REPRODUCTIVE AND CHILD HEALTH: CONTRACEPTIVE KNOWLEDGE, USE AND FACTORS AFFECTING CONTRACEPTIVE USE AMONG FEMALE ADOLESCENTS (15 – 19 YEARS) IN GHANA

BY

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DECLARATION

I hereby declare that this submission is my own work towards the Master of Science Degree in Economics and that, to the best of my knowledge, it contains no material previously published by another person nor materials which have been accepted for the award of any other degree of the University, except where due acknowledgments have been made in the text.

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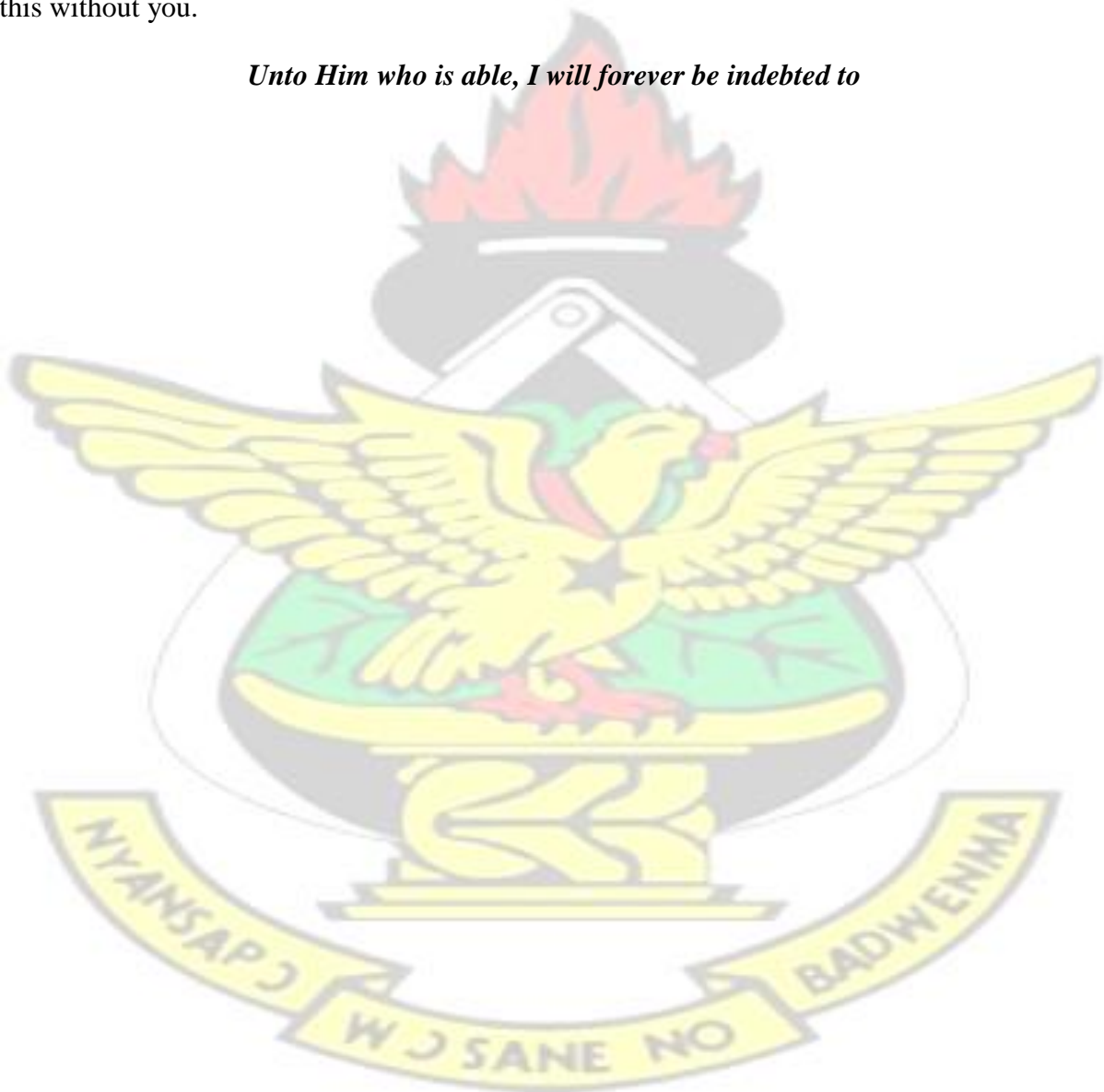(HEAD OF DEPARTMENT)   SIGNATURE   DATE

ACKNOWLEDGEMENTS

To my family who unceasingly believe in me, I say thank you for your support and prayers.

To Dr. Eric Arthur, thank you for your wonderful supervision.

To my sister, Beatrice Darko, I am grateful for your constant support. I could not have done this without you.

Unto Him who is able, I will forever be indebted to

DEDICATION

To my mum, Mrs. Mina Amponsah Darko and my sisters, Beatrice Darko and Hellen Darko.

GLOSSARY

1. Family planning: This refers to the practice of controlling the number of children one has and the intervals between their births, particularly by means of contraception or voluntary sterilisation.

2. Unmet need: Women who have unmet need for contraception are defined as those who are fecund and sexually active, who want to stop or delay childbearing but are not using any method of contraception.

3. Contraceptive Prevalence Rate (CPR): This is defined as the percentage of currently married women who are currently using a method of contraception.

4. Reproductive health: This is defined as a state of physical, mental and social well-being in all matters relating to the reproductive system, at all stages of life.
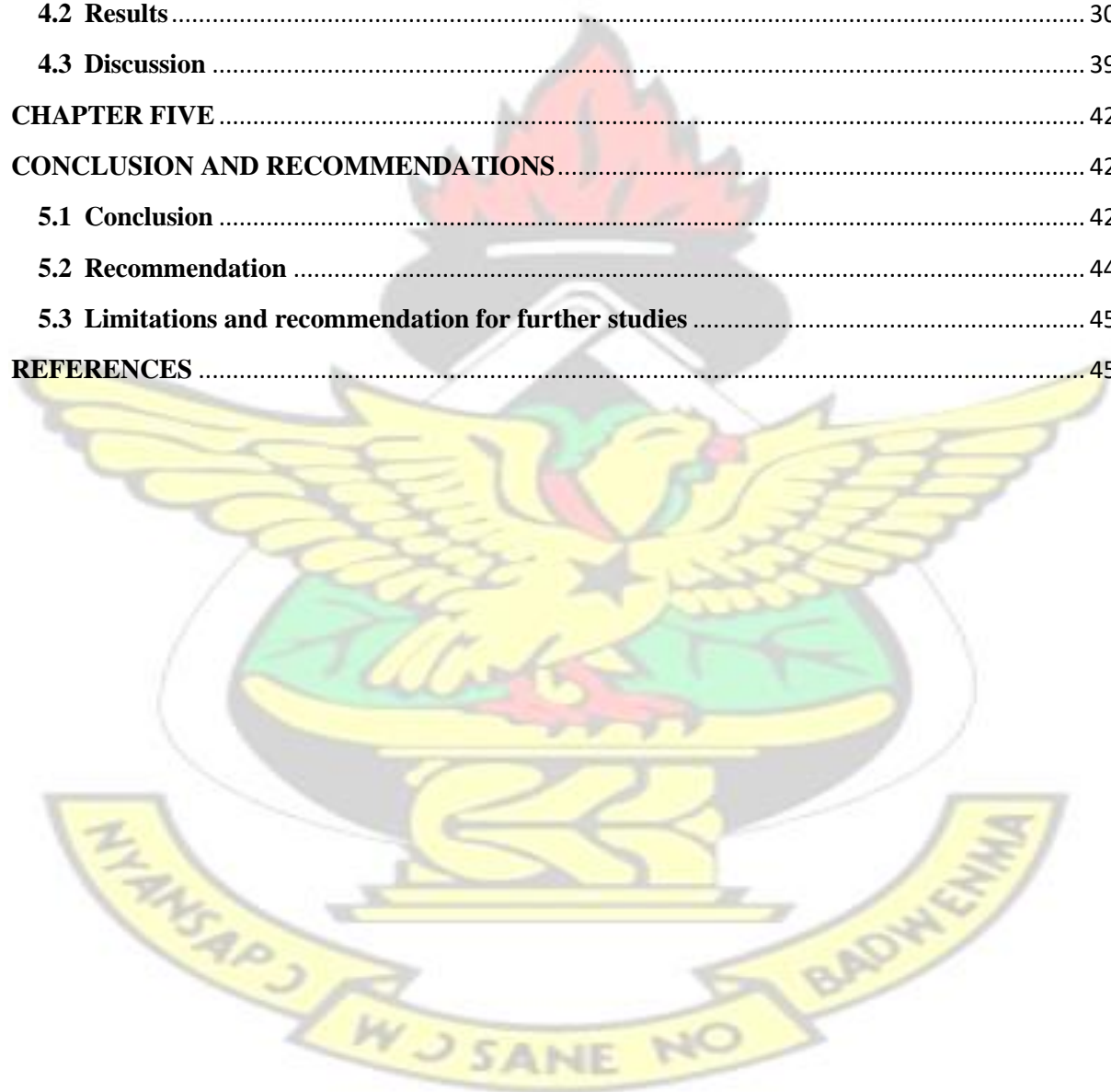
ABSTRACT

Though contraceptive knowledge has become widespread among female adolescents in Ghana, its use has persistently remained low. This paper assesses the knowledge of contraceptive methods and identifies factors affecting contraceptive use among female adolescents, aged 15 – 19 years in Ghana. Using data from the 2014 Ghana Demographic and Health Survey (GDHS), descriptive, binary logistic regression and multinomial logistic regression models were the principal methods for analysing the data. The findings of the study revealed that the knowledge of modern methods of contraceptives was almost universal with 96.5% of respondents knowing at least a method. Region of residence, together with all its categories, was the only variable that was significantly associated with the current use of contraceptives among female adolescents. It further revealed a significant association between ethnicity and contraceptive use only in respect to female adolescents who were mole-dagbanis. The level of education, religion and wealth had a weakly significant effect on contraceptive use. There was also no significant association between contraceptive use and work status, marital status, health insurance coverage and the type of place of residence. In choosing the type of contraceptive method, all the variables were strongly associated with choosing traditional method of contraceptives over modern methods; with the exception of female adolescents who had basic education and those who were Presbyterians and had no health insurance coverage. Bearing on the fact that contraceptive knowledge has not translated into its use, it is necessary to further promote the use of family planning and to stress the need to educate the adolescent on the benefits of using such measures.

