

**SCHOOL OF PUBLIC HEALTH  
COLLEGE OF HEALTH SCIENCES  
UNIVERSITY OF GHANA, LEGON**

**PREDICTORS OF MODERN CONTRACEPTIVE USE  
IN GHANA, 1998-2008**

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**THIS THESIS IS SUBMITTED TO THE UNIVERSITY  
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THE REQUIREMENT FOR THE AWARD OF M.PHIL  
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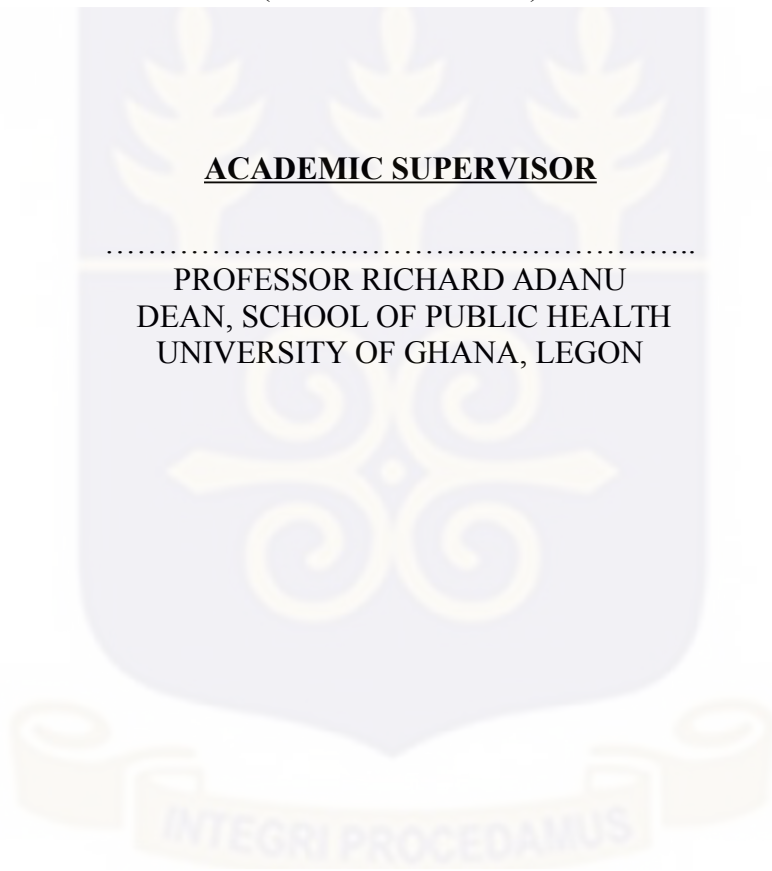
**DECLARATION**

I hereby declare that apart from references to other people's work that have been duly cited, this dissertation is the result of my own research, and that it has never been presented either in part or in whole to any institution for any academic award.

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## **DEDICATION**

I dedicate this piece of work to my daughter Michelle Maame Sika Odei for her presence in my life.

