100

Source: Field data, 2015

Table 4.3 revealed that respondents access contraceptives from different sources. Majority of the respondents (90) representing 45% mentioned their friends as their main source of contraceptives, 40 (20%) respondents and another 40(20%) stated the market and pharmacy



respectively. The rest of the sources are clearly indicated in Table 4.3 with one respondent obtaining or accessing contraceptives from at least one source.

Perception of respondents towards contraceptives use

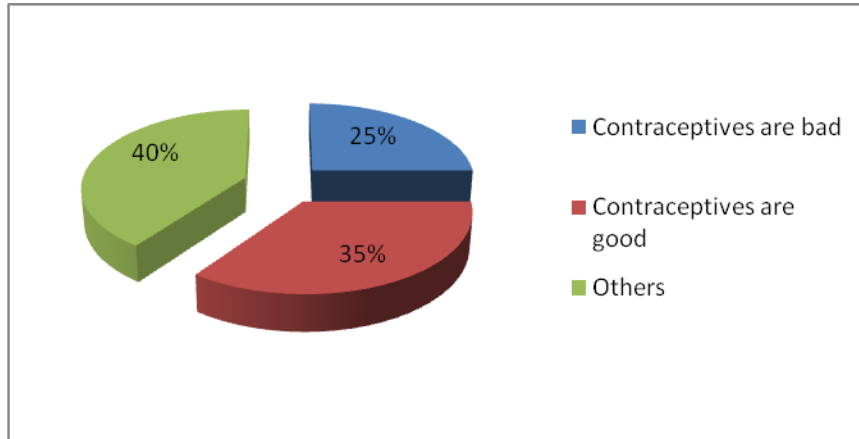


Figure 4.1:

Source: Field data, 2015

From Figure 4.1, the results show that 35% of the respondents perceived contraceptives to be good while 25% respondents perceived it to be bad. Forty percent (40%) respondents could not tell whether contraceptives are good or bad. It is important to state that an individuals' perception towards contraceptives influenced the attitude toward the use of contraceptives. And that explains why assessing teenagers perception of contraceptives use is paramount in a research of this nature.

Respondents were assessed on their knowledge as to whether using ICT to access contraceptives could be a possibility. Majority (60%) respondents had knowledge that contraceptive can be accessed through ICT while 40% respondents mentioned that they had no knowledge of ICT being used to access contraceptives information and services.



Findings also revealed that, majority of the respondents representing 90% stated that they have never used ICT to access contraceptive information while 10% respondents mentioned that they have ever used ICT to access contraceptive information at the time of conducting the research at the study area. Among the former, 40% respondents gave reasons as to why they have never used ICT in accessing contraceptive information including; there was no need at that time and they can find out from a friend while 50% respondents said they are always occupied with things to do on the internet than browsing for contraceptive information. The latter, however, mentioned that, ICT in accessing contraceptive information is very fast and easy. All the respondents 200 (100%) mentioned that they have never used ICT to access contraceptive services from any source. All the respondents agreed that they would use ICT to access contraceptive information.

Table 4.4: Reasons for the use of ICT in accessing contraceptives information

Variable	Frequency	Percent
Confidential	50	25
Safe	50	25
Reliable	35	17.5
Fast	40	20
Can refer	25	12.5
Total	200	100

Source: Field data, 2015

Teenage pregnancy is an important public health issue because they are associated with maternal, foetal and neonatal adverse outcomes. Table 4.4 indicates that 50 (25%) respondents each mentioned that using ICT to access contraceptive information is very confidential because it gives the opportunity for the reader to read the material on his or her own. Again, it is very safe



because no information would be on the internet which is calculated to misinform the public. Other respondents identified importance of using ICT to access contraceptive information to include; 25 (12.5%) mentioned that you can refer later if you saved the website, (40) 20% stated that, it is fast and 35 (17.5%) said it is reliable.

Majority (80%) of the respondents perceived the use of ICT in accessing contraceptives as good while 20% respondents perceived the use of ICT in accessing contraceptives as bad. Among the 80% respondents who thought using ICT to access contraceptives is good, indicated that accessing contraceptives information voluntarily, would improve user's knowledge and lead to behaviour change towards contraceptives use. The rest (20%) however, they identified reasons as teenagers would be exposed to all manner of information including those that would influence them to make bad choices, some may use the internet to be downloading pornographic videos to be watching.

Table 4.5: Components of ICT used in accessing contraceptive information

Variable	Frequency	Percent
Mobile phone	131	65.5
Computer	40	20
Ipads	19	9.5
Tv/Radio	10	5
Total	200	100

Source: Field data, 2015

Respondents were asked to mention ICT equipment used in accessing contraceptives information and services. It was revealed as indicated in Table 4.5 that the majority of the teenagers representing 65.5% identified the mobile phone, 20% respondents mentioned computer and 9.5%



respondents identified ipads while 5% respondents mentioned television or radio. Sexually active teenagers need access to contraceptives information and services to prevent unintended pregnancies. Through the use of ICT, most teenagers now share vital information to themselves and among themselves. From the data gathered majority (140) of the respondents representing 70% stated that their preferred component of ICT in accessing contraceptive information from the internet is the mobile phone. This huge number of respondents identifying this gadget is not new as teenagers these days even carry more than one mobile phone at a time, 50 (25%) respondents mentioned that they would prefer ipads while 10 (5%) respondents stated personal computers with all stating preferably the laptop.

To ascertain the attitude of respondents and perception of respondents with practical knowledge, respondents were asked if they have sexual partners. Majority of the teenagers representing 75% said they have sexual partners while a relatively smaller number however, stated that they do not have sexual partners at the time of conducting the research.

Number of sexual partners

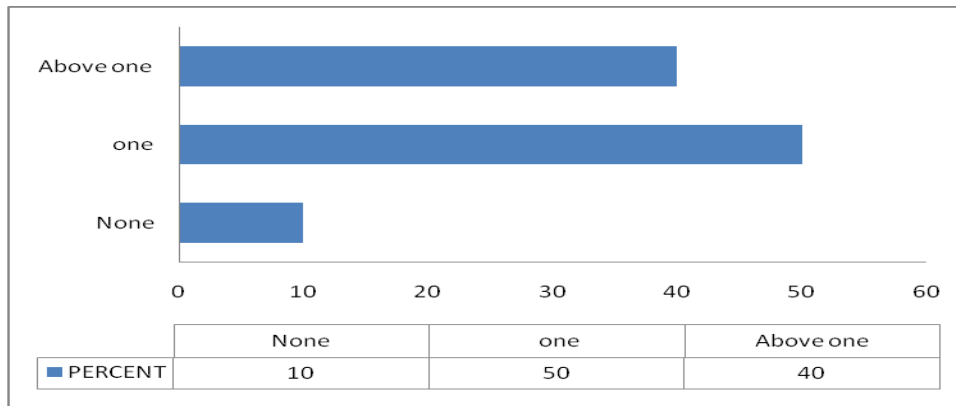


Figure 4.2

Source: Field data, 2015

Figure 4.2 shows that, 40% respondents stated that they had more than one sexual partner, 50% respondents mentioned they had only one sexual partner while 10% respondents however, claimed that they do not have any sexual partner. It has been observed that teenagers displayed negative attitudes towards contraceptives use during sexual intercourse as they could not engage in a discussion with their boyfriends and parents and cited reasons for this as immorality and immaturity, fear of parental authority and peer recognition, some also indicated that they were using cultural methods. Few teenagers also concur with the fact that teenagers across ethnic groups have a myriad of concerns related to religion and morality, as Christian participants viewed contraceptive use as morally wrong and promoting premarital sex, some teenagers indicated that it was demeaning and embarrassing to ask for contraceptive commodities.

Types of contraceptives

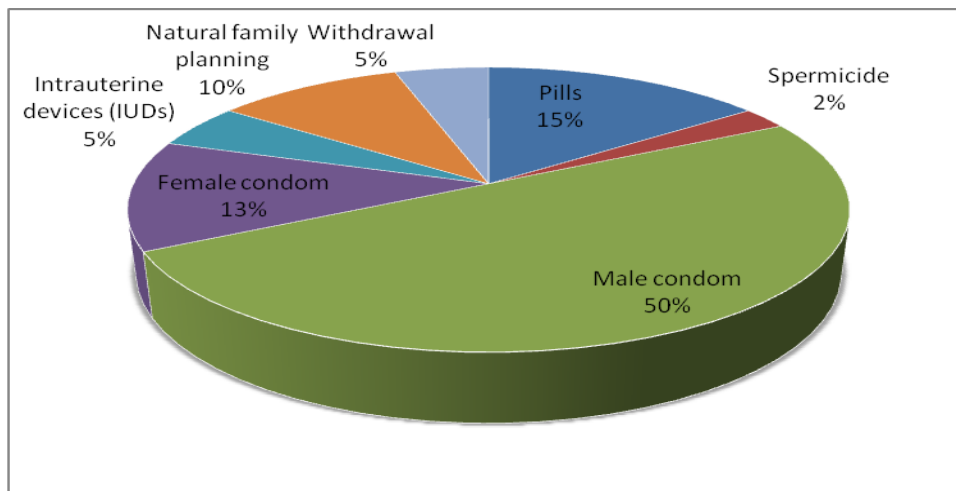


Figure 4.3

Source: Field data, 2015

There is widespread acknowledgement that there are many types of contraceptives available for people to make choices. The study tried to seek the views of respondents on the various types of



contraception methods they were familiar with. From Figure 4.3 shown above, half of the respondents (50%) identified the male condom, 15% respondents mentioned emergency contraceptive pills, 5% respondents mentioned withdrawal method, 10% respondents identified natural family planning method, 13% respondents identified the female condom and 5% respondents mentioned spermicides while 5% respondents mentioned intrauterine devices (IUDS). The high number of respondents identifying the male condom is not surprising as the male condom is commonly seen most especially in chemical stores or pharmacies. The study also tried to find out the type of contraceptive methods respondents ever tried using or used before. The results revealed that sixty per cent (60%) of teenagers stated they were not using contraceptives with some citing the explanation of 'feeling shy to buy it', dislikes and unavailability of contraceptives.

While forty percent (40%) respondents stated they have tried using contraceptives before, 10% of these respondents claimed they have ever used condoms, 9% respondents claimed they have ever used injections and 21% respondents mentioned that they have ever used emergency contraceptive pills. It was also stated that teenagers have easy access to condoms as they are usually distributed in public places, but still are not using them consistently or frequently, which results in unintended pregnancies and STIs.



Preferred contraceptive methods

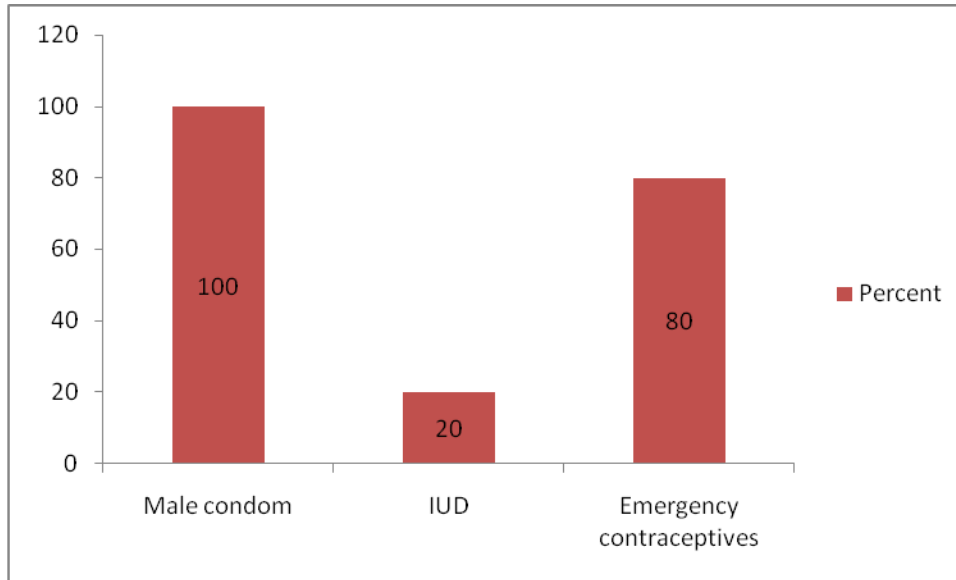


Figure 4.4

Source: Field data, 2015

It has been revealed that sexual active teenagers prefer condoms as a contraceptive method over the pill or injection. This was supported in the findings of the research work carried out. As shown in Figure 4.4 above, half of the respondents (50%=100) mentioned that they preferred the condom to other contraceptive methods. Forty percent (40%=80) respondents mentioned that they preferred the emergency pills while 10% respondents stated the intrauterine devices (IUDs). When probed to know whether preferences of particular methods of contraception influence ones use of it during sexual intercourse, the findings were not correlated. All the sexually active teenagers stated that they do not always use their preferred contraceptive during sexual intercourse, which supports the fact that preference does not relate to actual use of a contraceptive method. When probed to know why most of them listed unavailability of the commodity at the time of the intention to indulge in sexual intercourse, partner dislikes of the



contraceptives and fear of side effects of the contraceptives were mentioned as reasons, hence their inability to store contraceptives.