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CHAPTER ONE

INTRODUCTION

1.1   Background of the study

Fertility plays a crucial role in determining the size, structure and composition of the population of a country. Ghana is the thirteenth most populous country in Africa with an estimated population of 26.44 million in 2014 (UN DESA, 2014). The country's population, since achieving independence in 1957 tripled from about 6 million to 18 million in 1996 due to high fertility rates. Subsequently, fertility levels remained fairly constant and have been declining over the past twenty-six years. It has declined from 6.4 children per woman in the 1988 Ghana Demographic and Health Survey (GDHS) to 4.2 children per woman in the 2014 GDHS with total fertility rate increasing marginally from 4.0 to 4.2 children per woman in the last six years (GDHS, 2014). In Ghana, population growth still remains high despite the introduction of the National Population Policy in 1969 which has since been revised in 1994 to achieve several targets. Among these targets include, the fall in Total Fertility Rate (TFR) from 5.5 to 5.0 by the year 2000 and further to 3.0 by the year 2020. The Policy also aimed at achieving a 15% Contraceptive Prevalence Rate (CPR) for modern Family Planning methods by the year 2000 and by the year 2020, it is expected to increase to 50%.

Given the continuous increase in population and its effect on the economy, strategies aimed at reducing fertility rates are necessary in addressing the issue. One of such strategies has been identified as improving reproductive health through the promotion of family planning methods such as the use of contraceptives. Avoiding unwanted pregnancies through the promotion of family planning methods has become important to achieving the health-related Millennium Development Goals on reducing child mortality and improving maternal health (Williamson et al, 2009). According to the Multiple Cluster Survey report (2011), proper family planning is

essential to the health of women and children, by way of helping to prevent early or late pregnancies, limit the number of children as well as extend the period between births.

In developing countries, the uptake of family planning is very low hence the persistent high rate of unmet needs and low rates of contraceptive use. With the continuous increase in sexual activities, unplanned and unprotected sexual intercourse places young people at risk of unwanted pregnancies, unsafe abortions, infections with Sexually Transmitted Diseases (STDs) and maternal deaths; which pose a major challenge to adolescent reproductive health (Hagan and Buxton, 2012; Eliason et al., 2014). This is however, highly inconsistent with the level of knowledge of contraceptives among adolescents in Ghana. According to the 2014 GDHS, 96.5% of female adolescents have heard of modern methods of contraceptives. Nonetheless, contraceptive use among female adolescent recorded as low as 8.7% of all women including currently married women and sexually active unmarried women (GDHS, 2014). Thus, despite the widespread knowledge, their use is still low; hence the assessment of the knowledge and use of contraceptives among female adolescents in Ghana.

Given the significance of contraceptives in promoting the health of women and children, there have been several studies that have come up with probable factors that could affect its use. Some authors have suggested that factors such as education and income may have an influence on the use of contraceptives. For example, Asiimwe et al., 2014, revealed that educational level and wealth index were significantly associated with contraceptive use. The results of the study indicated that women who have attained higher levels of education were more likely to use contraceptives, as were those who were amongst the richest households. Others have also suggested that religion may be a significant factor in driving the use of contraceptives and that it may influence the acceptance of contraceptive use in distinct ways based on the different religious backgrounds (Srikanthan and Reid, 2008).

1.2   Statement of problem

The engagement in risky sexual activities and early childbearing by young people imposes significant threat to their lives especially when they are most socially and economically vulnerable. Developing countries record higher levels of sexual activities among adolescents with 75% of young women reported to having sex by the age of 20 (Williamson et al., 2009). Regardless of the efforts of many governments to implement policies that would address specific sexual and reproductive health needs of adolescents, the persistent increase in maternal mortality rates, unwanted pregnancies, unsafe abortions and the rate of STDs indicate the need for greater improvement in adolescent reproductive health (Aninanya et al., 2015).

Experts in the field of reproductive and child health are of the view that using effective means of contraception can help to prevent the effect of early unplanned and unprotected sexual activities (Bankole et al., 2007; Opoku and Kwaununu, 2011). Consequently, this can auger well for Ghana's rapid population growth. Currently, the knowledge of contraception in Ghana is universal. Evidence from the 2014 GDHS indicates that 99.0% of all women and 99.2% of all men know of at least one method of contraceptive. It is however unfortunate that contraceptive use in Ghana has been insufficiently promoted. According to Adjei et al. 2014, there has not been a substantial and consistent increase in contraceptive use despite efforts made to promote its use for more than thirty years.

The high rate of unwanted pregnancies and high fertility rate have economic consequences both for the individual and the nation. Given that the use of contraceptives is important in controlling unwanted pregnancies and to control population growth, it is important to understand the factors that drive the use of contraceptives in Ghana. Thus, this study seeks to assess the knowledge of adolescents on contraceptive methods and to provide some answers to the factors that influence the decision to use contraceptives among adolescents in Ghana.

1.3   Objectives of the study

The main objective of the study is to assess the knowledge of contraceptive methods and identify factors affecting contraceptive use among female adolescents in Ghana.

Specifically, the study seeks to:

  i. Assess the knowledge of contraceptive methods among female adolescents in Ghana; ii. Identify the factors affecting contraceptive use among female adolescents; iii. Examine the factors that influence the type of contraceptive used among female adolescents.

In order to achieve these objectives, an attempt will be made to address the following research questions:

  i.   What is the knowledge of contraceptives methods and use among female adolescents in Ghana?

  ii.   What are the factors determining female adolescents' use of contraceptives in Ghana?

    iii.   What determines the type of contraceptives a person chooses?

1.4   Justification of the study

The consequence of teen motherhood and adolescent pregnancy has become one of the major societal problems confronting many countries. It has become the major contributor to maternal and child mortality, rapid population growth and to the cycle of ill-health and poverty (WHO, 2014). Although the problem has stimulated much analysis and policy discussions among stakeholders and experts in the field of reproductive and child health, in Ghana, statistics from the Ghana Health Service (GHS) has shown that approximately 750,000 teenagers between the ages of 15 and 19 become pregnant each year regardless of the widespread of knowledge on contraceptive use (Tetteh, 2013). With increasing evidence on the alarming rates on adolescent pregnancy and its negative social and economic effects on the girl child and the society as a

whole, contraceptive availability and use has become an important tool in health service delivery. It has also come to be a priority intervention programme within the health sector—thus, the need to assess the knowledge of contraceptive methods and identify factors affecting its use by female adolescents in Ghana.

The expected output of this research would inform policy debate and foster discussions on contraceptive use and would help the Ministry of Health (MoH) and its implementing agencies to make informed decisions regarding female adolescent reproductive health. Academically, it is to enhance and contribute to the literature and body of knowledge in the field of reproductive and child health in Ghana as well as improve research on the subject matter.

1.5   Scope of the study

The study focuses on contraceptive knowledge, use and factors affecting contraceptive use by female adolescents in Ghana who are between the ages of 15 – 19 years. The data employed in the analyses are collected from the 2014 Ghana Demographic and Health Survey (GDHS). The study only takes into account female adolescents who fall within the specified age who are married or are unmarried but sexually active.

1.6   Organisation of the study

This research paper is made up of five chapters. Chapter one consist the introduction, which covers the background of the study, statement of problem, research objectives and questions relating to the knowledge and use of contraceptives as well as the factors determining contraceptive use. It ends with the justification and scope of the study. Chapter two gives an account of both theoretical and empirical review of literature of different authors on the subject matter. Chapter three focuses on the methodology; it gives an account of how the research has been conducted and the statistical methods and processes employed in arriving at the desired results. Chapter four covers the results and discussions of the study. It tackles the findings of

each objective consecutively. Lastly, chapter five details the conclusions and recommendations from the study. The references and appendices used to support the study are also outlined at the end of this chapter.