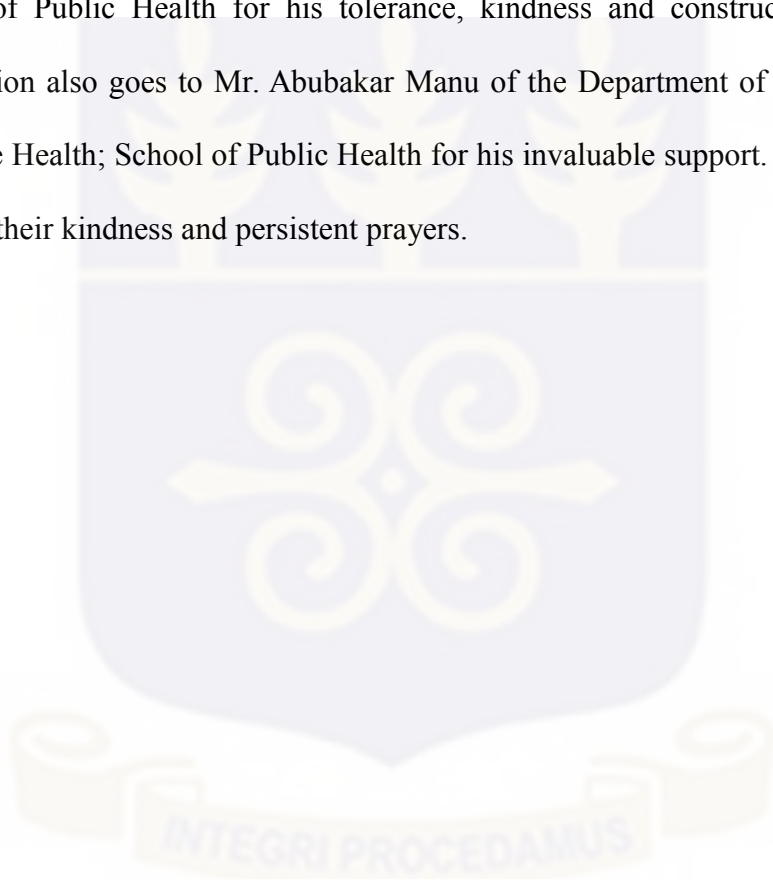


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## ABSTRACT

**Background:** Contraception is an effective means of reducing fertility and improving women's health. Family planning services became available to Ghanaians over five decades ago. One of the aims was to increase prevalence of modern contraceptive use to 28% by 2010 and to 50% by 2020 but the contraceptive prevalence has been low. Only 23% of Ghanaian women are using modern methods as at 2012 while unmet need for contraception stands at 34%.

Studies have been done to determine the predictors of modern contraceptive use in Ghana, however not much has been explored to determine the changes in the predictors over time. Knowing the predictors of modern contraceptive use, and the changes in the predictors over time will help managers of family planning programmes to appropriately focus interventions for improved outcomes and hence increase prevalence of current use.

**Objectives:** To determine the socio-demographic factors that predict modern contraceptive use and changes in the predictors between 1998 and 2008 using Ghana Demographic and Health Survey data.

**Methods:** Secondary data from the Ghana Demographic and Health and Surveys conducted in 1998, 2003 and 2008 were analyzed. Chi square test was used to determine association between demographic characteristics and current use of modern methods, while logistic regression techniques were used to determine variables that best predict contraceptive use.

**Results:** The results showed that discussion of family planning among partners, husband's approval of family planning, formal education at secondary and higher level and parity were significant predictors of Ghanaian women currently using modern contraceptives. In 1998 and 2003 women who discussed family planning with their partners frequently were more likely to use contraceptives compared with their counterparts who had never had such discussions (OR:

6.7 95% CI: 4.42 -10.22) and (OR:4.8 95% CI:3.59-6.47) respectively. Likewise, husband's approval of family planning was associated with contraceptive use in 1998 and 2003; also educational status increased the likelihood of contraceptive use from 2003 and 2008. Parity of four or more children increased the likelihood of contraceptive use in all surveys.

There were changes in the predictors of modern contraception between 1998 and 2008. Age and fertility preference which were not predictors in 1998 and 2003 predicted modern contraceptive use in 2008 except for age group 45-49 years. Place of residence and marital status which were predictors in 1998 no longer predicted modern contraceptive use in 2003 and 2008. Educational status which was not a predictor in 1998 predicted modern contraceptive use in 2003 and 2008.

The income level of Ghanaian women did not predict modern contraceptive use except in 2008 when women in the richer quintile only were more likely to use modern methods compared to their poorer and richer counterparts.

**Conclusion:** Discussion of family planning among partners, husband's approval of family planning, formal education at secondary and higher level and parity were significant predictors of modern contraceptive use in Ghana. There were changes in the predictors for the surveys as well as the relative strengths of the predictors. The Strongest predictor was discussion of family planning among partners followed by husband's approval of family planning, parity and educational status.

**Recommendation:** Family planning programmes should include education on how partners initiate and sustain discussions about modern contraceptive use. Female education at least up to high school level should be given priority by the government. Family planning programmes at all levels should involve men.