Contraceptive methods frequently used by respondents

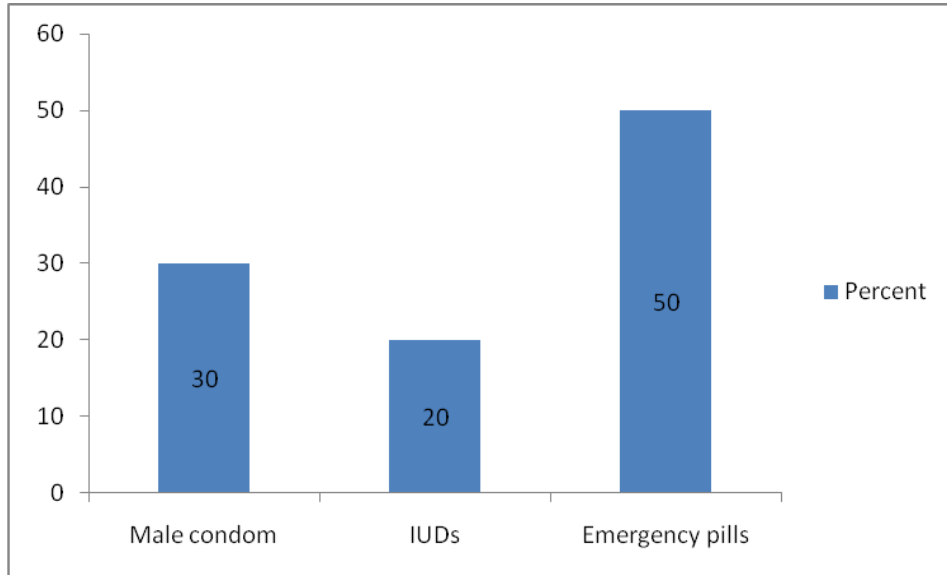


Figure 4.5

Source: Field data, 2015

Figure 4.5 shows that, half (50%) of the respondents stated that they have been using emergency pills, 30% respondents mentioned that they have been using the male condom and 20% respondents mentioned that they are using IUDs. From the results also, 54% respondents revealed that sometimes they used one form of contraceptive or the other during sexual intercourse including their preferred choice, 18% respondents mentioned that they are always using contraceptives while 28% respondents stated that they rarely use contraceptives during sexual intercourse.



Table 4.6: Reasons for not using contraceptives

Variable	Frequency	Percent
Interference in sexual pleasure	52	42.5
Causes birth complications	37	30.0
Religious reasons	19	15.0
Others	15	12.5
Total	123	100.0

Source: Field data, 2015

Contraception can be a threat to cultural values and norms. In African cultures there is a notion that a man will not marry a woman until she has demonstrated her fertility and women are considered inferior partners that cannot communicate about contraception with their partners. It was revealed that certain reasons prevented respondents from effectively using contraceptives during sexual intercourse. Results of the study as indicated on Table 4.6 shows the reasons for which some respondents (82% of the 150 respondents with sexual partners) do not use contraceptives often. 42.5% out of the 164 respondents who do not use contraceptives often, stated that the reason why they were not using contraceptives regularly was because it interference with sexual pleasures during sexual intercourse, 30% respondents said contraceptives cause birth complications during child birth mostly in later life, 15% respondents mentioned that they were not using contraceptives because of religious reasons and (12.5% out of 82% of the total respondents with sexual partners) some respondents stated that their partners do not like, feel shy to go and buy and the commodity may not be readily available at the time of the act. Respondents opined that family planning services can use ICT to enhance teenagers' knowledge and attitude towards contraceptives.





This they mentioned could help them to update their knowledge and also maximize their direct interaction with the service providers which most cases they feel shy to do. Over the years the idea of contraceptives as means of birth control in Ghana has changed, with some totally opposed and others accepting it. Traditionally it was not acceptable for a girl to get pregnant before marriage, but cultural norms these days have changed significantly and having a teenage pregnant is no longer seen as immoral. Poverty is also manifested in different forms of financial barriers for individuals in accessing health care in resource limited settings, including the cost of transportation, cost of or difficulty in obtaining child care, cost of services and opportunity costs from time lost at work. Therefore, provision of contraceptives information and services via ICT could assist teenagers to access contraceptives with ease.

Teenage girls who get pregnant are likely to drop out from school and teenage parents are unlikely to have the social and economic means to raise children. Further, unintended pregnancy poses a major challenge to the reproductive health of young adults in many communities in Ghana including instances in rare cases where the young girl is forced to live with the young boy at that tender age. These unnecessary problems created by the decision not to use contraceptives by teenagers which puts them in the poverty cycle could be broken by the decision to just use one method of contraception.

4.4 Effects of ICT on Sexual Behaviours of Teenagers

Knowledge and perceptions about contraceptives is critical in the Ghanaian context considering the increase in population and the fertility preference among young people these days. Considering the vital role ICT is playing in enhancing the knowledge of people in many areas of life, it is good to assess the effects of ICT used by teenagers and its influence on their sexual behaviours in this time and age of emerging technology. Information on how teenagers use the

ICT in accessing contraceptive information in relation to their sexual behaviour is in fact merely assessed. Very important variables could not be measured by the researcher concerning information about the content and extent of the conversations teenagers have about contraception or sexual related issues and the use of ICT due largely to the fact that most of them were not feeling comfortable in answering detailed questions and could not be forced based on ethical grounds.

The researcher therefore, could not distinguish between conversations that involve simply asking a partner if he or she has a condom and more in-depth conversations with condom use during sexual intercourse. This is important because the effectiveness of sexual communication with partners is a strong predictor of contraceptive use than the amount of conversation merely with a friend. Coupled with the above, the researcher has no measure of teenagers' actual ICT-use, which was asked only as part of administering the research tool at the study area and for that matter could not measure exactly how much ICT knowledge respondents had to access contraceptives information by the aid of ICT.

It was revealed that, 131 (65.5%) respondents agreed that ICT has an effect on the sexual behaviour of teenagers while 69 (34.5%) respondents mentioned that ICT use among teenagers has no effect on the sexual behaviour of teenagers. Respondents mentioned that an SMS based mobile telephone network could be used to send vital information on contraceptives by service providers to teenagers between cell phones and other devices. Through the mobile network SMS texting, the message would alerts teenagers to new information on contraceptives. This, respondents stated would improve their knowledge and attitude towards contraceptives use. Few respondents also stated that it would reduce long distance to service providers' places to seek for counselling on sexual related problems.



Reasons for choice of answers

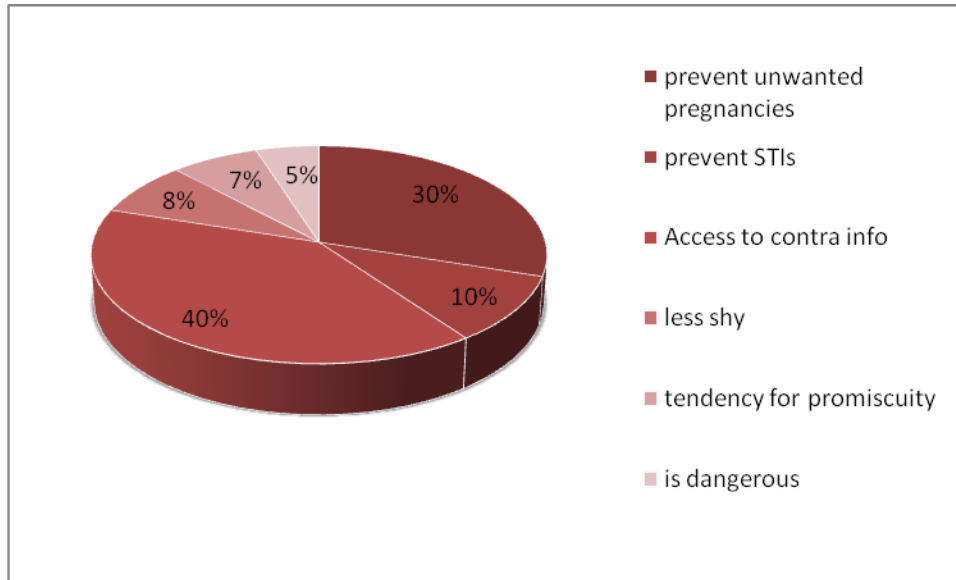


Figure 4.6

Source: Field data, 2015

Respondents were asked to support their reason for choice of answers revealed earlier in Figure 4.6 above. From the responses shown in Figure 4.6 above, 30% respondents said the use of ICT in accessing contraceptive information prevents unwanted pregnancies as many young females will be better informed to know when they are safe, 40% respondents stated that it prevents sexually transmitted diseases (STDs), 10% respondents mentioned that it enhances knowledge of contraceptives while 8% respondents said teenagers will be less shy in accessing contraceptive services as service providers may not be seeing them physically. However, some respondents expressed few reservations about the sexual behaviour of teens in relation to ICT use with 5% respondents citing the fact that it is dangerous and 7% stating that it has the tendency to promote sexual promiscuity among teenagers.



Negatives effects of ICT and sexual behaviour of teenagers

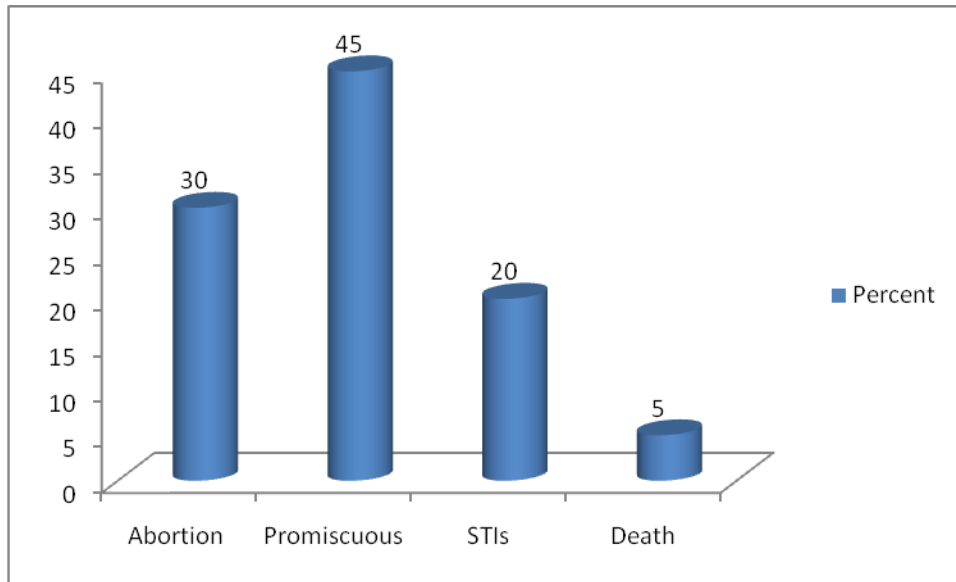


Figure 4.7

Source: Field data, 2015

From Figure 4.7 shown above, 30% respondents mentioned that the use of ICT has affected teenagers negatively as many of them now know what ways to do to terminate pregnancy, 45% teenagers stated that the use of ICT by teenagers has never been helpful as many of them view pornographic films in them instead of accessing contraceptives information which can lead to increased promiscuous life among teenagers, 20% respondents mentioned that the use of ICT has resulted in an increased in STIs among teenagers as many of them indulge in sex without any form of protection and 5% respondents mentioned that the use of ICT could lead to death as many teenagers may misapply certain information provided online.