CHAPTER TWO

LITERATURE REVIEW
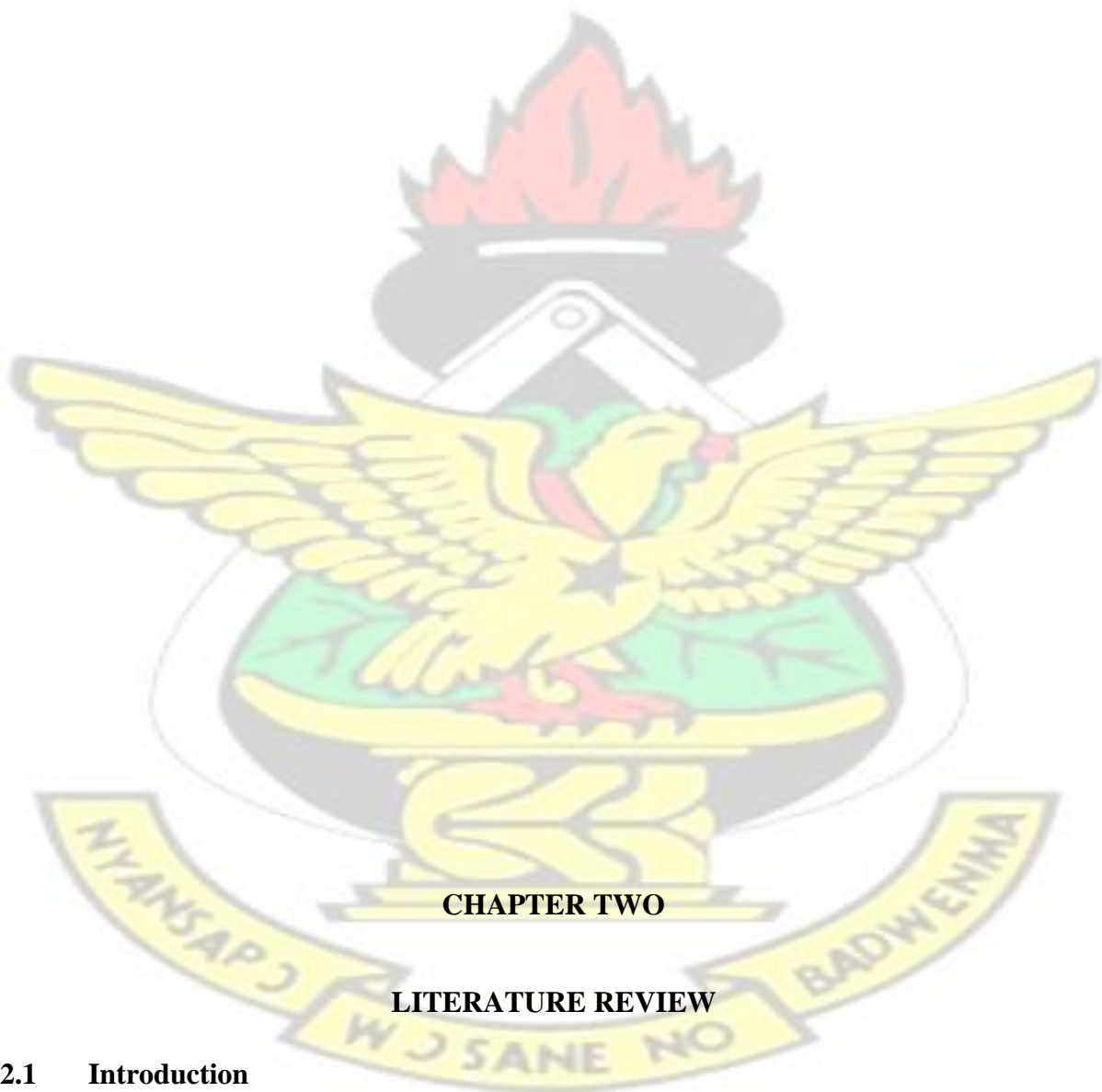
2.1   Introduction

In this section, the paper reviews mainly theory and empirical work of several authors. It focuses on some economic theories in relation to contraceptive use as well as empirical reviews regarding the knowledge and use of contraceptives. In addition, it looks at definitions for

contraceptives, explains the methods of contraception and reviews the factors influencing contraceptive use.

2.2   Theoretical literature review

Since 1972, health economists have modelled health related behaviour using Grossman's model of investment in health (Laporte, 2014). The model views health as a durable capital stock that produces output of healthy time and considers each individual as both the producer and consumer of health. It assumes that the initial stock of health inherited by individuals depreciates with age but can be increased by investment (Grossman, 2001). According to Grossman, health is demanded both as a consumption commodity which directly enters the consumer's preference function; and as an investment commodity which determines the total amount of time available for market and non-market activities. The model is based on the expected utility theory where individuals maximise an inter-temporal utility function of commodities and health (Gupta and Greve, 2009).

The theory of human capital indicates that individuals can replenish investment each period by combining health inputs that would improve the consumer's health. It posits that the ultimate goal of a consumer's health shows the amount of time and other resources invested in the stock of health capital so as to purchase inputs like contraceptives (Michuki, 2015). NketiahAmponsah, Arthur and Aaron (2012) following Grossman's theory modelled a framework for contraceptive demand. The demand for contraceptives was considered as a derived demand on the basis that it was demanded not for its own sake but to promote a healthy outcome through birth spacing, prevention of sexually transmitted diseases and the prevention of unwanted pregnancy. The model for contraceptive demand was given as follows:

$$Ci = Dc \ [Pc, \ Pz, \ Ii, \ Xi, \ Yi]$$

Where C_i is contraceptives or family planning methods for the *ith* woman; P_c and P_z are prices of contraceptives and prices of all other goods respectively; I_i is the total income; X_i is the taste of own health and Y_i, own health production. From the model developed by NketiahAmponsah et al. (2012), contraceptive demand decreases in P_c which follows the assumption under the Grossman model; that the quantity of health demanded should be negatively correlated with its shadow price (Grossman, 2001). Further, the model suggests that the effect of income could either be negative or positive depending on whether each woman prefers quantity over quality. It stipulates that the level of contraceptive failure could be high by investing in more contraceptives of low quality than fewer contraceptives with high quality.

Despite the significant contributions of the Grossman model to Economics in the study of health behaviour, there have been widespread criticisms levelled against the model. The most important being that, the current health behavior of an individual is independent on the past and that an individual can choose to live forever. The model has also been criticized for not predicting that the health of an individual is likely to fall due to lower socio-economic status. Another criticism is the fact that the Grossman model predicts a positive relationship between health investment and health status although this relationship is considered to be negative from an empirical point of view (Laporte, 2014).

Luker (1975) put forward another theory known as the Contraceptive Risk-Taking Theory. The theory suggests that a woman is likely to engage in unprotected sex if after undertaking a cost and benefit analysis, the cost of contraception outweighs the perceived risk of pregnancy. According to Luker, individuals assign values to perceived options and then attach values to these options and consequently choose one option that is preferable to the other before acting to implement that choice (Trinh, 2012). Through this decision-making process, individuals are able to weigh the costs and benefits before deciding whether or not to take a contraceptive risk. Therefore, at the end of the process, the theory asserts that a woman who considers the costs of

contraception and the benefits of pregnancy to be profound than the benefits of contraception and the cost of pregnancy would be less likely to use contraceptives (Drescher-Burke, 2013).

2.3   Empirical literature review

Most health sectors currently emphasise knowledge about reproductive health issues since the problem of increasing population growth has become a global concern (Appiah-Agyekum and Kayi, 2013). Evidence show that the growth and quality of the population depends not only on the ability to educate but also to meet the reproductive health needs of adolescents and young people (Ghana Adolescent Reproductive Health Policy, 2000). Despite the acknowledgment of the relevance of meeting the reproductive health needs of young people and the high level of awareness amongst them, the rate of contraceptive use remains utterly deficient (AwusaboAsare, Abane and Kumi-Kyereme, 2004; Yidana et al, 2015). Hence, whether or not actual contraceptive use would increase over time, depends on the knowledge people have of family planning methods and their attitudes towards its associated services (Longwe, Huisman and Smits, 2012).

Many reviews have shown that adolescents who are 15 – 19 year old and are sexually active, are unlikely to use contraceptives in spite of the risk in connection with early pregnancies (UNPF, 2001). Female adolescents who do not practice safe sex but are sexually active stand the risk of unintended pregnancies. Unplanned pregnancies tend to be associated with other health complications such as miscarriages, unsafe abortions and stillbirths which may result in infant or maternal deaths (Nyarko, 2015). According to Blanc et al (2009) as cited in Nyarko (2015), married or unmarried young women experiment with contraceptive and are inconsistent with regard to its use. They further mention factors such as fear, embarrassment, cost and lack of knowledge as barriers to the use of contraceptive methods among female adolescents.

In Africa, there have been various reports in recent past on adolescent reproductive health specifically on the issue of contraceptives. A study conducted in Kenya, on the perceptions and

barriers to contraceptive use indicated that there were high levels of contraceptive knowledge among adolescents although merely 43.0% were familiar with the use of a contraceptive method (Kinaro et al, 2015). It further showed that health service providers were bias in administering contraceptives on the basis of age and also identified knowledge of where to obtained contraceptives as the major barrier to contraceptive use among adolescents. In Tanzania, a cross sectional study carried out in girls secondary schools found that 40.0% of female adolescents in Dar es Salaam who knew at least one contraceptive method actually used any of the methods of contraception (Kagashe and Honest, 2013). It indicated that majority of the girls were aware of the problems related to unwanted pregnancies among school girls. The major source of information on contraceptives was from schools and the media. The author recommended the need for educational interventions so as to increase contraceptive use among adolescent school girls.

Tayo et al. (2011) conducted a survey in Lagos in Nigeria on contraceptive knowledge and usage amongst female secondary school students and found that 5% of the female students with contraceptive knowledge were users. It revealed that majority of them who were sexually active were non-users. Additionally, it showed that 45% of these female adolescent sourced information on contraceptives from their parents. The study therefore suggested that advocacy on adolescent reproductive health before initiation of sexual activity be intensified. It also called for the need to spread information on family planning methods among teenagers in the region.

Ngome and Odimegwu (2014) undertook a multilevel analysis on the social context of adolescent women's use of modern contraceptives in Zimbabwe. The study used data from the 2010/2011 Zimbabwe Demographic Health Survey (ZDHS) in addition to data from Measure DHS consultants to examine the influence of individual, household and community variables on contraceptive use among adolescents in Zimbabwe. It hypothesised that community

characteristics were more critical predictors of adolescent contraceptive use than other individual and household characteristics. The results of the study showed that the odds of contraceptive use for adolescent women with children were higher and that medium and high access to media also increased the odds of using contraceptives. It depicted a negative relationship between the odds of modern contraceptive use and the mean number of children ever borne per woman; as well as the mean number of school years per woman and the proportion of women with at least secondary education at the community level. Nonetheless, the odds of modern contraceptive use had a positive linear relationship with the proportion of women who were somewhat, having the problem of gaining access to health care. Contrary to the study hypothesis, the results revealed that individual characteristics explained variations in adolescent contraceptive use much better than the community level variables. It therefore concluded that both individual and community level variables be considered in determining contraceptive use among adolescent women.

Kayongo (2013) evaluated the uptake of modern contraception among youth (15 – 24) at the community level in Busia District in Uganda. Amongst the findings was that prevalence of use of modern contraceptive was 62% among sexually active youth. It established that condom was the most favoured contraceptive method with 71.7%, followed by Depo-Provera and pills with 31.8% and 9% respectively. The study used logistic regression and found that none of the variables employed in the research, that is, age, sex, marital status, schooling status, number of children, siblings and fertility desires were significantly associated with use of modern contraceptives among the study respondents. Although after adjusting for other factors, the probability of modern contraceptive use among respondents who were married increased by almost 50% as against those who were unmarried. The results further revealed that respondents who were below 20 years and without children but had the desire to have at least five children were less likely to influence modern contraceptive use.

Another study carried out in Ghana by Hagan and Buxton (2012) found that there was high level of awareness among adolescents about contraceptives and where to obtain them. The results of their study showed that 21.0% of adolescents in some selected Senior High Schools with knowledge about contraceptives were users and 82.0% of them who were sexually active were non-users. More so, it showed that 60% of respondents obtained knowledge about contraceptives from the media and 30% from their peers; although nearly 32% of them thought contraceptives were only for adults who were married. It cited condoms as the most common contraceptive used; which is also true for a study conducted in Kintampo, where 86.6% of female adolescents had knowledge of at least one method of contraceptive (Boamah et al, 2014). The findings of the study showed a significant relationship between consistent contraceptive use and discussions of contraceptive use among adolescents. It found that about 22% of adolescents consistently used contraceptives and amongst them those who discussed contraceptive use before their first sexual encounter were more likely to use contraceptives consistently compared to those who had never had any discussion. A study by Yidana et al (2015) of 400 adolescent men and women of reproductive age in Northern Ghana, showed that, most adolescent desired to use contraceptives to prevent pregnancies or to continue their education. It found that contraceptive use prevalence among teenage girls who have had their first child rose to levels comparable to that of women in their twenties. Overall, knowledge of contraceptives was significantly high in the region.