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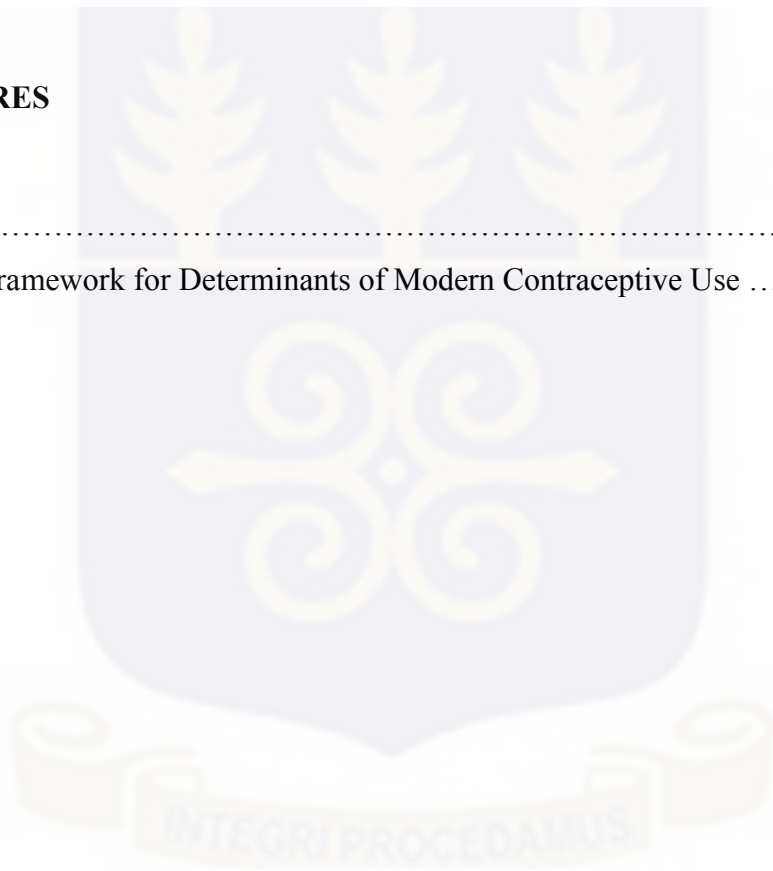
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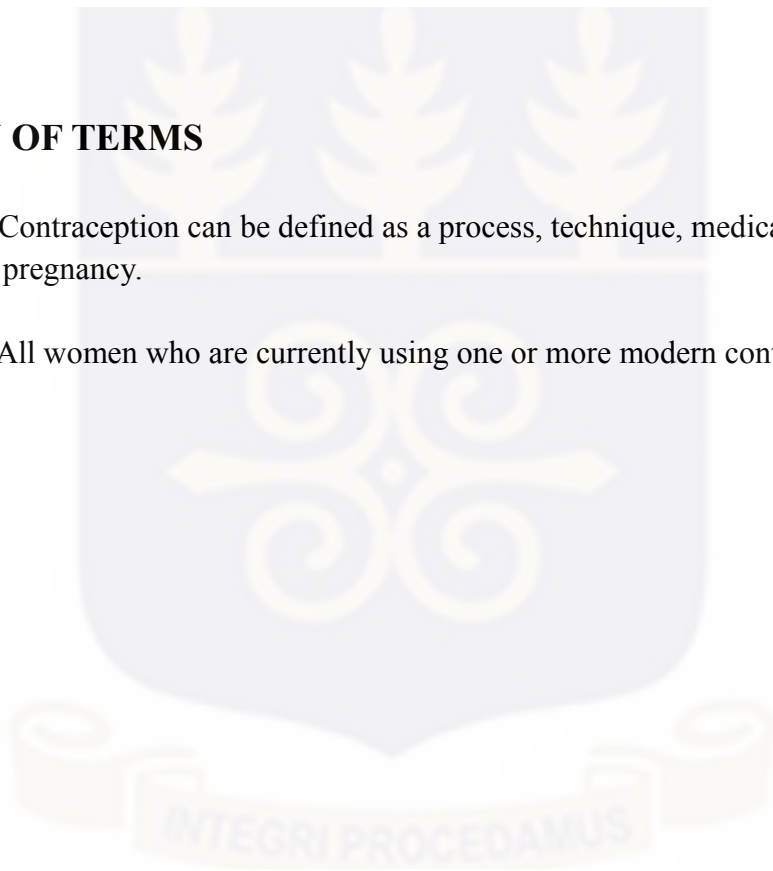
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## **DEFINITION OF TERMS**

**Contraception:** Contraception can be defined as a process, technique, medication or device, for the prevention of pregnancy.