4.5 ICT Usage by Teenagers in Accessing Contraceptives Information

Inattention to context is evident in many reproductive health interventions and policies. For example, the reproductive rights discourse focuses on the rights of the individual, often to the



exclusion of the wider social and economic conditions within which rights are defined and realized. Such a perspective underplays the extent to which the poor and vulnerable are unable to realize their rights to the economic and social resources vital for the protection of their health and well-being. According to the diffusions' perspective, traditional culture is a barrier to behaviour change, with a great deal of research effort directed at identifying cultural barriers to contraceptive use. Lack of education and the perpetuation of 'false beliefs' reinforced by traditional birth attendants are cited as major obstacles to improved maternal health, use of contraceptives information and services especially among misinformed teenagers.

Empirical and descriptive accounts of culture such as norms tell us little about how, when and why people choose to use them to legitimize behaviour or when and why they adopt strategies which challenge taboos and contradict social norms. Most analyses of teenagers' abstinence from contraceptives use focus on taboos and social norms governing reproductive behaviour. Several issues concerning contraceptives analysis indicate that reproductive behaviour is negotiated within competing norms and taboos, such as between gender norms of sexuality, which pressure women to resume early sexual contact following childbirth and taboos on sex during lactation.

There is now a substantial body of literature which refutes the structural-functionalist view that behaviour is governed by social and cultural norms. Culture is instead seen as a dynamic response to specific local circumstances: continuously created and recreated in the course of social interaction. This conceptualization of culture provides a lens through which to understand reproductive health decision-making.

For example, it has been shown how decisions to use family planning were not one-off events, but represented a continual process of negotiation and strategizing within social networks especially among teenagers. "Decisions appear to be preceded by a period during which



teenagers overhear or participate in conversations with others, and then by more strategic conversations when teenagers seek out those whom they believe are using contraceptives. Once a teenager begins to practice contraception, she continues with these conversations and she monitors her body's reaction, ready to discontinue use should she learn something disturbing about the experience of others or if the method does not 'rhyme' with her body. It has been highlighted that postpartum abstinence in West Africa, which showed clearly that there is no hegemonic postpartum norm, men and women of different statuses and ages draw on a variety of normative statements to evade, promote, or undermine abstinence.

The results also revealed that, 114 respondents, representing 57% mentioned that it was easy for teenagers to access contraceptive information by the use of ICT while 56 (28%) respondents said it was not easy for teenagers to access contraceptive information by using ICT and 30 (15%) respondents could not tell whether it was difficult to access contraceptives information or not at the time of conducting the research. Access to contraceptives information by teenagers through ICT could be judged based on ones knowledge of ICT and how, where and possibly when to access contraceptives information. It is also important to state that access to contraceptives information through ICT depends largely on the availability and functioning of ICT equipment under the control of the teenager.



Table 4.7: Frequency of access to contraceptive information through ICT

Variable	Frequency	Percent
Once a week	34	17
Once every two weeks	20	10
Once Every Three Weeks	50	25
Anytime I want	96	48
Total	200	100

Source: Field data, 2015

From the Table 4.7, it is depicted that 34 (17%) respondents stated that they can access contraceptives information through ICT once a week, 20 (10%) respondents said they can access contraceptive information using ICT once every two weeks, 50 (25%) respondents mentioned the fact that they can access contraceptive information using ICT once every three weeks and 96 (48%) respondents stated that they can access contraceptives information by the use of ICT any time they wanted. The main use of ICT by respondents was assessed to examine what they have been using the internet for. From the responses gathered. Majority of the respondents representing 85% said they use the internet with their mobile phones to communicate on 'WhatsApp' while 15% respondents said they use the internet mainly to browse 'Facebook'. These responses from are not new as many of them these days do a lot of chatting with friends and close relatives via the internet.



Table 4.8: Ways ICT can be used to spread contraceptives

Variable	Frequency	Percent
Loading it on Facebook	200	100
Loading on WhatsApp	200	100

Source: Field data, 2015

Respondents mentioned that information on contraceptives could be made accessible and readily available to teenagers to read any time any where if it is put in the right place where teenagers communicate most. From the responses gathered and shown on Table 4.8, it is clear that all the respondents established the fact that putting contraceptives information on ‘WhatsApp’ or ‘Facebook’ which are basically social media, would be a very vital way of accessing contraceptives and encouraging teenagers to share the information. All the 200 respondents (100%) were asked to state whether they have ever accessed contraceptives services through the use of ICT at their own comfortable time and place. From the results gathered, it was revealed that, all the respondents have never been privileged to get such a service via ICT.

From the results, 70 (35%) respondents mentioned that it was possible to obtain contraceptives via ICT while an over whelming majority (65%) respondents said contrary. This huge number of respondents (65%) stating that contraceptives services could not be accessed via ICT is not surprising considering the results above where all the respondents them had not been privileged to access contraceptives through ICT before at the time of the research.

4.6 How ICT Influence the Attitude and Perception of Teenagers towards Contraceptives Use

Given the mounting evidence of the strong influence ICT has on contraceptives use, teenagers’ attitude towards contraceptive may have a similar effect on contraceptive use. Despite the desire



to prolong the timing of their next pregnancy, teenagers are reluctant to use contraceptives during sexual intercourse without first information via ICT because they feared the effect of contraceptives on their health, which they felt they already are vulnerable having just engaged in sexual intercourse. The teenagers are aware of the decreased need for contraceptives during what they call 'free period' interval, which is the period between after ovulation and the return of menstruation which offers natural protection from pregnancy. In addition, inadequate sexual health care contributes to the spread of sexually transmitted infections (STIs) and may lead to damaging effects on a teenager's lifelong health and fertility. From the results obtained, majority of the respondents (72.5%) perceived the use of ICT to have the ability to change the perception of teenagers on contraceptives and stated that it was important to use ICT while 27.5% respondents mentioned that the use of ICT have not got any positive influence on the perception of teenagers in contraceptive use. Analyses also reveals that 153 (76.5%), respondents mentioned that the use of ICT among teenagers has changed their attitude towards contraceptive use because they can now find almost all information or purchase whenever they want. However, 47 (23.5%) respondents stated that the use of ICT among teenagers has not changed their attitude towards contraceptives use.



Merits of ICT and contraceptive

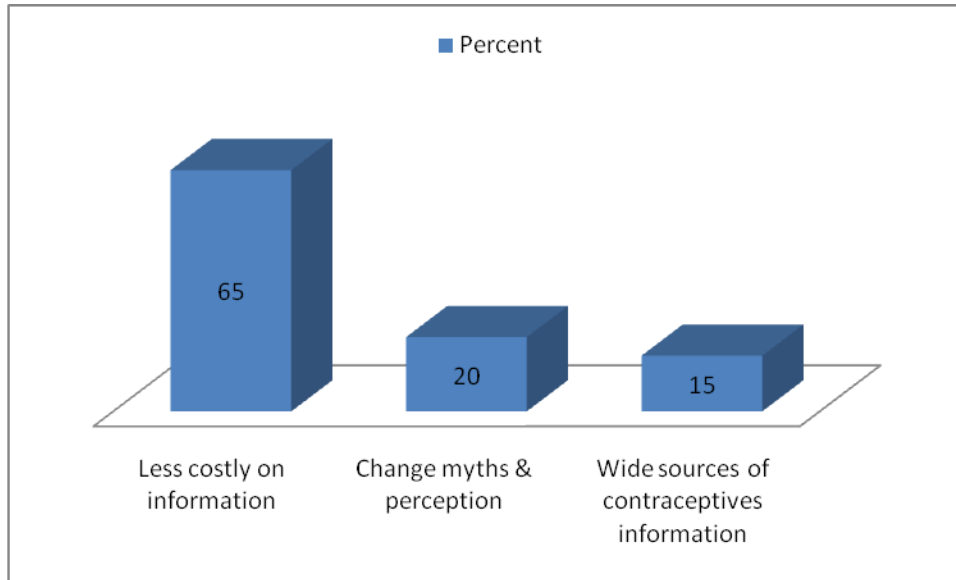


Figure 4.8

Source: Field data, 2015

From Figure 4.8 shown above, majority (65%) of the respondents stated that, the advantage of using ICT in accessing contraceptives information is that it is less costly, 20% respondents mentioned that it helps them to change myths and perceptions about contraceptives and 15% respondents said it provides a wide range of contraceptives information when accessed. It was further revealed that radio talks, SMS, free online information on contraceptives would change attitudes and perceptions of teenagers towards contraceptives.

4.7 Barriers of Contraceptive Usage through the Application of ICT

Teenagers' perceptions of contraceptive use are greatly influenced by antecedent of socio-cultural heritage and accompanying socialization processes which always interplay before a decision is reached. Several barriers to contraceptives use have been well illustrated including culture and religion and the desire for more children. There is also the school of thought that,



many indigenous Black Africans’ do not disregard their cultures to engage their children with contraceptives information, teachers and church leaders might be failing to communicate information about sexuality freely with their children as they feel embarrassed and awkward and think it is immoral. Analyses revealed clearly that, 185 (92.5%) respondents mentioned that there are obstacles to contraceptives use while 15 (7.5%) respondents said otherwise. These barriers respondents stated have the tendency of preventing teenagers from accessing contraceptives information and services freely.

Table 4.9: Examples of barriers to contraceptives

Variable	Frequency	Percent
Religion	80	40
Educational level	90	45
Distance to health facility	100	50
Lack of confidence in service providers	170	85
Attitude of service Providers	110	55
Myths	20	10
Absence of commodity	130	65

Source: Field data, 2015

From Table 4.9 shown above, all the respondents identified at least one barrier to contraceptives use among teenagers in the study area. The barriers as mentioned by respondents are illustrated above in Table 4.9 including perceived cause of infertility (myths) and absence of contraceptive commodity at the service points of service. The rest are clearly illustrated in the Table. In addition to the barriers described above, many also mentioned “real” side effects as a barrier to contraceptive use. The most common side effects expressed by the respondents were weight



changes, bleeding and lack of sexual desire. Headaches and blood pressure issues were also cited by a few.

All of the methods said were associated with potential changes in weight, with some methods associated with weight gain (notably the injectable) and others with weight loss. There were notions that the use of modern contraceptive methods encouraged young teenagers to become sexually promiscuous. Both users and non-users expressed the belief that their partners and that of other young teenagers who use contraceptives felt that they encouraged the teenagers to be unfaithful.

Table 4.10: Impact of ICT in changing those barriers

Variable	Frequency	Percent
Change perception	120	60
More available information for cross checks	20	10
Wider knowledge of contraceptive	60	30
Total	200	100

Source: Field data, 2015

From Table 4.10 shown above, a good number of reasons were mentioned as the impact of ICT on contraceptives usage among teenagers. The results as obtained from respondents are illustrated in Table 4.10 above including; changes teenagers' perception about contraceptives use. A few respondents who use contraceptives especially condoms however stated that they have not experienced any serious negative effects since they started using, hence the practice till now. The opinions of health workers (2) and adult males (10) selected within the study area were also gathered about contraceptives usage among teenagers. Majority of the adult males (9) interviewed within the municipality thought that, contraceptive usage among the youth was low.