In the Greater Accra Region, there is evidence showing that women experiencing induced abortion tend not to have knowledge about contraceptive methods prior to the abortion. However, those who do, fail to use them due to factors such as rumours of side effects or personal negative experiences with modern contraceptives (Biney, 2011). Equally so, Agyei (2014) used systematic sampling of 420 women for a study on the factors influencing contraceptive uptake among women with induced abortion at the Komfo Anokye Teaching

Hospital (KATH) in Kumasi. The results of the study showed that, 21.4% out of a majority of 252 women used contraceptives after induced abortion. It indicated a high level of unmet family planning need among women since majority desired to delay child bearing for economic reasons. Further, it identified gender inequality, poor service delivery and economic and social factors as barriers to contraceptive use.

Fikree et al. (2001) adopted univariate analysis to determine what influenced contraceptive use among young women in urban squatter settlements of Karachi in Pakistan. The study assessed the influence of variables such as educational level, parity, mobility, decision-making, discussions with husband and mother-in-law about family size and exposure to and acceptance of family planning messages on couples' contraceptive use. The findings of the study indicated that women reported to have used modern contraceptive methods were significantly more likely to be literate, exposed to an urban environment and have had at least five live births. Using multivariate analysis, the results showed that women who were literate, who were of high economic status and whose mother-in-law discussed family planning with them and had received information on family planning from health care workers were 2-3 times as likely to have use contraceptives as were other women. Additionally, it showed that women who found the delivery of family planning messages through mass media were 50% more likely to use contraceptives.

Morrone et al. (2014) explored the key socio-demographic factors associated with contraceptive use amongst adolescent girls in Ghana. The study used data from the 2008 GDHS and selected socio-demographic factors to assess their interaction with contraceptive use. The results indicated that variables such as region, place of residence, educational level, ethnic group, wealth index and marital status were insignificant in determining contraceptive use. By using multivariable analysis, Age was insignificant in determining contraceptive use patterns and Region was found to be collinear with place of birth. The study identified marital status

and place of residence as independent predictors of contraceptive use among the sexually active adolescent female. Further, the results indicated that rural residences were three times less likely to use contraceptives compared to urban residence; and currently married respondents were almost four times less likely compared to their peers who were unmarried. The study recommended improvement in accessibility and promotion of reproductive/sexual health services in the rural areas among married adolescent women.

2.4   Definition of Contraceptives

The Macmillan dictionary defines contraceptive as a drug, method, or object used for preventing a woman from becoming pregnant. Contraceptives can be grouped into modern and traditional methods. The modern methods include; barrier method (female and male condoms as well as diaphragm), hormonal method (pill, injectable and implants), Intra Uterine Device (IUD), male and female sterilization (DHHS, 2011; PPFA, 2012). The traditional methods, on the other hand, include; periodic abstinence method, and (coitus interruptus) withdrawal method (Stewart, McNamee and Harvey, 2013).

2.4.1 Modern method

Barrier method

The male condom is a single-use sheath which is rolled on to an erected penis before intercourse to collect ejaculated and pre-ejaculated secretions in the space at its tip. The female condom is a loose-fitting lubricated polyurethane sheath with a flexible ring at each end. It is inserted into the vagina prior to intercourse to collect ejaculate and pre-ejaculate secretions.

The diaphragm is a silicone dome with a flexible rim that is inserted into the vagina to cover the cervix. The inserted diaphragm prevents sperm transport through the cervix hence must be kept in place for at least six hours after intercourse in order for the spermatozoa to be incapacitated in the acidic vaginal environment (Stewart et al, 2013)

Hormonal method

The hormonal method requires the use of hormones to prevent conception. The oral contraceptive or the pill is a compound of synthetic hormones that subdue ovulation by keeping the estrogen level high in a female. This prevents the pituitary gland from sending a signal to the ovaries to release an egg. The pill is taken by the woman every day at the same time to prevent pregnancy and stopped when she desires to be pregnant. The Emergency Contraceptive Pill (ECP) used to prevent pregnancy within a few days after intercourse. They are taken either as a single dose or two doses 12 hours apart. This pill is normally taken in emergency cases that is after unprotected sex. Progestin-only pills (POPs) are also used to interfere with ovulation or sperm function by thickening the cervical mucus thereby making it hard for sperms to enter the uterus or fallopian tubes. Other forms of hormonal method are the injectable birth control and implantable rods. The Injectable birth control involves injection of a progestin, Depo-Provera® (DMPA—depo medroxyprogesterone acetate), in the arm or buttocks once every 3 months (NCBI, 2010) The implantable rods are matchstick-sized, flexible, and plastic rods which are surgically inserted under the skin of the woman's upper arm to release a progestin and can remain implanted for up to 5 years (FDA, 2011).

IUD

It is a small T-shaped flexible device that is placed in the uterus to prevent pregnancy. Although it comes in several different shapes and can be made of various materials, the IUD most commonly used is a nylon plastic coil. The IUD can remain in the woman for many years can be taken out by a health care provider if the woman wants to become pregnant. A coper IUD when inserted releases a small amount of copper into the uterus, which causes an inflammatory reaction preventing sperm from reaching and fertilizing the egg. Another form of IUD is the hormonal IUD which also function by releasing progestin hormone into the uterus. This causes

cervical mucus to thicken, inhibits sperm from reaching or fertilizing the egg, thins the uterine lining, and also may prevent the ovaries from releasing eggs (FDA, 2011).

Sterilization method

Female sterilization is also known as tubal ligation and is done by occluding or disrupting fallopian tubal patency to prevent the sperm fertilizing the egg (Stewart et al., 2013). It can be done by making incision above the pubic hairline and taking hold of the fallopian tubes which are then tied off. It can also be done by making a smaller incision, and with the aid of a laparoscope the fallopian tubes are tied off. The male sterilization or vasectomy involves cutting and tying off the tubes that lead each testicle to the penis. This prevent sperms produced from leaving the testicles to the penis to fertilize an ovum during unprotected sex (Kennedy et al., 1989).

2.4.2 Traditional methods

Withdrawal (coitus interruptus), requires the male partner to have awareness and control over his ejaculation. It is not so much reliable, as failure can occur because approximately 40% of men have sperm present in the pre-ejaculate (Kilick et al., 2011)

Another traditional method also known as natural method is the lactational amenorrhoea method (LAM) which is an informed use of breastfeeding for contraception. During breastfeeding, the resumption of ovulation postpartum is delayed and this can be used to prevent conception as long as the mother fully or nearly fully breastfeeds and remains amenorrheic (Stewart et al., 2013; Kennedy, Rivera and McNeilly, 1989).

When these two conditions are fulfilled, breastfeeding provides more than 98 percent protection from pregnancy in the first six months (Kennedy et al 1989).

Another natural method of conception is the Periodic abstinence method. This requires the woman to know her fertile and infertile days so as to know when is safe to have sex (Stewart

et al.). Sperm can survive for five (5) days in the uterus, so intercourse during the safe periods can result in conception (Stewart et al., 2013).

2.5   Knowledge about family planning and contraceptive use

Interest in reproductive health of adolescents has increased over the years. This is so because of the health implications associated with teenage pregnancy such miscarriages, still births, unsafe abortions and other complications that may result in maternal or infant deaths (SolomonFears, 2015; Machel, 2001; Magadi, 2006). Pregnant adolescents tend to be school dropouts as they do not have the social and economic means to raise the children (Whitaker & Gilliam, 2008).

Even though the risks associated with early pregnancies are known, contraceptives use among sexually active 15-19 years adolescents are low (Kinaro et al., 2015). Though adolescent mothers have decline since 1990, 11% of all birth rates worldwide are from girls in the age range 15-19 years (WHO, 2014).

A report from Ghana, pregnancy rates among adolescents in this age groups are still high though there was slight decline from 14% in 2000 to 12.2% in 2007. A study in Kintampo north and south districts of Ghana revealed that pregnant adolescents and adolescent mothers were higher than the national average. The maternal mortality ratios in adolescents are usually twice as high as those of women in their twenties (WHO, 2003). In lower and middle-income countries, maternal mortality can be averted by 20 and 30 percent through the use of contraceptives, however, the access to family planning by adolescents has been bounded by socio-cultural practices (FP) (UNFPA, 2005).

Reproductive health is a common knowledge to adolescents but studies from different countries has shown that many adolescents are misinformed or lack deeper understanding of contraception and contraceptive methods (Martins et al., 2006 ; Enuameh et al., 2014) Studies

have shown several factors attribute to this. In Brazil poorly educated adolescents were found to be sexually active at a younger age with little knowledge about contraceptive methods (Martins et al., 2006).

In South Africa, a third of adolescent girls become pregnant by age 19, though contraception is free and accessible. Some of the cause is attributed to the fact that female adolescents seek advice from friends since their mothers, teachers, other relatives provide them with vague information on reproductive health. They even believe that having multiple sexual partners and alternating them could prevent conception since each partner's blood is different. Others go to traditionalist for rituals such burying their menstrual cloths and drinking concoctions prayed over by some religious leaders so not to get pregnant. The study also showed that adolescent girls use contraceptives inconsistently due to scolding and harsh treatments by nurses who unwillingly could not accept adolescent as sexually active persons when they visit the clinics (Woods and Jewkes, 2006). In the Upper East of Ghana, a study conducted among high school students indicated that the adolescent girl did not believe in themselves enough to negotiate condom use. They would rather not be stigmatized as bad girls or cheaters by their sexual partners than go get the condoms themselves (Rondini and Krugu 2009).

Awusabo-Asare et al. (2006) on adolescent sexual and reproductive health in Ghana among 12 to 19 year olds showed inadequate knowledge of reproductive health issues by adolescents. These adolescents (78.9% females and 67.0% males) knew that women have fertile days when pregnancy could occur but only 26% knew exactly when this was. 60% of females and 53% of males (15-19 years) knew a woman could conceive on her first sexual encounter. More than half of adolescents (56%) were not cognizant of the occurrence of pregnancy even after washing herself right after intercourse (Awusabo-Asare and Biddlecom, 2006).