**Current Use:** All women who are currently using one or more modern contraceptive method.



**LIST OF ABBREVIATIONS (ACRONYMS)**

CI	Confidence Interval
DHS	Demographic and Health Survey
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
HIV/AIDS	Human Immune-deficiency virus/Acquired Immune Deficiency Syndrome
IUD	Intra-Uterine (Contraceptive) Device
JNFPA	United Nations Fund for Population Activities
NACP	National AIDS Control Program
MDG	Millennium Development Goals
OR	Odds Ratio
AOR	Adjusted Odds Ratio
PHC	Population and Housing Census
STD	Sexually Transmitted Disease

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

This chapter describes contraception, prevalence of modern contraceptive use, classification of methods and predictors of modern contraceptive use. Reproductive health problems that occur due to low use of modern methods have also been discussed. The research problem and the justification of the study are also described.

#### **1.1 Background**

Contraception has been defined as a process, technique, medication or device, for the prevention of pregnancy (Booth, 2008). Contraceptives can be classified as traditional, folkloric and modern methods. Modern methods include the pill, intrauterine device, injections, diaphragm, male/female condom, male/female sterilization, implants, foam/jelly and lactational amenorrhea. The traditional methods are rhythm, withdrawal and folkloric methods. The modern methods can further be classified as either short term or long term methods (GSS et al., 2009). The short term methods are Male condom, Female condom, Diaphragm, Foam/jelly, Lactational Amenorrhea (LAM), Emergency contraceptives, Pills, Injectables (monthly and three months). The long term methods are Female sterilization, Male sterilization, Implants and vasectomy (GSS et la., 2009). All these methods are currently available in Ghana (GHS report, 2013).

The type of contraceptive method that an individual or a couple chooses depends on their knowledge of the method, their satisfaction with the method, availability, side effects, and experiences with the method (Magadi and Curtis,2003; Frost and Darroch 2008).

The only modern family planning methods available for men to choose from across the globe are vasectomy and condoms. Vasectomy is the least, less than (0.05%) accepted method among Ghanaian men (Owusu- Asubonteng et al., 2012).

According to Planned Parenthood Association, men have three more options to add to vasectomy and condoms. These are abstinence, outer course and withdrawal. However, these three options are not considered as modern contraceptives and studies have proved that they are not very effective (Booth, 2008). Moreover some men have also complained that condom use, abstinence, outer course and withdrawal prevent them from fully enjoying sex. When variety of methods are made available for men to choose from;

1. They will take more active role in family planning and they will not see it as only a woman's business.
2. Both men and women will take up responsibilities with regards to partners' approval of family planning which is usually difficult for women to convince their husbands to do especially in Sub -Saharan-Africa and among poor and marginalized women.
3. Fear of side effects and other health concerns will be appreciated and managed by both men and women. Management of side effects will also be a collective effort.

Technological efforts have been made to produce variety of contraceptives in addition to vasectomy and male condoms for men. This will ensure that all the above mentioned advantages experienced from variety of effective methods available for men to be fully realized (Watson and

Conger, 2014). Technological efforts have been made to produce oral contraceptive pills for men but these have not been successful yet. Some of the challenges have been how to come out with a medication that can stop about 150 million sperms all of which have the potential of fertilizing an egg to do so.

## **1.2 Efforts to increase Modern Contraceptive Use**

In Ghana, family planning has been in existence for over 50 years. Ghana adopted her population policy in 1969. The target was to increase modern contraceptive prevalence rate to 28 percent by 2010 and to 50 percent by 2020 (NPC, 1994).

The goal of Ghana's Family Planning programme has been to assist couples and individual of all ages to achieve their reproductive goals and improve their general reproductive health.

Consequently, interventions have been put in place to improve family planning services to promote modern contraceptive use (NPC, 1994 and Hong et al., 2005). These interventions include provision of infrastructure and essential technologies and commodities for family planning services, training of service providers to offer specialized services like bilateral tubal ligation and insertion of Jadelle and Intra Uterine Device and adherence to standards in practice (ICF Macro, 2010 and GSS et al., 2009).

Access to family planning services to all communities in Ghana has been improved by organizing outreach programmes to hard-to-reach communities while satellite clinics were increased and home visits were intensified (ICF Macro, 2010 and GSS et al., 2009). More private rooms for client examinations were created in already existing health facilities. Family planning service providers were trained to offer other services like management of sexually transmitted infection and education of clients on HIV/AIDS (ICF Macro, 2010 and GSS et al., 2009).