This they attributed to the perceived belief that people with contraceptives especially the condoms and emergency contraceptive pills were usually perceived as being sexually promiscuous, the youth sometimes do not see it as a need and above all, they perceive that contraceptives cause infertility in women. Six of the adult males however objected to the introduction of contraception to teenagers. The other four consented to the idea but indicated that teenagers should be monitored when using contraceptives to avoid abuse. The two health workers at the RCH unit also identified lack of contraceptives education in schools, religious beliefs, preferences of methods, cost of commodities, influence of partners and unavailability at the point of sexual intercourse as key barriers to effective contraceptive usage among teenagers.



CHAPTER FIVE

Discussion of Findings

5.1 Introduction

In this chapter, the results of this study have been discussed by relating the major findings to available literature presented in chapter two of this research work. The discussion has been clearly put in line with the research objectives stipulated in chapter one of the thesis. Key among the discussion is the extent to which results from the research agree with available reviewed literature in this work or at variance with the literature. The discussions are done based on the specific objectives of this study that were formulated.

5.2 Socio-demographics Background of Respondents

From the results, more than half of the respondents 120 (60%) were between the ages of 11-15 years whilst 80 (40%) respondents were between the ages of 16-19 years. Another issue worth mentioning is the fact that 9% out of the 110 females were married. Out of the 10(9% females) females, two were 14 years each and in JHS while eight were within the age range of 15-19 years and in SHS. Majority (7 females) of the married female teenagers were Muslims which was not surprising because their religion does not really frown on it. However, the rest 3 married females belong to the Christian religion. This result above is very worrying since almost 10% of the female teenage respondents were married; a generalised view becomes very alarming in the municipality. Most of the respondents (83%) were Christians whilst 13% and 4% respondents were Muslims and other religions unspecified respectively.



5.3 Knowledge, Attitude and Perception of Teenagers towards the Use of ICT in Accessing Information about Contraceptives

Throughout history, mankind has tried to avoid large family size even in ancient times. Until the last century, this was largely achieved by behavioural modifications, including abstinence during certain period of a woman's life time, infrequent coitus, the avoidance of intercourse during the fertile period of the cycle and coitus interruptus (the withdrawal method) (Abiodun and Balogun, 2009). In population terms, breast-feeding, which inhibits normal ovarian activity, has been one of the most important means of limiting fertility, whereas for individual couples, coitus interruptus first mentioned in the book of Genesis has had a major role to play as far as pregnancy is concerned. One artificial method of contraception, the condom, has a surprisingly long history. Penile sheaths were described in Egypt in 1350 BC. Originally made from animal intestines and later from linen or silk, they were used mainly for protection from venereal disease. Not surprisingly, given the place of women in society, female barrier methods arrived much later on the contraceptive scene. The first 'womb veil' is attributed to an American working in the early 1800s and the first cervical cap was produced in Germany around 1830 (Addai, 1999). It took more than 150 years before the female condom came on to the market in 1993 (Addai, 1999).

The idea of contraceptive as it is been used today perhaps is known by most people to only be family planning. This is not surprising as many people in this research work also associated themselves with this explanation of contraceptive. Knowledge of contraceptive must cover family planning, counselling, pregnancies, human immune virus, sexually transmitted infections, information and services among others. It has been widely advocated that increasing the knowledge of teenagers would improve their attitude and perception towards contraceptive use.





In most cases in the world particularly in Africa where people are still deep rooted in certain cultural practices and beliefs about fertility, the issue of advocating contraceptives use among teenagers has not always been successful. Results from the research revealed that an overwhelming majority of respondents (97%) stated they have ever heard of contraceptives. These huge numbers of respondents stating they are aware of what contraceptives are was not surprising as many of them have even involved themselves in their first sexual debut. This high knowledge of respondents from the study supports the findings made by Bracken and Farak (2009), where the findings revealed that teenagers aged 11-19 years in Jamaica knew what contraceptives encompassed and the findings from the Ghana Demographic and Health Survey (2003), where knowledge of contraceptive was known by 98 percent of women and 99 percent of men.

However, this findings explained above seems to be at variance with findings made by Bertrand, et al., (2005) where knowledge of teenagers who were sampled and interviewed on contraceptives use in Uganda was found to be very low as well as the findings made by Chetley, and Andrew, (2007). It is also necessary to reveal that apart from the fact that most respondents acknowledged they were involved in sexual acts most of them do so without regards to any form of contraceptive methods. The study revealed that 123 respondents representing 82% of the total respondents who have sexual partners (75% of total respondents) do not often use contraceptives during or after sexual intercourse.

These findings resonate with those of Omondi-Odhiambo (1999), who reported that 44.6% of adolescents were not using contraceptives consistently, implying that they were at risk of unwanted pregnancy and sexually transmitted infections. Consistent and correct use of contraceptives is important to prevent unwanted pregnancies. The condom was cited by the

majority as their preferred contraceptive method, whereas the hormonal contraceptives (the injection and the pill) were also preferred. However, practice with the condom during sexual intercourse was discovered by the study among respondents to be very low. It is important to mention that, the low condom use is a disturbing factor, since most were not actually using them even though condoms are widely distributed and easily available if not even at reproductive and health facilities but at chemical stores and pharmacies found in the study area. Other contraceptive methods like emergency contraceptives, IUDs and female condom were generally known, due to the fact that most teenagers possibly at the study area do not research or patronize those methods of contraceptives. The findings from the research advocate for serious health education in the first and second cycle institutions as well as public places for more teenagers to get themselves involved in using contraceptive methods to avoid unplanned pregnancies and infections.

Information given should consist of information on anatomy, physiology, sexual behaviour, STIs, sexual development, conception and contraception tailored to the needs of teenagers. If this is done properly more possible with the incorporation of ICT, more teenagers may be involved in using one form or the other of contraceptives. The study further indicated that respondents had some knowledge of methods of contraceptives available in the study area. These findings are supported by other studies like that by Omondi-Odhiambo (1999), which also reported that 64% of mothers could mention pills and injections – but these were adolescent mothers, who in spite of knowing about contraceptive methods ended up becoming pregnant.

The study also assessed the perception of respondents towards contraceptives use. Results from the research revealed that 35% respondents perceived contraceptives to be good while 25% respondents perceived contraceptives to be bad. Respondents perceived contraceptive usage to





have side effects including causing difficulty in child birth. This mixed response from respondents was not surprising as many of them were from different background with different set of beliefs and norms and possible different likes and dislikes of contraceptives. This finding from the study concur with the results that were obtained from Foreman and Mia (2011), where married women who did not intend to use contraception in the future most commonly cited fear of side effects and health concerns as bad aspects of contraceptives. Although the response was not surprising, it gives a clear picture of the understanding of contraceptives among students of first and second cycle schools in the municipality, which should be of great concern. However, the remaining 40% of the respondents who did not know whether contraceptives are good or bad signifies a major gap between contraceptives availability and awareness creation. This situation may be as a result of poor contraceptive education through ICT of within the schools.

The study also revealed that the most common contraceptive among respondents was the male condom. The male condom as respondents identified was commonly seen and even females are not shy to carry it around as compared to other methods of contraceptives. This finding from the study supports the findings made by Kayembe *et al* (2003) where condom was the most widely known modern contraceptive method since it was cited by 43% of women and the Pill by only 28%. This high knowledge of respondents did not reflect into practice as majority of them stated that they rarely used condom in sexual intercourse because of its interference with sexual pleasure.

It was revealed by the study that most (67%) female teenagers prefer to use emergency contraceptive before or after sexual intercourse because their partner in one way or the other failed to use a known and effective contraceptive. It was revealed that 80% respondents preferred to use emergency contraceptives. The results further indicated that respondents cited reasons for

not using contraceptives regular to include; religious reasons, because it causes birth complications and interference in sexual pleasure. This result mentioned above supports the work that was done by (Mwaila, 2011; Foreman and Mia, 2002) and (Andersen, 2009; Ismet, 2000) where teenagers expressed negative attitudes towards condoms and other methods of contraceptives use during sexual intercourse. When sexual activity is frequent or the likelihood of an individual having multiple partners, condoms may be a priority option. Emergency contraceptive pills are an option in the event of condom breakage, slippage or other causes of unprotected intercourse. A teenager who engages in frequent intercourse may opt for methods that are not equally related to protect against pregnancy, but will still require routine condom use for STI/HIV prevention. These generalizations, while derived from population-based evidence of teenagers' sexual behaviours, do not preclude client and provider dialogue that specifically seeks to explore the teenager's personal circumstances, and their desires regarding pregnancy prevention, future fertility plans and protection of personal health.

It is very unfortunate to mention that, from the results obtained, majority of the respondents at the time of conducting the research work mentioned that they were having one or multiple sexual partners. About 40% respondents stated that they had more than one sexual partner while 27% stated STIs such as Candida and gonorrhoea as those they have acquired before. Based on this revelation, one would have thought that as a matter of fact and objectivity, even if such teenagers are not scared of the deadly HIV/AIDs pandemic, sexually transmitted diseases would have scared these respondents and a possibility of high contraceptive usage. However, despite this worrying trend, contraceptive use appeared to have been very low among respondents.

Additionally, respondents were also assessed on their opinion concerning how ICT could enhance their knowledge of contraceptive use. It was revealed that 80% respondents perceived



the use of ICT on accessing contraceptives as a good idea. This response was expected as many or almost all respondents were found with mobile phones at the time of conducting the research and this could possibly be a tool to effective dissemination of contraceptive information among teenagers. Respondents were however, very quick to state their preferred way by which they could assess contraceptive information via ICT. Seventy percent (70%) respondents opted for mobile phones while 25% respondents opted for iPods for accessing contraceptives information via ICT. This implies that, teenagers are more comfortable with the use of mobile phones in accessing contraceptives, hence the need for health planners to acknowledge.

Furthermore, some adolescents may think that talking about contraception may ruin the romantic moment or make sexual activity less fun. Health-care providers should encourage discussion of all these issues. Nonetheless, the most basic needs of teenagers, regardless of culture, age and marital status, are for accurate and complete information about their body functions, sex, safer sex, reproduction and sexual negotiation and refusal skills. Without information, teenagers are forced to make ill-informed decisions that will potentially have profound negative effects on their lives. Since teenagers do not usually have disposable income, affordable health services are crucial for them to access needed services, including access to pregnancy-related services.

Societal perceptions of contraception methods have a great influence on teenagers' knowledge and attitude towards contraceptive use. For example, the perception of some people that contraceptives should only be used by married couples who want to space out pregnancies has long been held by societies. Others erroneously believe that exposure to contraceptive information encourages women to be promiscuous. Again, social attitudes may condemn teenagers for seeking such information before marriage. In many settings where adolescents and their unique health needs are not seen as different from children, significant attitudinal





exposures, policy and environmental barriers exist affecting contraceptive use. Yet teenagers are greatly concerned about privacy and confidentiality related to sexual matters. It is therefore; not surprising that majority of respondents mentioned that the use of ICT in accessing contraceptive information would be good for them because it is very safe and confidential. Unmarried teenagers are at particular risk of experiencing negative attitudes from parents, teachers and health-care providers especially when trying to access certain contraceptives information or services from places where most people know to be for contraceptives services. Sometimes even married women face unsupportive attitudes from health-care providers when they seek information regarding contraceptives before beginning childbearing at reproductive health care centres and other health facilities. These attitudinal barriers create a major disincentive to teenagers interested in receiving sexual and reproductive health information and services from service providers. In settings where adolescent health needs are not addressed, there can be serious health problems. However, research in Uganda and elsewhere has demonstrated low use of contraceptives among populations with high knowledge, indicating that knowledge alone does not necessarily translate to use. It is therefore, very important that vital information concerning contraceptives be made available to teenagers via ICT to enhance good attitude towards contraceptives use.