Several researches indicate that adolescents are aware of various contraceptives methods but the method of choice is solely due to how well informed he/she is. Research on sexual activity and contraceptive use by female adolescents (14-21 year olds) in Nigeria disclosed that girls preferred coitus interruptus and rhythm method. This was attributed to possible fear of side effects of modern contraceptive methods, decreased sensitivity with the use of condoms and parents disapproval of the use of artificial contraception (Okpani and Okpani, 2000).

In Ghana, it has been shown that adolescents (12-19 years old) are aware of at least one method of contraception. About 52.7% of females whereas 52.5% of males had knowledge about the use of pills whereas IUD was known by 23% and 23.1% of females and males respectively. 56.5% of females and 55.5% of males were also familiar with the injectable however only 18.7% females and 17.6% males knew about it. The Emergency Contraceptive Pill was known to 18.4% and 20.1% for females and males respectively. The male condom had the highest score of 87.9% and 90.6% among females and males, correspondingly. The least contraceptive known among adolescents was Foam/Jelly 11.8% and 15% for females and males respectively. The study further revealed that, 60% of females and 58.5% of males have discussed contraceptives with their partners (Awusabo-Asare and Biddlecom 2006).

In another study in Brazil, adolescents (12-19 years) who attended private schools as well as public schools showed inadequate knowledge about contraceptive methods. The use of female and male condoms is the most preferred method followed by the pill. The privileged as well as underprivileged adolescents' knowledge about contraceptive methods was in the order Day after pill > Diaphragm> IUD> Injectable contraceptive > Calendar method> Spermicides > none. The adolescents from private schools knew much about IUD and calendar method than their comrades in public schools (Martins et al., 2006).

Further studies conducted in Ghana, Burkina, Malawi and Uganda among 12-19 year olds showed that 43-65% females and 50-66% males have used contraceptives before (Biddlecom, Munthali and Singh, 2007) with the male condom been the most contraceptive method used. However most female adolescents (89.2%) from Malawi, Uganda and Burkina were more likely to use traditional methods (Biddlecom et al. 2007).

2.6   Factors influencing contraceptive use

The use of traditional and modern methods of contraception have been low in Sub-Saharan Africa, although over the past decade there has been evidence of an increase. By 1999, it had increased by 0.5% each year to 8% in West Africa (Stephensen et al., 2007). Researchers in the field of reproductive health have identified multiplicity of factors that may influence the use of contraceptives. Among these include: demographic and socio-economic factors.

Okezie et al. (2010) researched into the socio-economic determinants of contraceptive use among rural women in Ikwuano Local Government Area (LGA) of Abia State in Nigeria. The Ikwuano LGA was made up four clans where 200 women were randomly selected from each clan. In the study, data was analysed using descriptive statistics and Maximum Likelihood Probit regression analysis. The results of the study showed that education was positive in explaining women's current use of contraceptives. It indicated that female education was a significant determinant of contraceptive use possibly because more educated women were more likely to appreciate the advantages of having fewer, better educated children. Their work showed that education was a strong determinant of contraceptive use since it is associated with lower fertility rate due to the fact that it delays marriage, increase the value of women's time and increase the likelihood that they engage in paid employment. Aside from education, the study also showed a significant correlation between the exposure to mass media either through information on radio or advertisement about AIDS and modern use of contraceptive. It implied

that the use of contraceptive method increased with access to mass media messages on contraceptive use.

Asiimwe et al. (2014) analysed the socio-economic and demographic factors associated with modern contraceptive use among young women (aged 15-24) and older women (aged 25-34) in Uganda. The study employed logistic regression analysis, using Age as an interaction term to model the relationship between selected independent variables and Modern Contraceptive Use (MCU) for each group of women. The results showed that proximity of health facility was significant as shorter distance to health facility was associated with increase in use of contraceptives. Geographical variability played a major part in the study since it showed a strong association with contraceptive use. It indicated that older women from eastern and northern regions had higher odds (OR = 3.46; p = 0.024) of using contraceptives compared to the young women OR = 4.71; p = 0.021). The study cited cultural beliefs like values attached to child, presence and quality of reproductive health services, physical characteristics of the area and the presence of transport routes as factors that influence geographical variations in contraceptive use.

In another study by Palamuleni (2014) on the demographic and socio-economic factors affecting contraceptive use in Malawi, data from the 2000 and 2004 Malawi DHS was used to examine correlates of contraceptive use among currently married women (15-49 years). The study employed bivariate and multivariate logistic regression analyses to establish the relationships between socioeconomic variables and current use of contraception. The results of the study showed that—age, respondents' and partners' approval of family planning, family planning discussion with partner, number of living children, work status, education and visit to a health centre were the major determinants of contraceptive use. Current use of contraceptive was positively related to respondent's age, number of living children and level of education. The use of contraceptive among women aged 15-19 years tend to be low as young women

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within the specified age were likely to be newly married and perceived marriage as an institution to produce children. However as they grew, the usage increased because of the desire to space birth but then fell when they became older due to the fact that most of them were probably sexually inactive.

In Ghana, a study conducted among married women in the Wassa Amenfi District found, as part of the result, that, current contraceptive use had a strong relationship with the discussion of family planning with husbands. The results indicated that family planning discussion with husband showed a strong effect with odds ratio of 19.788 times the odds of those who never discussed family planning with their husbands (Baidoo, 2013). Similarly, other research work undertaken in the northern region of Ghana have shown that women who discussed the number of children they desire in their reproductive lifetime with their spouses were three times more likely to use contraceptives as compared to women who did not (Kweligeya, 2005) as in Baidoo (2005).

Apanga and Adam (2015) on a cross-sectional study conducted in the Talensi district in the Upper East Region of Ghana investigated the factors that influence the uptake of family planning services among women in fertility age. The study revealed that usage of family planning services increased with parity—the higher the parity of women, the more likely they were to use the services compared to women with lower parity. The results further indicated the major reasons that influenced the decision of women to go for family planning services were to space children, 94% (47/50) and to prevent pregnancy and Sexually Transmitted Infections (STIs), 84% (42/50). It cited opposition from husbands for their wives not to access the service, 90% (207/230) as well as misconceptions about family planning methods, 83% (191/230) as reasons for the non-usage of family services.

Adjei et al. (2014) used data from the 2008 GDHS to examine the relationship between selected socio-demographic variables and the current use of contraceptives among Ghanaian women.

The findings showed that religious affiliations among other variables had a strong link with contraceptive use. The study indicated that Muslim women were less likely to use contraception because of their faith's stance on procreation compared to women with other religious connexions.

CHAPTER THREE

METHODOLOGY

3.1   Introduction

This chapter explains the models and methods used in analysing the data to address the objectives of the study. It focuses on the data source and description of the variables employed in the study as well as the software used for the data analysis. The principal methods that are used in analysing the data are descriptive analysis, binary logistic regression analysis and multinomial logistic regression analysis.

3.2   Data source

The study employed secondary data which was extracted from the 2014 Ghana Demographic and Health Survey (GDHS). The 2014 GDHS forms part of the global Demographic and Health Surveys (DHS) Program funded by the United States Agency for International Development (USAID). It is the sixth in a series of population and health surveys conducted in Ghana and provides essential information to plan, monitor and evaluate health related programmes; particularly reproductive health at both national and regional levels. It serves as a follow up to the earlier surveys carried out in 1988, 1993, 1998, 2003 and 2008. As a nationally

representative survey of 9,396 women aged 15-49 and 4,388 men aged 15-59 from 11,835 interviewed households, the survey followed a two-staged sample design—the first stage being the selection of sample points consisting of enumeration areas and the second stage, systematic sampling of households. The data collection was carried out from early September to midDecember, 2014.

3.3   Study variables

In order to fulfil the objectives of this study, the variable considered under objective one was Knowledge of Contraceptive Method. For objectives two and three, the dependent variables were Current Contraceptive Use and Current Contraceptive Use by Method Type respectively. The independent variables for both objectives two and three included; level of education, work status, wealth index, marital status, religion, ethnicity, health insurance coverage, type of place of residence and region of residence. These variables are described in the ensuing sub-section.

3.3.1 Description of variables

Knowledge of contraceptive method: This refers to whether or not the respondent has heard about the modern, traditional or any other contraceptive methods.

Current Contraceptive use: This denotes the current users of modern and traditional methods of contraceptives and non-users. It was binary in nature, that is, use or non-use.

Current contraceptive use by method type: This variable categorises the current use of contraceptive as either, modern, traditional, folkloric or no method.

Level of education: This provides the level of education of the respondent in the following categories: No education, Primary, Secondary, and Higher. The relationship between contraceptive use and level of education is expected to be positive since respondents are more likely to use contraceptives as they become more educated and tend to have a better understanding of contraceptive use and its effects on their lives.

Work status: This shows whether the respondent is currently working or not. The link between work status and contraceptive use is expected to be positive for currently working female adolescents and negative for their non-working counterparts. The reason being that, working female adolescents tend to be engulfed in their job such that having babies become a secondary matter and also because they tend to have the means to afford contraceptives as compared to non-working female adolescents.

Wealth index: The wealth index places the respondent into five wealth quintiles namely: poorest, poorer, middle, richer and richest. It helps to compare the influence of wealth on contraceptive use. Contraceptive use has been found to be more likely among richer households compared to poorer households because the rich has the ability to afford contraceptives. Therefore, the odds of using contraceptives is expected to be positive and significant amongst the rich than the poor in society.

Marital status: This refers to whether the respondent is married, divorced/separated or has never been in a union. Female adolescent who are currently married may be more likely to use contraceptives as far as being able to afford contraceptives due to the support from their partners and the need to limit or space child birth. Those who are not married are also more likely to use contraceptives because of the need to prevent unwanted pregnancies and to protect themselves against STIs. Hence the relationship between marital status and contraceptive use is likely to be positive.

Religion: This refers to whether the respondent is a Christian, Moslem, Traditionalist/Spiritualist or has other religious affiliations or has no religion. Contraceptive use is most likely to be negatively related to religion because of the message of religious teachings of abstinence and not having sex before marriage—although the odds may differ based on one's religious background.