Teenagers may also experience difficulties in communicating with their parents on sexuality-related issues. This may be due to the adolescent having a different set of values in such issues, as well as the perceived notion that parents do not want (or find it inappropriate) to discuss such issues with them at home for fear of revealing certain information to them. Similarly, teenagers may not visit a health service centre if there is a perceived fear of rejection or if it will create difficulties with their partner but could do so easily with the mobile phone at home, at school or

any convenient time. It has also further been stated that the attitudes of healthcare providers also contribute to the non-use of contraceptives by teenagers, since they are denied access through ridicule, despite having knowledge about contraceptives they end up becoming pregnant.

5.4 Effects of ICT Usage on Sexual Behaviours of Teenagers

Many people and governments including advocates of family planning have put in place various strategies and policies to facilitate the use of family planning services as a step towards reducing the fertility rates, increasing contraceptive prevalence rate (CPR) and reducing the unmet needs of family planning. At the household level, the high fertility rate may be contributing towards depletion of productive resources in the society, rising cost of living, ill health for teenage mothers, poor nutrition and limited educational opportunities, ultimately trapping women in a poverty cycle most especially in developing countries. Many of the teenagers in the study were sexually active, with average age of commencing intercourse in the mid-teens. More to this, 62% of the sexually active respondents said they met their partners through the internet while almost 10% met their partners through phone calls. The respondents gave reasons for having sexual partners to include; financial support, just for the fun of it, to prove adolescence and for security. This gives an indication that, the ICT system introduces teenagers to sexuality than people perceive it to. However, most of the reasons stated by the respondents for indulging in sexual activity are looked at by the general public as the responsibility of parents/guardians. Therefore, the findings also bring to bear the irresponsibility on the part of parents and guardians of these teenagers.

Another worrying revelation from the research is the fact that only the married respondents stated that their parents were aware of their sexual partners. However, all the sexually active respondents mentioned that they would give birth/ let their partner give birth in case there is



pregnancy. These findings are surprising because respondents are all students being taken care of by parents or guardians, hence their low economic status and inability to take responsibility of pregnancy or child birth. Results from the research revealed that 131 (65.5%) respondents agreed that ICT has an effect on the sexual behaviour of teenagers while 69 (34.5%) respondents mentioned that ICT use among teenagers has no effect on the sexual behaviour of teenagers. Although 34.5% is the lower percentage, inadequate knowledge about the effects of ICT on the sexual behaviours of teenagers is very worrying as it can lead to the increase of deadly sexually transmitted infections. Respondents mentioned that an SMS based mobile telephone network could be used to send vital information on contraceptives by service providers to teenagers between cell phones and other devices. Through the mobile network SMS texting, the message would alert teenagers to new information on contraceptives. This, respondents stated would improve their knowledge and attitude towards contraceptives use. Some other explanations were that SMS texting will possibly motivate and encourage teenagers to use contraceptives anytime they want to do so without any difficulty.

This finding from the research agreed with the findings made by Oyedokun (2000) where SMS or text messaging on contraceptive information was effectively used to reach teenagers with contraceptive information in Northern Nigeria where knowledge and attitude concerning contraceptives information and services were greatly improved. According to Oyedokun (2000) most of the teenagers through SMS were able to request contraceptive method freely without feeling shy. Further interaction with respondents on how the use of ICT could affect their sexual behaviour revealed that 30% respondents think the use of ICT in accessing contraceptives prevents unwanted pregnancies as many young females will be better informed to know when they would be safe, 40% respondents stated that the use of ICT in accessing contraceptives



information prevents sexually transmitted diseases (STDs) among teenagers as they would be informed on what to do to avoid being infected with STIs, 10% of the respondents mentioned that it enhances knowledge about contraceptives while 8% respondents said they will be less shy in accessing information as service providers may not be seeing you.

This findings again supports the findings made by (Ranck, 2011; Potts, 2009) where knowledge of teenagers increased and most had access to reproductive health issues including contraceptives and were also able to make the right decision concerning their contraceptive issues after having been enrolled on the program in the two countries on ICT based contraceptives information. The study by Kahad, (2010), also revealed that appropriately applied, existing ICTs particularly mobile technologies have the capacity to improve access to family planning/reproductive health information and services for women, men and youth as well as to increase their opportunities to more effectively engage in the economy, with the ultimate potential to better both their health status and their quality of life.

Respondents mentioned negative attitude of teenagers using ICT to access contraceptive information to include; 30% respondents mentioning that the use of ICT could affect teenagers negatively as many of them would now know the ways to terminate pregnancy. Forty five percent of the (12% of the total respondents for the study who think ICT has the possibility of increasing the tendency for promiscuity and death) respondents stated that the use of ICT by teenagers cannot be helpful as many of them now view pornographic films on their mobile phones which can lead to increase in promiscuous life among teenagers, 20% respondents mentioned that the use of ICT could result in an increase in STIs among teenagers as many of them could indulge in indiscriminate sex without any form of protection and 5% respondents mentioned that the use of ICT could lead to death as many teenagers may misapply certain



information provided online. These reasons given by respondents from the study supports the findings made by Foreman and Mia, (2002) where many of the teenagers in Uganda (70%) use their mobile phones to load pornographic films to be watching, few (15%) use their lap tops to download contraceptives information to read while 15% teenagers responded that they use the internet to read many things including key information on contraceptives.

In many instances related to sexual behaviour of teenagers on contraceptive usage, in many African countries more than 20% of women aged 14–19 years have given birth to at least one child. The South African Demographic and Health Survey (Foreman, and Mia, 2002) showed that sexual behaviour started at 15 years amongst girls, and was more prevalent amongst rural and Coloured girls in South Africa. Irrespective of their sexual activity, teenagers were not taking responsibility, since they indicated that it just happened or they did it out of curiosity. This indicated that teenage girls were sexually active but ignorant, not displaying responsible behaviour like consenting to safe sex, using protection to protect themselves from STIs, or deliberating on the consequences of early initiation of sexual relationships.

Regarding the teenagers' source of information on sexuality and contraceptives, nurses and the media were cited equally, but the schools were also found to be a source of information; however, this information was not sufficient, since the teachers are from the same cultural background and feel uncomfortable discussing contraception and sexuality. In the same vein, the study also explored sources of respondents' knowledge of contraceptives which they mentioned to include. Friends, school, media and health centres. It has been found that sex education in public schools often missed the target by dwelling on abstinence and denying students the information they really needed when they became sexually active. Concerning information regarding sexuality and contraceptives, sexuality knowledge was good as the majority of



respondents could specify the natural method or relate facts about menstruation and the safe period. Contraceptive knowledge was good despite the fact that most respondents indicated they engaged in unprotected sex, and some did know how often a contraceptive pill should be taken to avoid pregnancy. Although many people may find the idea disturbing, the reality now is that many adolescents have sexual relations before they are ready for marriage and families.

Studies in the United States and other countries have found that among teenagers there is an average delay of about one year between the onset of coital activity and the use of modern contraceptives. Findings again from the study indicated that 67 (33.5%) respondents strongly disagree that the use of ICT by teenagers could influence their sexual behaviour negatively. This finding from the study seems to be in line with the findings made by Omondi-Odhiambo, (1999) that the variety, availability and the cost of ICTs directly affect usefulness and uptake of contraceptives among teenagers either positively or negatively. More to this, the fact that teenagers think contraceptive accessibility through ICT will not affect their sexual life negatively is an encouraging response which the reproductive health practitioners within the municipality and the country as a whole must take advantage.

5.5 The Level of ICT Usage by Teenagers in Accessing Contraceptives Information

The 19th century ushered in an era of accelerating social change that continued to this day. The Industrial Revolution, the rise of modern methods of communication, the expansion of Western influence throughout the world, the explosion of scientific knowledge and the success of public health, preventive and curative medicine all distinguish the 19th century from the whole of preceding history. Yet Western society found it difficult to adjust to the need to control family size. For the first time in human experience, adults were obliged to adapt to a world essentially different from the one they had known as children, yet, it is in childhood that many patterns of



sexual behaviour are formed. As the pace of change accelerated, so the earthy pragmatism of the 18th century turned into 19th century prudishness. But the good intentions of a worthy minority often did little more than build a framework to house the dual standards of the majority.

Historically, in the years immediately before Cairo, five schools of thought had arisen in population and development. The Vatican held only so-called “natural” family planning and maintained an implacable opposition to abortion. Despite all these, mankind has tried to explore other alternative ways of promoting contraceptives use. Results from the research revealed that 114 (57%) respondents know that it is easy for teenagers to access contraceptive information by the use of ICT. This might be as a result of the fact that majority of teenagers these days have their own mobile phones and laptops they use in browsing the internet and brings to bare their readiness to access contraceptives through ICT. However, this finding from the research seems to be at variance with the findings made by Foreman and Mia, (2002) where teenagers in Zimbabwe used their personal mobile phones and personal laptops to load pornographic films to be watching with only few using their lap tops to download contraceptives information to read.

The findings rather, appeared to have some relation with the findings made by Addai, (1999) where it was widely advocated that the emergence of the ICT sector is the ideal vehicle for the dissemination of contraceptive information content among teenagers as majority of these category have reliable equipment of modern ICT components. But again, the findings from the study seems to be at variance with the findings made by Ismet (2000) where teenagers in Turkey reported that they used the internet to download films to watch, watch movies on-line, watch celebrity worldwide and watch football matches. Although respondents were very quick to list the importance of using ICT to access contraceptive information on-line, very little is done with regards to contraceptives information.





Results from the survey further revealed that majority of the teenagers 96 (48%) respondents stated they can access contraceptives information by the use of ICT any time they wanted. This huge number of respondents as against the smaller relative number who claimed to be able to access contraceptive information as well as 34 (17%) respondents who claimed they can access contraceptives information using ICT once a week, is a cause for concern because, even if the information is provided on-line the tendency for teenagers to ignore it and pursue their own agenda is high. In late adolescence, sexuality focuses on serious relationships, clear sexual identity and capacities for tender and sensual love. Although the possibility of abusive and exploitative behaviours remains, relationships at this point tend to be characterized by concern for the feelings and well-being of the partner. Teenagers tend to ask more questions and find avenues for answers. It is important to remember that it is during adolescence that sexual identification with homosexuality and/or bisexuality begins. Teenagers who search the internet for information tend to learn more about their sexuality and how to stay safe from STIs and HIV/AIDS. This has significant implications for teenagers' sexual and mental health and for helping teenagers to develop life-affirming health behaviours.

The study revealed low usage of ICT to access contraceptives information as compared to the national usage of internet by teenagers in Ghana. Use of the ICT services varied among respondents in terms of demographic and socio-economic factors of the teenager and also the teenager's perception in terms of the need and quality, friendliness of staff and promotion of contraceptives. Various factors accounted for the low use of family planning services information by teenagers online. These included partner's approval even though teenagers most especially the females might have read about them on the internet, quality of the services,

friendliness of the staff administering the services and the teenagers knowledge about family planning services.

Other factors that accounted for the low patronage and accessibility of contraceptives through ICT included the teenager's income level, educational level, knowledge of ICT, proximity to the provider and the religious background of the respondents. The respondents were not earning any form of income except for the "pocket money" given by parents. The teenagers' educational level was also a problem because they are thought to abstain from sex instead of the use of contraceptives. Another reason some respondents gave was the fact that they had access to ICT but did not have adequate knowledge on how to manipulate the ICT system.

The "sick bays" or school clinics in the various schools do not also make available contraceptives for students to have access to. More to this, some respondents complained of the fact that their religious backgrounds do not allow them to willingly and freely access contraceptives since their various religious denominations frown on the use of contraceptives, especially by teenagers. To increase the use of family planning services among women in communities, activities of community based distributors should be revived and enhanced, promotion of family planning education and activities at the household level should be accorded priority. Formation of lobby groups to enhance cultural change, awareness creation and counselling and integrating family planning services with HIV/AIDS are seen as best ways to encourage young people to seek family planning services.

5.6 How ICT Influence the Attitude and Perception of Teenagers towards Contraceptives

Despite the known benefits of family planning, more than 120 million women globally aged 15 to 49 who are married or in a union have an unmet need for family planning (United Nations, 2011). Studies show that women who begin childbearing early are more likely to fall into a





pattern of having births too closely together making it possible for these women to have larger families. The consequences of unsafe abortion and unwanted pregnancies are also extremely worrying. It has been noted that information and communication technology (ICTs) in response to the health concerns was discoursed as far back as two decades ago particularly on how it could possibly be used in health service delivery. Sexuality during early teenage is characterized by individuals being shy and modest. They may also have a greater interest in privacy, experiment with their body (masturbation) and worry about being normal. Teenagers in this group do not usually interact in romantic relationships but when they do, the encounters tend to be awkward, self-conscious and filled with doubt.

As more and more women start having sex at an earlier age, delay childbearing for longer and have smaller families, many of them are destined to use contraception for more than thirty years. Most women will do almost anything to avoid an unwanted pregnancy and presently tolerate the inconvenience, side effects and albeit small risks of currently available methods. Many live in countries and have lifestyles that do not put them at risk of HIV; in any case many would be prepared to use a method of contraception while at the same time using something else which prevents infection. Results from the research indicated that majority of the respondents (76.5%) perceived the use of ICT to have changed their perception on contraceptives use and stated that it was important to use ICT in health service delivery especially with regards to contraceptives. It was observed that although teenagers were not so much using ICT in accessing contraceptives information, their perception towards ICT/contraceptives was encouraging. These perceptions of respondents that ICT has helped change their attitudes and perception about contraceptives is good since an informed teenager would be in a better position to make a better choice with regards to sexual needs and practices.

This finding agrees with the findings made by the World Bank (2003) where studies show that the internet is the primary general information source for adolescents, regardless of their socioeconomic and ethnic backgrounds and the fact that most health information is accessed through search engines with a high success rate. Further results from the research revealed that, majority (65%) of respondents stated the advantage of using ICT in accessing contraceptives information to be that, it is less costly, 20% respondents mentioned that it helps them change myths and perceptions about contraceptives while 15% respondents said it provides a wide range of contraceptives information to them anytime they want to access them. Respondents revealed that providing a tailored SMS concerning contraceptives use specifically to address the needs and concerns of teenagers and placing such information in a widely used medium together with vigorous media participation of contraceptive programs involving teenagers and free online information on contraceptives would change attitudes and perceptions of teenagers towards contraceptives. One of the critical issues respondents identified as a factor if tackled could improve contraceptives use among teenagers was the issue of perceived side effects of certain contraception methods for women.

This finding from the study is in line with the findings made by Riddle and Estes (2008) where a large body of qualitative research suggested similar myths about contraceptives which they identified to be very prevalent throughout sub-Saharan Africa and elsewhere, usually related to side effects, safety, and long-term effects on fertility. Prior research at Gombe Hospital in Uganda, found patients who commonly believed that hormonal pills accumulate in the body, leads to “deformed children” and cause cancer (Riddle and Estes, 2008). Henceforth, providing enough sensitization possibly through ICT to teenagers concerning contraceptive information suggests that, accurate knowledge would be positively associated with increased contraceptive



use and intentions. A study in the Gambia by Tuladhar and Holoway, (2009), has shown how reproductive behaviour and decision-making, based on local understandings of bodily processes, “...fly in the face of every major demographic theory that has been advanced to explain fertility behaviours in Africa”. The use of contraceptives following reproductive mishaps, such as miscarriage, in a society that places a high value on fertility, does not correspond with conventional understandings of demand and supply. “Rural Gambians see fertility as limited by a woman's eroding bodily capacity to bear a child safely over successive pregnancy outcomes. This several researchers have stated can only be changed if teenagers are better informed about contraceptive messages through the application of correct ICT techniques.

This capacity wears out less with the passage of time than with the cumulative effects of wear and tear on the body, particularly in the wake of obstetric traumas. Since the pace of this decline can be slowed with ‘rest’ between pregnancies (that is, the creation of recuperative space) and since time spent in ‘resting’ is considered largely irrelevant to ultimate child numbers, it is not surprising that the most traumatic health assaults, such as those that reproductive mishaps reflect or intensify, produce the strongest contraceptive responses.

In the rural Zambia, findings by Clement and Nyovani, (2004), in context of high levels of reproductive morbidity and mortality, it is a health model, not a demographic one, which dominates people's thinking and decision-making about contraception and patterns of contraceptive use. Other cross sectional studies have shown that knowledge and behaviour around fertility control are congruent with local health-belief systems. Where social and political marginalization and poverty act as significant constraints on access to healthcare, women often continue to exploit localized strategies for fertility regulation, such as sexual abstinence. Ethnographic research among the Yoruba of Nigeria according to Kahad, (2010), reveals that the



possibility provided by modern contraceptives to divorce sexuality from reproduction is not universally perceived as a source of women's empowerment, with terminal sexual abstinence to end childbearing being viewed as a well-earned rest. This is such that the practice conflicts with the western liberal view of female sexual rights and the biomedical perception of biological needs. Many health systems in Nigeria have also thought of introducing contraceptive information to teenagers through the application of ICT to improve knowledge of teenagers.

Contraceptive prevalence is a key to improved reproductive health and environmental health and also to demographic and economic development. The heightened demand for effective family planning services for safeguarding reproductive health of a woman and her children clearly asks for a multi-level model approach so that available contraceptive technology is disseminated to the 'user' in a manner that it is understood and at the same time available to the 'user'. There is a marked increase in sexual activity in the teenage population which demand that teenagers need access to information about sexual and reproductive health as well as contraceptive choices. They must be able to make their choices to prevent unwanted pregnancies based on informed knowledge of the health concerns and side effects of such contraceptives.

Very often teenagers have wrong perceptions of reproductive health matters and consider that there is little risk of pregnancy. Family planning is a pillar of safe motherhood and is now seen as a human right. It is a cost effective method of reducing maternal morbidity and mortality. Contraceptive methods have had a considerable positive impact on maternal and infant health as well as population growth. It is however unfortunate that unwanted pregnancies and unsafe terminations of pregnancy still occur in large numbers. This situation therefore highlights the need for teenagers to access contraceptives (condoms, the pill) willingly through ICT when they are reluctant to visit the health facilities. The positive impact of quality contraception methods



for people could be attributed to the fact that in the process of making a decision on using family planning services, perceived quality of the service is given a high consideration as supported by theory whereby taste and preference is an important factor in making demand decision. Proximity to family planning services provider has an increased effect of accessing contraceptives, implying that the further away from the family planning service provider, the lower the likelihood of seeking the services.

The negative impact of distance from the service provider can be attributed to the fact that when the provider is far away from the woman, there is bound to be some imbedded costs in terms of transport and transaction costs as well as waiting and travelling time, which may discourage a person from seeking the service hence the need for ICT influence in accessing contraceptives.

5.7 Barriers of Contraceptive Usage through the Application of ICT

Several barriers to contraceptives use have been well illustrated including culture and religion and the desire for more children. It may seem obvious, but contraception cannot be separated from sex, and everyone is interested in sex. Thus, in contrast to, say, anti-hypertensive drugs, everyone tends to have a view on contraception. Contraception is also inextricably bound up with social, cultural, moral and religious factors that often influence, if not the availability of methods, certainly their accessibility. Findings from the study revealed 185 (92.5%) respondents mentioning that there are obstacles to contraceptives use. It was revealed that the major key barriers to teenage access to contraceptive use were lack of confidence in service providers' attitude, culture, religion, absence of contraceptive commodity, perceived cause of infertility (myths) and educational level. These findings from the study are at variance with the findings made by Clement and Nyovani (2004), where lack of support from friends, parents or partners were mentioned by teenagers as barriers to their contraceptive use.



The findings from the research again, are at variance with the findings made by Kahad (2010) where throughout literature in developing countries, economic underdevelopment and poverty contextual factors are identified as determinants of contraceptive use and the uptake of sexual health services among people. However, the results agree with the findings made by Abiodun and Balogun (2009) where in Uganda, the most common obstacle to contraceptives use identified among women was lack of access to commodities and information concerning contraceptives methods and use. Again, the findings made by Kahad (2010) in Ghana, reports of mistrust of service providers as a major barrier to teenagers accessing sexual and reproductive health services in health facilities in the country. Reproductive behaviour is embedded within specific social relations, political and cultural contexts. Creating conditions which support behaviour change is a critical dimension of health and HIV/AIDS policy. Programme development requires analysis of these contexts to pave way for effective utilization of contraceptive information and services by teenagers and all people alike.

However, the dominant conceptual framework for understanding reproductive behaviour is highly individualistic derived from the fertility cost-benefit models espoused by Becker and Easterlin, with the unit of decision-making being the individual or the 'reproductive' couple. Ethnographies have demonstrated that such a paradigm is flawed both in its understanding of human action and in its assumptions about the central units of reproductive decision-making. Far from being an individual decision-making process, reproductive behaviour is shaped by social relations and institutions at the local level, such as kinship groups, informal social networks, local political institutions, religious and spiritual advisors and healers, which are influenced by the wider social, political, economic and historical processes within which an individual lives.





Given increasing adolescent sexual activity and decreasing age at first sex in developing countries, the use of contraceptives to prevent unwanted pregnancy, abortion and minimize the risk of STI transmission is particularly important. While literature on prevalence of contraceptives usage among teenagers in Ghana is limited, it has been found to be low in some developing countries as well. While most people today look forward to the increase in human freedom provided by contraceptives use, many have mixed feelings about the other side of the coin: There may be more sexual intercourse between unmarried couples, including the very young. For this reason, official sex education classes in schools, churches and youth organizations often shy away from the subject. Furthermore, while most educators have little difficulty explaining the facts of human reproduction, they are usually ill at ease describing the various contraceptive methods because they then have to discuss the details of sexual activity. Sexuality during middle adolescence tends to be focused on sexual attractiveness, with individuals frequently changing relationships, if culturally acceptable. Fear and discomfort may be shown towards the opposite sex (or same sex) as well as feelings of tenderness, love and passion.

Gender stereotypes and role expectations often put adolescents at serious health risk. Very often teenage men are taught that being sexually active is a very important part of being a “man”. The messages and practices that they learn from their social environment (peers, fathers, uncles, and male associates) may be inaccurate and counter to healthy practices. For example, teenage men might be ridiculed for not being sexually active or teased as being homosexual; they might be encouraged to obtain sexual initiation from a sex worker without using condoms; and sexually transmitted infections may be regarded as a “rite of passage” for masculinity. Female teenagers on the other hand are often socialized to be non-aggressive and to abstain from sexual activity

until marriage. Female teenagers therefore receive positive reinforcement for being quiet, innocent and unaware of sexual matters. This can place them in a difficult position and can impede their participation in (or initiation of) meaningful communication or reduce their ability to refuse unwanted sexual advances and/or to negotiate safer sexual practices when sexual intercourse is desired.

The advent of the oral contraceptive pill, developed by Pincus, Rock and colleagues and first marketed in 1960, heralded a revolution in contraception and arguably laid the foundations for women's liberation. Perhaps the most widely researched drug in the history of therapeutics, the pill has been repeatedly shown to be safe and effective. It has been and remains a favourite subject of media hype but despite its safety record, the majority of women still perceive the pill as potentially dangerous. It is of course statistically much safer than pregnancy. In social settings where teenage females marry early, they are typically married to older men who very often have the financial ability to support them. Marriage confers on the teenage, the status of adulthood. However, by virtue of differences in age, education, income-generating capacity and the non-assertive role expectations of the adolescent woman and her older husband, a relationship imbalance exists. This imbalance makes it very difficult for her to discuss matters such as the desired timing and number of children, contraceptive use and protection from sexually transmitted infections.