Ethnicity: This variable describes the ethnic background of the respondent. In this study, the respondent has been categorised as either Akan, Ga/Dangme, Ewe, Mole-Dagbani or other. The association between ethnicity and contraceptive use is expected to be negative because traditionally, women are taught not to engage in non-marital or pre-marital sex.

Health insurance coverage: This indicates whether or not the respondent is covered by health insurance. Since Ghana's health insurance does not provide full coverage for family planning services including contraceptives, the relationship between contraceptive use and health insurance coverage is likely to be negative due to the problem of affordability and accessibility.

Type of place of residence: This shows whether the respondent resides in an urban or rural area. Respondents who reside in urban areas are more likely expected to use contraceptives than those in the rural areas as they tend to be more privileged in terms of education and access to quality health care services. Also, contraceptive prevalence tend to be higher among those from the urban areas than those from the rural areas.

Region: This variable is used to determine whether living in any of the ten regions in Ghana has any influence on the knowledge and use of contraceptive methods. It is categorised into Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong-Ahafo, Northern, Upper East and Upper West regions. Contraceptive use is expected to vary among the regions but the odds is expected to more likely for those closer to the south than the north due to economic reasons.

3.4   Theoretical framework

The paper follows Grossman's demand for health and health care model which considers individual health status to be governed by both consumer and investment activities. According to Grossman, health is demanded both as a consumption commodity which yields direct satisfaction; and as an investment commodity which yield satisfaction to consumers indirectly through increased productivity. The model treats health as a stock of capital and assumes that

the stock of health inherited by individuals may increase, decline or remain constant over time depending on factors such as age, illness or injury (Pruckner, 2010). Individuals can increase their health stock through health related behaviours such as practising proper family planning through contraceptive use. An indication from the Grossman model is that unhealthy behaviours such as the practice of unsafe and unprotected sex could increase the demand for health care by degrading the health stock and ultimately shortening the length of life of individuals.

3.5 Data analysis

The statistical package for data analysis was STATA 11. The data was analysed using statistical methods such as descriptive, binary and multinomial logistic regression procedures. A summarised description of the aforesaid statistical methods is given below.

3.5.1 Descriptive analysis

Descriptive analyses were performed to show the level of knowledge of contraceptive methods among female adolescents aged 15-19 by comparing data from the 1998, 2003, 2008 and 2014 GDHS. It provided the frequency distribution and the percentage of female adolescents who have heard of any method of contraception; whether modern method, or otherwise. It also described the trend over the years.

3.5.2 Model Specification and estimation

In the analysis of the data, the model was first assumed to be a multiple linear regression specifying a linear relationship between the dependent variable and the independent variables. This was given by:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_n x_n$$

Where the dependent variable, Y is the current contraceptive use and the independent variables, xs represents the level of education, work status, wealth index, marital status, religion, ethnicity, health insurance coverage, type of residence and region of residence.

However, given that current contraceptive use is a categorical variable, with two classifications: use and non-use, logistic regression models were used to analyse the possible associations with the independent variables.

3.5.2.1 *Binary logistic regression*

In order to identify the independent variables that were likely to affect contraceptive use among female adolescents, binary logistic regression was used for the analysis. The logit command in STATA was used to fit the logistic regression model of the dependent variable on the independent variables. The dependent variable, being current contraceptive use, was dichotomous, denoting whether respondents were users or non-users of any contraceptive methods. Further, the dependent variable was binary—that is, it assumed only two values which was coded as one or zero; where

$$Y_i \quad 1 \text{ if the } i\text{-th woman is using contraceptives}$$
$$0 \text{ otherwise}$$

Given that some of the independent variables were also categorical, logistic regression was used to generate the coefficients. Therefore, the logistic regression model took the form:

$$\text{logit}[\ (\ )] Y_i \quad \log[\frac{(\ )x_i}{1 \quad (\ )x_i}] \quad \quad \quad {}_{0} {}_{1\ 1}x \quad {}_{2\ 2}x \quad ... \quad {}_{n}x_n$$

Where π and 1-π represent the probability of a woman using contraceptive and the probability of a woman not using contraceptive respectively. The linear predictors of the logistic regression model is given by $\beta = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... \beta_n x_n$, where the independent variables are $X = (x_1, x_2, ... x_n)$. These include: level of education, work status, wealth index, marital status, religion, ethnicity, health insurance coverage, type of place of residence and region of residence.

3.5.2.2 *Multinomial logistic regression*

The factors that influenced the type of contraceptive used among female adolescents were determined using multinomial logistic regression analysis. Unlike binary logistic regression, multinomial logistic regression allows for more than two categories of the dependent variable. The dependent variable considered to satisfy the third objective of the study was current contraceptive use by method type. Since it had more than two categories, consisting of modern method, traditional method, folkloric method and no method, it was appropriate to use multinomial logistic regression. The estimation of the multinomial logistic regression took the following form:

$$\Pr(y = 1) = \frac{e^{X\beta_{(1)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}} + e^{X\beta_{(3)}} + e^{X\beta_{(4)}}}$$

$$\Pr(y = 2) = \frac{e^{X\beta_{(2)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}} + e^{X\beta_{(3)}} + e^{X\beta_{(4)}}}$$

$$\Pr(y = 3) = \frac{e^{X\beta_{(3)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}} + e^{X\beta_{(3)}} + e^{X\beta_{(4)}}}$$

$$ex_{} + ex_{} + ex_{} + ex_{}$$

$$\Pr(y = 4) \frac{1}{ex_{} + ex_{} + ex_{} + ex_{}} \quad {}_{(1)} \quad {}_{(2)} \quad {}_{(3)} \quad {}_{(4)}$$

Where y is the dependent variable, referring to the choice of contraceptive method, $y=1$ represents folkloric method of contraceptive; $y=2$ indicates traditional method of contraceptive; $y=3$ denotes modern method of contraceptive while $y=4$ is the base outcome which implies no method of contraceptive. The model assumes independence among the dependent variable choices. This implies that the choice of, or members in one category should not be related to the choice of, or members in another category. Just as in the case of binary logistic regression, multinomial regression uses maximum likelihood estimation to assess the probability of categorical membership except that it estimates m-1 probabilities for each member; where m is the total number of choices.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1   Introduction

This chapter presents the results for the study and discusses the analysis for achieving the primary objectives. The chapter has been categorised into two sections. Section one presents the results from the analysis as well as the interpretations and section two focuses on the discussion.

4.2   Results

The study employed descriptive analysis to define the demographic and socio-economic characteristics of the sample as well as assess the knowledge of contraceptive methods among

female adolescents, aged 15 – 19 years. It looks at the trend in the knowledge of modern contraceptive methods. Additionally, this section presents the cross-tabulation of contraceptive use by type of method, regarding whether the method is folkloric, traditional or modern. The breakdown of the current contraceptive method by the age of respondents is also presented. Included in this section as well, is the binary logistic regression results on the factors affecting contraceptive use along with the multinomial logistic regression results on the factors affecting the type of contraceptive method used by respondents.

The variables considered in this study included age, level of education, work status, wealth index, marital status, religion, ethnicity, health insurance coverage, type of residence and region. The breakdown of these variables by their sub-categories, frequency and percentage distribution have been detailed in Table 4.1 below.

Table 4.1: Demographic and socio-economic characteristics of female adolescents (N=210)

Characteristics	Frequency	Percentage distribution	Characteristics	Frequency	Percentage distribution
Age			Tradition	7	3.3
15 - 17	45	21.4	No religion	5	2.4
18 - 19	165	78.6	**Ethnicity**		
Level of education			Akan	86	41.0
Primary	80	38.1	Ga/Dangme	9	4.3
Secondary	107	51.0	Ewe	32	15.2
Higher	0	0.0	Mole-Dagbani	47	22.4
No education	23	10.9	Other ethnicity	36	17.1
Work status			**Health Insurance Coverage**		
Working	103	49.3	Yes	106	50.7
Not working	106	50.7	No	103	49.3
Wealth Index			**Type of place of residence**		

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Poorest	75	35.7	Urban	60	28.6
Poorer	71	33.8	Rural	150	71.4
Middle	40	19.0	**Region**		
Richer	16	7.6	Western	23	11.0
Richest	8	3.8	Central	19	9.0
Marital Status			Greater Accra	9	4.3
Never in a union	95	45.2	Volta	29	13.8
Married	107	51.0	Eastern	26	12.4
Divorced/ separated	8	3.8	Ashanti	19	9.0
Religion			Brong Ahafo	35	16.7
Orthodox	90	42.9	Northern	13	6.2
Pentecost/ Charismatic	80	38.1	Upper East	18	8.6
Islam	28	13.3	Upper West	19	9.0
Total	210	100.0	Total	210	100.0

Source: 2014 Ghana Demographic and Health Survey

Table 4.1 shows the demographic and socio-economic characteristics of the sample of 210 female adolescents aggregated from all ten (10) regions in Ghana. As indicated in the table, majority of the respondents were aged 18 – 19 years; representing 78.6% whereas the remaining 21.4% accounted for those aged 15 – 17 years. Out of the total number of respondents, 23 constituting 10.9% had no formal education whilst 89.1% had formal (primary and secondary) education. Most of the respondents (50.7%) were unemployed while 49.3% were reported to be currently working. 11.4% of respondents fell within the wealthiest, whilst

88.6% were either among the poorest, poor or fell within the middle class. Majority (107) (51.0%) of the girls were married and those who have never been in any union or were divorced or separated were 45.2% and 3.8% respectively. Christians who were a part of the orthodox churches (Catholics, Presbyterians, Methodists, Anglicans, and any other Christians) were the highest (42.9%) of the sampled population. This was followed by those who were affiliated with the Pentecost/Charismatic churches (38.1%) and the Islamic faith (13.3%). The minority of them were either Traditionalist (3.3%) or were not associated with any religion (2.4%).

With regard to ethnicity, 41.0% of the respondents were of the Akan tribe; Ga/Dangmes, Ewes, Mole-Dagbanis and the other ethnic groups formed 4.3%, 15.2%, 22.4% and 17.1% respectively. It is noteworthy that majority (50.7%) of the respondents were covered by health insurance. Similarly, most respondents (71.4%) resided in the rural areas of the country with the highest number (35) hailing from the Brong Ahafo region. Greater Accra region accounted for the lowest number (9) of respondents.