In terms of attitudes, a high proportion of people consider that women have a more responsible attitude to contraceptives than men, perhaps a predictable response. Nearly as a more pragmatic concern, people consider that contraceptives should be made easier for teenagers to get hold of, without parental knowledge to enhance effective utilization of the commodities. This concern is a positive relation to the findings in the study where respondents who use contraceptives did not



have any serious complains about side effects. This somehow gives the safety assurance of fewer side effects. Therefore teenagers (especially above 18 years) can have the ability to use contraceptives even if their parents or guardians are not in support. This also reflects growing concerns about teenage pregnancies and the number of teenagers having unprotected sex through ignorance or fear of going to a family doctor to obtain contraceptives.



CHAPTER SIX

Summary, Conclusion and Recommendations

6.1 Introduction

In this chapter, a brief summary of findings from the research has been made, following which conclusions have been succinctly presented and recommendations made in line with the findings that emanated from the research work. It is expected that the recommendations made would be used to advance the campaign for teenagers to use contraceptives to curb unintended pregnancies.

6.2 Summary of Findings

Findings from the research shows that more than half 120 (60%) of the respondents were between the ages of 11-15 years with the average age of the respondents being 14.96 years and the minimum age being 11 years while the maximum age was 19 years.

It was further revealed that more than half again of the respondents representing 55% were females at the time of the research and obviously formed the majority of the respondents for the study. Concerning the educational level of respondents, it was observed that a very high proportion 156 (78%) of the respondents had Junior High School education with most respondents representing (95%) being single. The results further revealed that majority of the respondents representing 83% were Christians.

Long held traditions of beliefs and perceptions about contraception and pregnancy, contraceptive types perceived to have side effects, difficulties using methods and lack of satisfaction with availability of service providers are among the reasons cited by respondents for the limited success with contraception especially the teeming youth in the municipality and beyond. Within the social network, the findings point to the importance of partner views in determining use or



non-use of modern contraceptives. In the study, it was discovered that partner's influence was found to be a key barrier, based on the partners' decision to exert influence on childbearing and unfounded concerns about family planning methods.

Some respondents reported not to accept the use of some methods because they associated them with poor health, infertility, birth defects, infidelity and promiscuity. Contraceptives were also seen to reduce a woman's libido, thereby resulting in less pleasure during sexual intercourse. Significant disparities in the rate of unintended pregnancies exist between different socio-economic status of teenagers, educational level of teenagers and knowledge. Poverty and chaos in women's lives may predispose them to a cycle of unintended pregnancies. Lack of knowledge toward contraception and avoidance of pregnancy may lead to non-use of birth control. Results further revealed that an over whelming majority of the respondents (97%) have heard of contraceptives before. However, only a few have used contraceptives before and none of them had accessed contraceptives through ICT methods.

Respondents explained contraceptives according to their own understanding including medicine that prevents pregnancy. Respondents' sources of knowledge about contraceptives included; radio, television, school, friends, health workers, peer educators and mostly close friends. Sources of contraceptives for respondents were markets, close friends, health facilities, pharmacy, chemical sellers and drug peddlers. Further revelations from the study indicated that 35% respondents perceived contraceptives to be good while 25% respondents perceived contraceptives to be bad. Interestingly about 40% of respondents could not tell whether contraceptives are good or bad. This clearly shows the educational gap.

Additionally, findings from the research indicated that majority (60%) of respondents had knowledge that contraceptives can be accessed through ICT while 40% respondents mentioned



that they had no knowledge of ICT being used to access contraceptives information and services. Respondents again, indicated that (25%) using ICT to access contraceptive information is very confidential because there is no third party to misinform the public. Eighty percent (80%) respondents perceived the use of ICT on accessing contraceptives as good while 20% respondents perceived the use of ICT in accessing contraceptives as bad. This result is very positive since majority of teenagers have access to one ICT tool or the other.

Further results revealed that majority of the teenagers representing 65% identified the mobile phone, 20% respondents mentioned computer, 10% respondents identified ipads while 5% respondents mentioned television or radio as equipment that can be used to access contraceptives information. Majority (140) of the respondents representing 70% stated that their preferred component to be used to access contraceptive information from the internet is the mobile phone. This response gives a clear reason as the fact that most teenagers have their personal mobile phones with which they can browse. The research also revealed that majority of the teenagers representing 75% said they have sexual partners. This finding is a source of worry because none of the respondents has ever accessed contraceptives through ICT although majority have mobile phones with which they browse, yet their religious backgrounds, parents and attitude of health professionals do not allow them to access contraceptives in the health centres. The question therefore is, how do 75% of teenagers within the municipality prevent pregnancies and STIs when they have sexual partners?

On the various types of contraceptives, respondents were also able to mention a few. Half of the respondents (50%) identified the male condom, 15% respondents mentioned the emergency contraceptives pills, 5% respondents mentioned withdrawal method and 10% respondents identified natural family planning method while 5% respondents mentioned intrauterine devices



(IUDS). The results further revealed that 82% (164 respondents) of the teenagers were not using contraceptives regularly whiles citing negative perceptions about contraceptives as reasons. Of those who were using contraceptives, 40% preferred condoms, 19% preferred injections and 25% preferred emergency contraceptive pills.

Some of the respondents (42.5%) stated that the reason why they were not using contraceptives regularly was because of its interference with sexual pleasures during sexual intercourse, 30% of respondents with sexual partners said contraceptives causes birth complications during child birth mostly in later life, 15% also mentioned that they were not using contraceptives because of religious reasons and others (12.5%) stated that their partners do not like and the commodity may not be readily available at the time of the act. Respondents mentioned that an SMS based mobile telephone network could be used to send vital information on contraceptives by service providers to teenagers between cell phones and other devices. Through the mobile network SMS texting, the message would alerts teenagers to new information on contraceptives. This, respondents stated would improve their knowledge and attitude towards contraceptives use. Thirty percent respondents mentioned that the use of ICT has affected teenagers negatively as many of them now know what ways to follow in terminating pregnancy.

Forty five percent teenagers stated that the use of ICT by teenagers has never been helpful as many of them use it to view pornographic movie instead of accessing contraceptives information which can lead to increased promiscuous life among teenagers, 20% respondents mentioned that the use of ICT can result in an increase in STIs among teenagers as many of them indulge in sex without any form of protection and 5% respondents mentioned that the use of ICT could lead to death as many teenagers may misapply certain information providers online.



Fifty seven percent respondents mentioned that it was easy for teenagers to access contraceptive information by the use of ICT while 56 (28%) said it was not easy for teenagers to access contraceptives information by using ICT. meanwhile, 30 (15%) respondents could not tell whether it was difficult to access contraceptives information or not at the time of conducting the research. Seventeen percent respondents stated that they access contraceptives information using ICT once a week, 20 (10%) respondents also stated that they access contraceptive information using ICT once every two weeks, 50 (25%) respondents said they access contraceptive information using ICT once every three weeks and 96 (48%) respondents mentioned that they access contraceptives information by the use of ICT any time they wanted. Almost ninety-three (93%) percent respondents mentioned that there were obstacles to contraceptives use while 15 (7.5%) respondents said otherwise.

In examining differences between women and men in their desire for more children in sub-Saharan Africa, partners tend to have similar ideal family sizes. When differences exist, men typically want more children than women, though women often perceive their husbands to want more children than they actually do. It has been observed that contraceptive services offer various economic benefits to the household, country and the world at large. Firstly, contraceptive permits individuals to influence the timing and the number of births, which is likely to save lives of children. Secondly, by reducing unwanted pregnancies, contraceptives service can reduce injury, illness and death associated with child birth, abortions and sexually transmitted infections (STIs) including HIV/AIDS. Further, contraceptives contribute to reduction in population growth, poverty reduction and preservation of the environment as well as demand for public goods and services.



6.3 Conclusion

Young persons are an important resource in Ghana who needs good health and access to contraceptives use. Research evidence confirms that good health brings about improvement in the cognitive development of young persons. The challenge is in developing creative ways of meeting the unmet needs of young persons in terms of their sexual and reproductive health. Findings from the research revealed that there was high knowledge of contraceptive among the respondents but surprisingly a low usage among them. Perception of teenagers on the use of ICT was good. It was revealed that most teenagers were very much interested in using the internet for social media communication with only few respondents using ICT for accessing contraceptives information. Teenagers also perceived contraceptives use from internet as safe, confidential and readily available at a rather low cost. Results from the study further revealed that 10% respondents mentioned that they have ever used ICT to access contraceptive information.

Various facility factors were considered which in a way served as a barrier to effective utilization of contraceptives among teenagers. Among them are the quality of contraceptives services, availability of contraceptives information and services through many avenues including ICT, culture, personal likes and dislikes, proximity of the family planning facility and friendliness of service providers towards teenagers. Notable views provided were uncertainty by respondents about the availability of the contraceptives services as well as the availability of contraceptives information sometimes in certain recognized places at the study area making it difficult to access contraceptives.

Failure to help young people deal with sexuality and contraception leads to high incidences of pregnancy, STIs and HIV and AIDS, as well as high maternal and infant mortality. Reproductive health care services need to be available, accessible and comprehensive and to provide



education, counselling and be adolescent-friendly, allowing teenage girls to be matured and responsible persons in latter life. Among the statistically significant determinants about the likelihood of usage of contraceptives services by teenagers by order of their marginal effect were the partner's approval, religion, knowledge of family planning services, friendliness of family planning staff, quality of family planning services, proximity to the family planning facility and income. All explanatory variables positively influenced the usage of contraceptives services except religion and proximity to the family planning facility. The study revealed that the farther away the teenager was from the family planning facilities and services the lower the likelihood of using their services.

Findings from this research confirm that awareness and knowledge of contraceptives do not necessarily translate to use. The main barriers to modern contraceptive uptake among young people in the study area are myths and misconceptions, with both users and non-users exhibiting lack of factual information on the different contraceptive methods. Social networks (fan clubs, friends etc) influence contraceptive use by exaggerating side effects and spreading myths. The data from this study highlights the social nature of beliefs and behaviours around contraceptives. The decision to use or not is primarily influenced by others from within the social network, whose views and perceptions are often more important than an individual's own. Therefore, family planning campaigns should look beyond the individual - to social networks in order to drive demand and remove barriers.

6.4 Recommendations

Based on the findings from the study, the following recommendations are made for consideration by institutions, organizations and individuals who are interested in improving maternal, sexual and reproductive health among teenagers in Sunyani and Ghana as a whole.





1. The government through the Ministry of Health should revive and support family planning education at both institutional and community levels that targets the teenagers. This could be undertaken through print and mass media, market places as well as newsletters and posters. Additionally, the Ministry of Health should encourage the uptake of contraceptives at household level by enhancing continuous promotion of family planning services and provision of free condoms since the teenagers prefer condoms to other contraceptives. This could be realized by supporting family planning outreach activities by the health workers. This is expected to contribute positively towards enhancing awareness of family planning services, the benefits and side effects.
2. The Municipal Health Directorate should enhance standards and regulations governing contraceptives usage to ensure high quality contraceptives provision to the public.
3. The Municipal Health Directorate should liaise with the Municipal Education Directorate in the creation of advocacy groups at community level. This will not only articulate the rights of the clients, in this case the teenager who seeks contraceptives and will lead to cultural and attitudinal change towards the services thereby encouraging their uptake.
4. Both adult and teenage male partners of females should be involved in understanding contraceptive practices through educational programmes organised by the health staff and Ghana education service staff. This will prevent negative attitudes, gender and patriarchal systems of behaviour.
5. More education on human reproductive health and contraceptives should be made available early, at the basic school level of a child's education by the health service staff responsible for reproductive health within the municipality. This will eliminate misconceptions about contraceptives. Girls should be empowered to take responsibility

for the use of contraceptives by enlightening them with proper and adequate information about their functioning, usage and methods.

6. Health workers should be given regular in-service training by the Municipal Health Directorate in order to enable them provide a detailed contraceptive service and contraceptive counselling to teenagers especially. Teenage girls should have access to confidential counselling and quality contraceptive information and services by the reproductive health staff, including emergency contraception where appropriate. Negative attitudes and perceptions about contraceptives should be broken down by encouraging girls to take responsibility for their sex life, initiate conversation on contraceptive issues and consult health facilities to clarify misconceptions.