Table 4.2: Currently married female adolescents aged 15-19 years who have heard of at least one contraceptive method in percentages, Ghana - 2008 & 2014

Method	2008	2014	Rate of change
Any method	93.4	96.5	3.3
Any modern method	92.5	96.5	4.3

Source: 2014 Ghana Demographic and Health Survey

Table 4.2 shows the percentage of currently married female adolescents who have at least heard of one contraceptive method. It shows data from the 2008 and 2014 GDHS as well as the rate of change in the knowledge of contraceptive methods. In 2008, 93.4% of girls who were married had heard of at least a method of contraceptive; amongst which 92.5% had knowledge of modern methods of contraceptives. It is evident from the table that for the year 2014, the perception and knowledge of any method and any modern method of contraceptive was almost universal among respondents. The rate of change in the number of respondents between these two periods were 3.3% and 4.3% for any method and any modern method respectively. Figure 4.1 gives a graphical representation of the knowledge of contraceptive methods for 2008 and 2014.
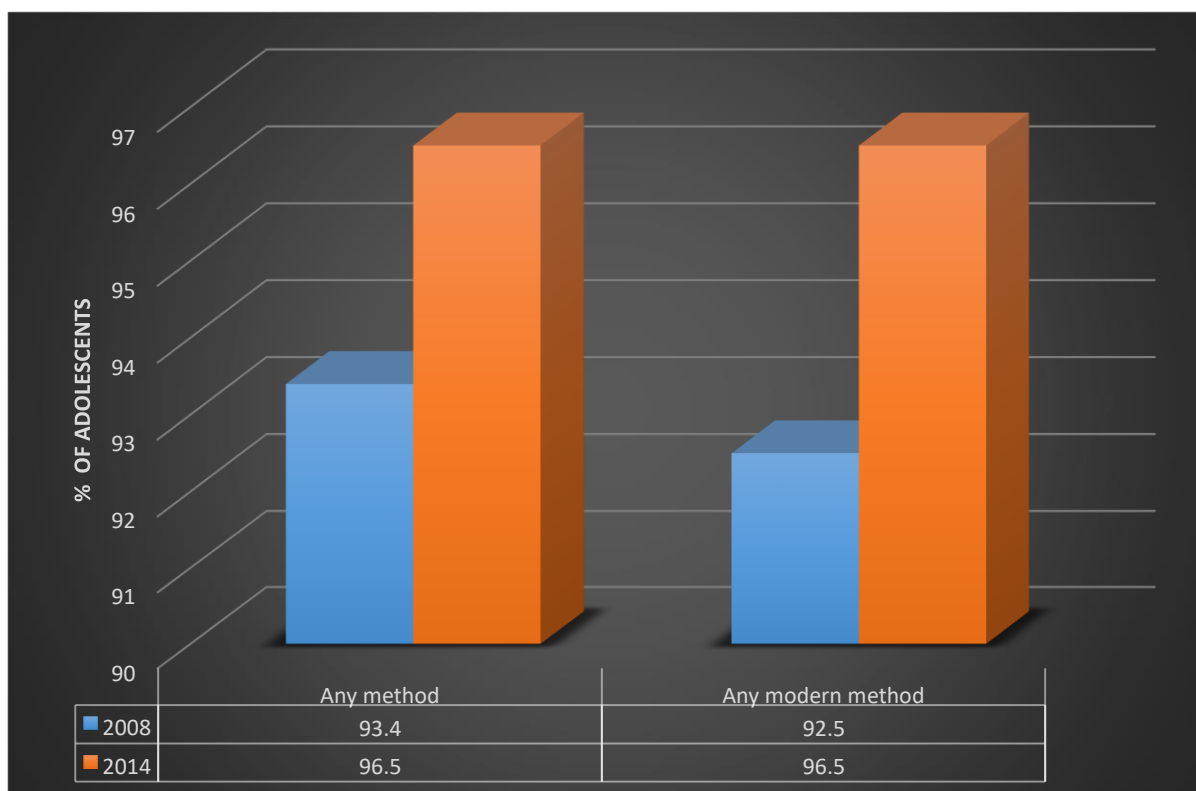
Figure 4.1: Trends in knowledge of modern contraceptive methods among female adolescents (15-19 yrs), Ghana 2008 – 2014

Table 4.3: Cross-tabulation of contraceptive use by method type and age of adolescents

Contraceptive use by method type	Age 15-17 yrs, (%)	Age 18-19 yrs, (%)	Total, (%)
No method	37 (17.6)	120 (56.4)	157 (74.8)
Folkloric method	0 (0.0)	1 (0.5)	1 (0.5)
Traditional method	0 (0.0)	4 (1.9)	4 (1.9)
Modern method	8 (3.8)	40 (19.0)	48 (22.9)
Total	**45 (21.4)**	**165 (78.6)**	**210 (100.0)**

Source: 2014 Ghana Demographic and Health Survey

Table 4.3 depicts the use of contraceptives by the type of method and age of adolescents. Here,

the study examined whether respondents used any of the types of contraceptive methods, that

is, Folkloric, Traditional or Modern. It also took into account those not using any of the

aforementioned method types; hence the category, No method. From the table, 17.6% of female

adolescents between the ages of 15 and 17 years and 56.4% of female adolescents between the

ages of 18 and 19 years were recorded as not using any of the type of contraceptive methods;

totalling 74.8% of respondents using no method of contraceptive. With regard to respondents who were using contraceptives, 19.0% of respondents who were 18 – 19 years old used modern method of contraceptives compared to 3.8% for those who were 15 – 17 years old. For folkloric and traditional methods of contraceptives, 2.4% of respondents who fell within the ages of 18 – 19 years used both methods.

Table 4.4: Cross-tabulation of current contraceptive method and age of female adolescents

Current contraceptive method	Age 15-17 yrs, (%)	Age 18-19 yrs, (%)	Total, (%)
Not using	37 (17.6)	120 (57.1)	157 (74.8)
Pill	0 (0.0)	6 (2.9)	6 (2.9)
IUD	1 (0.5)	0 (0.0)	1 (0.5)
Injections	5 (2.4)	19 (9.0)	24 (11.4)
Condoms	0 (0.0)	4 (1.9)	4 (1.9)
Periodic abstinence	0 (0.0)	1 (0.5)	1 (0.5)
Withdrawal	0 (0.0)	3 (1.4)	3 (1.4)
Other	0 (0.0)	1 (0.5)	1 (0.5)
Implants/Norplant	2 (1.0)	11 (5.2)	13 (6.2)
Total	**45 (21.4)**	**165 (78.6)**	**210 (100.0)**

Source: 2014 Ghana Demographic and Health Survey

Table 4.4 displays the current contraceptive methods by the ages of female adolescents. It shows the contraceptive methods currently been used by respondents. The majority (11.4%) of respondents who were using contraceptives used injections. Implants/Norplant followed with 6.2%. The next contraceptive methods been used by respondents were pills, condoms and withdrawal, representing 2.9%, 1.9% and 1.4% respectively. The other methods of contraceptives being IUD, periodic abstinence or other recorded 0.5% each. The highest proportion of respondents who were using at least a current contraceptive method were 18 – 19 years old. Those who were 15 – 17 years old only favoured either IUD, injections or implants/norplant.

Table 4.5: Binary logistic regression results on factors affecting contraceptive use among female adolescents

Variable	Coefficient	Odds Ratio	P-value
Level of education			
Primary	0.342	1.408	0.429
Secondary			
Higher			
No education	0.310	1.363	0.686
Work status			
Working			
Not working	-0.405	0.667	0.271
Wealth Index			
Poorest	-1.405	0.245	0.277
Poorer	-1.852	0.157	0.102
Middle	-1.099	0.333	0.320
Richer	-2.303*	0.100	0.092
Richest			
Marital Status			
Never in a union	-0.740	0.477	0.421
Married	-0.882	0.414	0.321
Divorced/separated			
Religion			
Orthodox	-0.301	0.740	0.707
Pentecost/charismatic	0.257	1.293	0.653
Islam	-1.544*	0.214	0.068
Tradition			
No religion			
Ethnicity			
Akan	-1.020	0.361	0.131
Ga/Dangme	-0.818	0.441	0.490
Ewe	-0.462	0.630	0.586
Mole-Dagbani	2.078**	0.125	0.003
Other ethnicity			
Health Insurance Coverage			
Yes			
No	0.067	1.070	0.863
Type of place of residence			
Urban	0.689	1.992	0.167
Rural			
Region			
Western	16.029**	9.15E+06	0.000
Central	16.500**	1.46E+07	0.000
Greater Accra	16.168**	1.05E+07	0.000
Volta	14.837**	2.78E+06	0.000
Eastern	15.091**	3.58E+06	0.000
Ashanti	14.823**	2.74E+06	0.000

Brong Ahafo	16.397**	1.32E+07	0.000
Northern			
Upper East	16.491**	1.45E+07	0.000
Upper West	17.822**	5.49E+07	0.000

*p-value < 0.1 and **p-value <0.05*

Prob > chi2   =   0.0000   Pseudo R2   =   0.1628   Number of obs   = 209

Wald chi2(27)   =   1259.53   Log pseudolikelihood = -99.074318

Table 4.5 indicates the binary logistic regression for factors likely to influence the use of contraceptives among female adolescents. In this analysis, the number of observations was 209. From the output, the overall model was statistically significant because the p-value was 0.0000 compared to a critical value of 0.05. Region of residence was the only variable with all its categories having a strong significant association with the current use of contraceptives. The p-value for each of the ten regions was 0.000. There was also a significant relationship between female adolescents who were Mole-Dagbanis and the current use of contraceptives, as indicated by the p-value of 0.003. The remaining variables in the model were statistically insignificant as their p-values were greater than 0.05 at a 95% confidence interval.

Table 4.6: Multinomial regression results on factors influencing the type of contraceptive used among female adolescent

Variable	Traditional Method		Modern Method	
	Coefficient	P-value	Coefficient	P-value
Level of education				
Primary	-1.141	0.404	0.325	0.427
Secondary				
Higher				
No education	31.965**	0.000	-0.202	0.791
Work status				
Working				
Not working	-30.933**	0.000	-0.174	0.642
Wealth Index				
Poorest	-95.384**	0.000	-0.782	0.523
Poorer	-137.208**	0.000	-1.372	0.210
Middle	-55.089**	0.000	-0.857	0.444
Richer	-11.963**	0.000	-3.162*	0.082
Richest				
Marital Status				
Never in a union	-19.970**	0.000	-0.402	0.656

Married	-93.483**	0.000	-0.150	0.864
Divorced/separated				
Religion				
Methodist	33.871**	0.000	-0.370	0.673
Presbyterian	13.680	0.074	0.984	0.421
Pentecost/charismatic	-41.815**	0.000	0.195	0.757
Other Christians	67.724**	0.000	0.736	0.285
Islam	87.771**	0.000	-0.396	0.567
Tradition				
No religion				
Ethnicity				
Akan	-23.456**	0.000	-0.624	0.372
Ga/Dangme	-57.908**	0.000	-0.023	0.985
Ewe	-27.010**	0.000	-0.667	0.465
Mole-Dagbani	-88.416**	0.000	-1.052*	0.096
Other ethnicity				
Health Insurance Coverage				
Yes				
No	0.557	0.696	-0.221	0.576
Type of place of residence				
Urban	-41.409**	0.000	0.466	0.361
Rural				
Region				
Western	-6.919	0.127	0.150	0.861
Central	-11.641**	0.016	1.000	0.328
Greater Accra	75.639**	0.000	0.989	0.393
Volta	28.303**	0.001	-0.527	0.620
Eastern	22.377**	0.000	-0.708	0.443
Ashanti	48.042**	0.000	-0.782	0.470
Brong Ahafo	26.278**	0.000	0.483	0.474
Northern				
Upper East	32.559**	0.000	-0.241	0.789
Upper West				

*p-value<0.1 and **p-value<0.05

Prob > chi2   =   0.0000 Pseudo R2   =   0.2709 Number of obs   =   209 Wald chi2(56)   =   5239.73 Log pseudolikelihood = -98.356812

Table 4.6 shows the results of the multinomial logistic regression on the factors influencing the

type of contraceptives used among female adolescents. In this model, almost all the variables

had strong association with using traditional method of contraceptives than they were for modern methods of contraceptives. All the variables with the exception of primary education (p-value = 0.404), Presbyterian (p-value = 0.074), no insurance coverage (p-value = 0.696) and Western (p-value = 0.127) were significantly associated with the usage of traditional methods of contraceptives. The p-values of each of these variables was 0.000. For modern methods of contraceptives, the p-values (0.082 – 0.985) of the variables indicated a statistically insignificant association at an alpha level of 0.05.

4.3   Discussion

This study assessed contraceptive knowledge, use and factors affecting contraceptive use among female adolescents who were between the ages of 15 – 19 years in Ghana. Using data from the 2014 Ghana Demographic and Health Survey, the results of the study revealed that contraceptive knowledge was almost entirely common among the sampled population. The knowledge of modern methods of contraceptives was more universal with 96.5% of respondents knowing at least a method. Further, the rate of change in the knowledge of at least a modern method of contraceptive had increased by 4.3% between 2008 and 2014. This result seem to be consistent with similar studies by Kagashe (2013) which indicated that about 97.0% of female adolescents were aware of contraceptive methods with each of them knowing at least one method of contraceptive. Eliason et al. (2014) also showed that over 90% of women of reproductive age had knowledge of at least one modern contraceptive method as did Akyeah (2007) who revealed high (91.7%) levels of contraceptive knowledge among respondents. The findings of this paper also showed that a greater percentage of respondents used modern methods of contraceptives than traditional methods. This was more predominant among sexually active unmarried female adolescents compared to those that were currently married. It was however, lowest (3.8%) among the younger age group of 15 – 17 year olds because they tend to be in the premature phases of family planning. This findings confirm the results by

Nyarko (2015), who found that contraceptive prevalence was high among female adolescents aged 18 – 19 (31.4%) than among female adolescents aged 15 – 17 (9.2%). The paper cited reasons such as maturity and enlightenment with respect to the availability of contraceptive types and the importance of contraceptive use as major contributory factors to the higher levels of contraceptive use among the older female adolescents compared to younger female adolescents. In this study, it was expected that condoms would have been the most commonly used contraceptive method due to the constant advertisements, mass media and other public education campaigns as well as its high availability/accessibility and relatively low cost. However, the study revealed that most adolescents who had ever used contraceptives used the Injectable (11.4%), followed by implant/norplant (6.2%), pills (2.9%) and then, condoms (1.9%); contradicting other findings by Somba et al. (2014) and Tayo et al. (2011) which suggested condom use as the most common contraceptive method. The other methods of contraceptives, with the exception of IUD, which made up the traditional method were barely being used as found in this study.

Overall, in term of assessing the knowledge and use of contraceptive methods among female adolescents, this study has shown that the level of contraceptive knowledge, so far, has not translated into contraceptive use. Although the knowledge of at least a contraceptive method was appreciable among respondents, only 25.2% of them used any form of contraception. This is possibly due to reason such as fear of side effects or health concerns, infrequent sex and postpartum amenorrhoea amongst others.

This paper further examined the factors that affect current contraceptive use using logistic regression model. The results obtained from the analysis revealed that region of residence was the only variable with all its categories being significantly associated with the current use of contraceptives among female adolescents between the ages of 15 – 19 years. The educational level, work status and marital status, ethnicity, health insurance coverage and the type of place

of residence did not significantly affect the current use of contraceptives. On the contrary to the findings of this study, Nyarko (2015) revealed that there was a significant relationship between female adolescent contraceptive use and the level of education, work status and marital status. In terms of region of residence, it indicated no significant association with contraceptive use unlike the findings of this paper. Similar to the study from NketiahAmponsah et al. (2012), the results showed that, female adolescents with basic or primary education were more likely to use any method of contraceptives compared to those who had no education. This may be due to the fact that educated female adolescents may tend to have considerable knowledge about contraceptives and its effect on their lives than their uneducated equals.

Further, the study found no significant association between contraceptive use and wealth. It showed that respondents who belonged to the poorest and poorer wealth quintiles were less likely to use contraceptives compared to those in the middle bracket. This corresponds to the results from a study by Stephensen et al. (2007) on assessing the contextual influences of modern contraceptive use in sub-Saharan Africa. The result indicated higher odds of contraceptive use among women in wealthier households. Asiimwe et al. (2014) also showed no significant association between contraceptive use and wealth due to the influence of the educational level of respondents, since those with less than secondary level of education were found to be amongst the poorest wealth quintile.

This study further showed that, female adolescents who were currently married were less likely to use any form of contraceptives compared to those who were unmarried. Giving credence to the importance of religion in explaining contraceptive use, the findings of this study showed no significant association between religion and contraceptive use. Adjei et al. (2014) demonstrated similar results. Marrone et al. (2014) also showed no association between religion and contraceptive use due to the decreasing role of religion in the lives of Ghanaians and the reluctant nature of very religious adolescents in initiating sex.

Regarding the type of contraceptive a person chooses, the results revealed that all the variables were strongly associated with choosing traditional method of contraceptives as compared to their effects on the use of modern methods; with the exception of female adolescents who had basic education and those who were Presbyterians and had no health insurance coverage.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1   Conclusion

Ensuring proper family planning through the promotion of family planning methods is important to improve the health and well-being of female adolescents and women in general. In essence, this could help address issues related to the sexual and reproductive health of women and children. This paper has reviewed a number of literature from different authors that

have given insight to the sexual and reproductive health of women, in particular, female adolescents. The objective of the study was primarily to assess the knowledge and use of contraceptive methods and to determine the factors that affect contraceptive use among female adolescents in Ghana.

The study employed a sample size of 210 female adolescents aged 15 – 19 years old who were married or were unmarried but sexually active. The results of the study on the knowledge of contraceptive methods and use was consistent with the findings of other studies. It showed that female adolescents had extensive knowledge on modern methods of contraceptives, even though this widespread of knowledge did not translate into its use. Contrary to other studies, the results from the logistic regression analysis on the factors that affect contraceptive use revealed that the level of education, work status, wealth index, marital status, religion, ethnicity, health insurance coverage and the type of place of residence did not significantly affect the current use of contraceptives. It indicated region of residence as the only variable with all its categories having a significant association with contraceptive use. It further revealed a significant association between ethnicity and contraceptive use, only in respect to female adolescents who were Mole-Dagbanis. It showed that female adolescents with primary education were more likely to use any method of contraceptives compared to those who had no education. Those who were unmarried but sexually active were also more likely to use contraceptives compared to their married counterparts. Similarly, female adolescents who fell within the middle wealth quintile were also more likely to use contraceptives as against those who fell within the poorest and poorer wealth quintile. Notably, on the type of contraceptives used by female adolescents—whether modern or traditional—the findings showed a strong association with choosing traditional methods of contraceptives over modern methods.

5.2   Recommendation

Given the empirical findings of this study, the following recommendations may go a long way to help in formulating policies that aim at designing programmes to promote family planning and improve the sexual and reproductive health among female adolescents in Ghana.

i.   Given that the use of contraceptives is greatly low among female adolescents due to the fear of having health complications, it is important that these adolescents be educated on the side effects of having to use any form of contraceptive method. There is also the need to increase advocacy on educating the general public on the social and economic benefits of contraceptive use among adolescents through public campaigns and mass media.

ii.   The results of the study pointed out that female adolescents who were poor and uneducated were less likely to use current contraceptive methods. Due to this, the study suggests that there should be a collaborative effort between the Ministry of Health and the Ministry of Education to strengthen campaigns on the essence of training the girlchild in order to increase the enrolment of girls in school since education improves the way of life of people. Again, it is necessary for the government, through the National Youth Employment Programme, to bring more jobs to the youth in order for them to improve their financial status.

iii. Since most uneducated girls are found in the rural areas of the country, and the study shows that the use of modern methods of contraceptives is less likely amongst them, there is the need for the Ministry of Health to train more Community Health Nurses to reach out to such areas and intensify the education on family planning and modern methods of contraceptives.

In all, these recommendations are expected to help antithesis the ever continuous trend of low rates of contraceptive use which leads to high rates of adolescent pregnancy, contraction of

sexually transmitted infections and diseases and increase in population growth. They are also to change the mind-set of people on the use of family planning and to stress the need to educate them on the benefits of using such measures.

5.3 Limitations and recommendation for further studies

The focus of this study was primarily on contraceptive knowledge and use among female adolescents without taking into consideration the contraceptive concerns of their male counterparts due to time constraints. Hence, the outcome of this study may be bias towards the reproductive health needs of women and children. It is therefore recommended that in addressing such concerns, research work in such fields consider both interests in order to tackle the issues of adolescent reproductive health holistically.

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