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APPENDIX I

Appendix ‘A’ – Structured questionnaire

Informed Consent

Good morning/afternoon. My name is Eunice Prah. I am a student of University for Development Studies pursuing masters in Community Health and Development. I am conducting a research concerning mostly contraceptive uptake among teenagers with the help of ICT. I would be very glad if you could participate in this study. The information provided by you would assist decision making bodies in this study area and the government to enact policies that will help improve the situation under investigation.

Completing this questionnaire may take between 15 to 30 minutes to finish. Whatever information you provide will be kept strictly confidential.

PART ONE-DEMOGRAPHIC DATA

1. Age of respondent : a) 11-15 () b)16-20 () c) 21-25 ()
2. Educational level: a) JHS () b) SHS ()
3. Marital status: a) Single () b) Married () c) Divorced () d) Widowed ()
4. Religious background: a) Christianity () b) Islam () c) Traditional () d) Others.....
5. Gender : Male a) () b) Female ()

PART TWO- ICT AND SEXUAL BEHAVIOURS OF TEENAGERS

6. Do you agree that ICT has an effect on the sexual behaviour of teenagers? a. Yes () b. No ()
7. Give reasons for your answer above.

.....



.....
.....
.....

8. Do you have a sexual partner (s)? a) Yes () b) No ()

If NO, please move to question 14

9. If yes above, how many?

10. How did you meet your partner(s)? a) Through a phone call b) On the internet c) Others
.....

11. Why do you have a sexual partner?

.....
.....
.....

12. Are your parents aware of your sexual partner? a) Yes () b) No ()

13. If you get pregnant or impregnate your partner, what will you do?.....
.....
.....

14. Do you watch or read about pornography?

a) Yes () b) No ()

15. Have you acquired a sexually transmitted infection (STI) before? a) Yes b) No ()

16. If Yes above, what type of STI did you acquire?

PART THREE- ICT AND CONTRACEPTIVE AWARENESS

17. How do you understand contraceptives?



- a) Medicine to stop pregnancy
 - b) Medicine for women only
 - c) Medicine that prevents women from giving birth
18. How do you learn about contraceptives? a) From my teacher () b) From the internet ()
c) Radio () d) Others ()
19. Who can use contraceptives? a) Children under 10 years () b) all persons within the reproductive age range () c) women above 50 years () d) pregnant women ()
20. How many contraceptives can you identify in Ghana? a) 1 () b) 2 () c) 3 () d) more than 4 ()
21. Kindly mention the contraceptive methods/ types you know can be patronised in Ghana?.....,
.....,
.....,
22. What do you perceive contraceptives to be? a. Good () b. Bad ()
23. Have u ever used ICT to access contraceptive information? a. Yes () b. No ()
24. Do you know any advantages of using ICT to access contraceptive information a. Yes () b. No ()

PART FOUR- ICT AND ATTITUDE TOWARDS CONTRACEPTIVES

25. Is there an adolescent corner in your community? a) Yes () b) No ()
26. If yes above, have you visited the corner before? a) Yes () b) No ()

If no above please move to question 28



27. If yes, how were you influenced to visit the corner? a) Through adverts on the internet b) Through adverts on the radio c) Through a text message received from the corner d) through friends

28. If No in 26 above, why have you not visited the adolescent corner before?

- a) The health personnel there are not friendly ()
- b) It is too far from where I live ()
- c) People will think I'm a bad teenager ()
- d) My parents will not allow me to ()

29. Have you read or watched a video about contraceptives and pregnancy before?

- a) Yes () b) No ()

PART FIVE- ICT AND BARRIERS OR REASONS WHY TEENAGERS DO NOT

USE CONTRACEPTIVES

30. Have you used contraceptives before? a) Yes () b)No ()

If no above, please move to question 33

31. If yes, from which source?

32. How was your experience when you used it?

- a) It was very beneficial ()
- b) I experienced complications ()

33. If no in 30 above, why have you not used contraceptive before?

Please choose any answer that is appropriate, you can choose more than one answer

- i) Because of the myths about contraceptives ()
- ii) Because I don't have enough information about contraceptives ()
- iii) Because contraceptives are expensive/ scarce ()



- iv) Because my partner does not accept contraceptive use ()
- v) Because of my religious beliefs ()

34. What is your opinion on sexually active teenagers being introduced to contraceptives through ICT?

- a) Strongly agree () b) Agree () c) Strongly disagree () d) Disagree ()

35. Have you had education about the side effects of contraceptives before?

- a) Yes () b) No ()

If no, please move to question 38

36. If yes above, from who? a) Teacher () b) News paper () c) Internet () d) Radio () e) Others ()

37. How beneficial was the education?

.....
.....
.....

38. Do you think there is the need to intensify contraceptive education through ICT?

- a) Yes () b) No ()

39. Are you currently using any contraceptive? a) Yes () b) No ()

If no, please move to question 41

40. If yes above, which contraceptive are you currently using?

41. Do you intend to use contraceptives any time soon? a) Yes () b) No ()

42. Which of the contraceptive brands would you prefer?



PART SIX- ATTITUDE OF TEENAGERS TOWARDS ICT AND
CONTRACEPTIVE ACCESSIBILITY

43. In your opinion, what is information and communication technology (ICT)?

.....

44. Kindly mention some examples of ICT systems where contraceptive information can be accessed.

.....

.....

45. Do you think ICT should be used to access information about contraceptives?

a) Yes () b) No ()

46. Give reasons for your answer above

.....

.....

.....

47. How do you perceive ICT to be? a. Good () b. Bad ()

48. Do you prefer learning about contraceptives through the use of ICT to other information sources? a) Yes () b) No ()

49. What do you use ICT for?

50. Which of these ways would you prefer ICT information to be spread?

a. Load on Facebook () b. Load on WhatsApp ()

51. Can contraceptive services be accessed via ICT? a. Yes () b. No ()

52. Have you ever received contraceptive service via ICT? a. Yes () b. No ()

53. Can ICT change teenagers attitude towards contraceptives use a. Yes () b. No ()



54. What are the merits of using ICT to access contraceptives information? a. Less costly ()
b. Can be referred to later () c. Wide sources of information ()

LEVEL OF ICT USAGE BY TEENAGERS TO ACCESS CONTRACEPTIVES

This level should only be answered by respondents who access contraceptives through ICT facilities.

55. Is it easy to access contraceptives on an ICT facility? a) Yes () b) No ()

56. How often do you access contraceptives using ICT?

- a) Once a week () b) Once every 2 weeks () c) Once every 3 weeks ()
d) Anytime I want to ()

57. Are contraceptives expensive when accessed on an ICT facility?

- a) Yes () b) No ()

58. If yes in 59 above, how expensive?

- a) Moderately expensive () b) Very expensive ()

59. Do you think ICT can change those barriers a. Yes () b. No ()

Thank you



APPENDIX II

Appendix ‘B’ – Structured Interview Guide

1. Introduction of researcher
2. Consent from respondent
3. Date and time of interview

PART ONE-DEMOGRAPHIC DATA

1. Age of respondent : a) 11-15 () b)16-20 () c) 21-25 ()
2. Educational level: a) JHS () b) SHS ()
3. Marital status: a) Single () b) Married () c) Divorced () d) Widowed ()
4. Religious background: a) Christianity () b) Islam () c) Traditional () d) Others.....
5. Gender : Male a) () b) Female ()

PART TWO- ICT AND CONTRACEPTIVES

1. In your opinion, what are contraceptives?
.....
.....
2. Have you used contraceptives before? a) Yes () b) No ()
3. If yes above, what was your experience?
.....
.....
4. If no above, why?
.....
.....
5. Do you agree to the introduction of contraceptives to teenagers through ICT?
a) Yes () b) No ()
6. Give reasons for the answer above?
.....
.....



7. The contraceptive patronage among teenagers in the municipality is very low, why do you think this is so?

.....
.....

8. In case you are called to be a volunteer in educating teenagers about contraceptives, will you be willing to do so? a) Yes () b) No ()

9. Give reasons for your answer?

.....
.....

10. In conclusion, what advice do you want to give the health ministry in relation of contraceptives and teenagers?

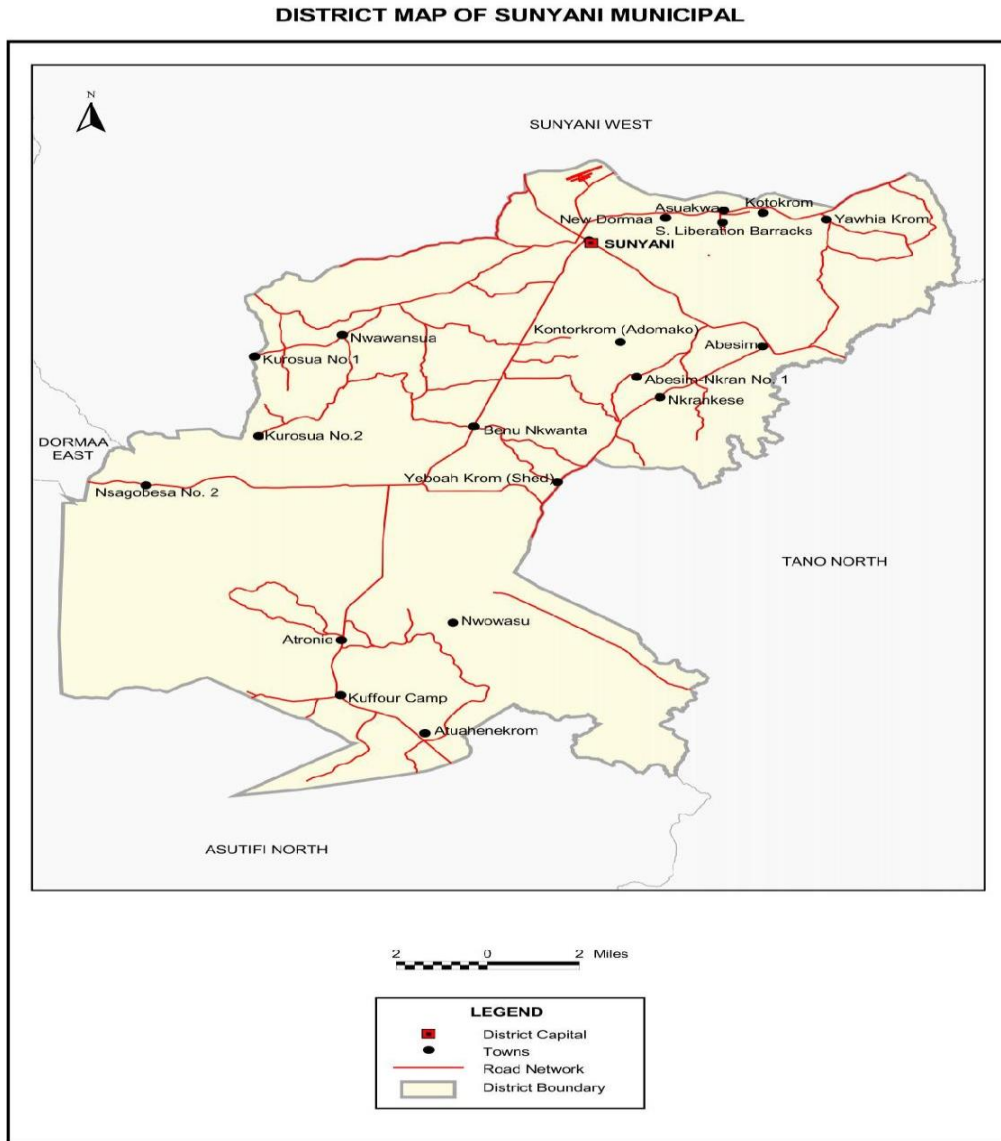
.....
.....

THANK YOU



APPENDIX III

Appendix 'D' – Map of Sunyani East Municipality



Source : (GSS, 2014)