Health education programmes were strengthened by using the mass media, churches, schools, mosques and other available source of information dissemination to provide education on knowledge and use of modern of family planning methods. Management of side effects, involvement of males and access to information on where contraceptive methods can be obtained has been expanded (ICF Macro, 2010 and GSS et al., 2009).

Easy access to modern contraceptive use has been a challenge partly due to poor road and telecommunication network, cultural barriers, financial constraints on the part of the Government and socio-cultural factors that impede access to key populations such as commercial sex workers, and intravenous drug users. People living with HIV/AIDS, internally displaced persons, those living in urban slum, people with little or no education and some indigenous people also are difficult to reach.

Easy access to modern contraceptives is very important for women to enjoy the benefits of child limiting and spacing. When women in both rural and urban settings are offered high level counseling and a wide range of family planning methods to choose from, contraceptive use can be increased from 5% to about 45% (Elkan et al., 2008). When this increase in contraceptive prevalence rate is realized, birth rates could drastically be reduced thereby reducing maternal and infant deaths (Elkan et al., 2008).

Some of the strategies that have been adopted in Pakistan and India to improve access to contraceptives are community-based distribution of contraceptives and home delivery of contraceptives. Community-based distribution of contraceptives adopts the strategy where family planning commodities are made available to hard-to-reach communities' such as remote areas, river banks, islands and those living on water. In this regard, health workers and community volunteers are trained to supply contraceptives in these hard-to-reach areas on specific days to

the couple or women after counseling. Sometimes, the contraceptive supply is integrated in child welfare clinics where women who visit satellite clinics for growth monitoring of their children are counseled and supplied with family planning methods. These strategies help to reduce the stigma attached to family planning use in some communities and also shield these women and some couples from public scrutiny.

Home delivery of family planning methods has been used in Pakistan and other places to ensure that women and couples are provided with contraceptives after counseling. Those who need permanent methods are referred to health facilities that provide those services. Sometimes, in order to ensure that the woman or a couple who are referred are provided with the best of service, the same nurse or trained health personnel who visited the woman or couple in their home provides the service in the health facility. This strategy was found to contribute to about hundred percent increases in modern contraceptive use from 1993 to 2006 (Singh and Darroch).

This improves confidentiality and encourages the client to speak freely about issues regarding side effects and other health concerns which strongly discourage women from using family planning methods. Studies have shown that female health workers are able to reach clients and provide more satisfactory service.

Mobile clinics and family planning on wheels is another plan used to reach women and couples who need family planning services but cannot easily access these services. These mobile clinicians move from community to community with a vehicle to reach women in the market places; those selling in their shops and even those selling on the street. This plan was tried in Bolivia and it yielded tremendous results (Barroso, 2010).

In-service training of health personnel periodically has also been proved to improve access. These trainings are usually organized when new methods are made available on the market.

Training of these health workers to improve customer care as well as specialize skills are important to improve confidentiality and client satisfaction. Some of the areas where staffs have been trained to provide specialized skills are, condom use, insertion of jadelle, giving injections, vasectomy, bilateral tubal ligation and insertion of intra-uterine device. This will improve the availability of jadelle and injections which is highly acceptable.

Use of mass media especially radio to educate people about family planning, types of contraceptive methods available on the market and where to access these products also greatly improve access. Mass media has been used to provide the public thorough education on the side effects and other health concerns regarding contraceptive use. Research evidence shows that in Papua New Guinea, women took the lead in talking about sexual and reproductive health which hitherto was a taboo. They discussed contraceptives use, the types of contraceptives available on the market and effective management of side effects. This programme was initiated by Young Women's Christian Association. This yielded tremendous results such that cultural barriers regarding reproductive health issues were broken. Men were calling in on behalf of their wives to seek advice about contraceptive use.

Improving access to family planning methods for the youth has to be strategic in order to address their special needs. The prevalence of modern contraceptive use among the youth is usually low. Some of the efforts that have been made to improve contraceptive use for the youth are to involve them in planning family planning programs and distribution of contraceptives. Peer educators have also been used to educate their own colleagues on sex education and other reproductive health issues.

In Ghana, Efforts are still ongoing to improve access to modern family planning methods especially in hard to reach communities. For instance, Health Keepers Network, a Non-

Governmental Organization is currently working in had to reach communities to ensure that short term family planning methods are made available to young people of reproductive age Some of the strategies they are using are;

1. Train peers to distribute contraceptives through a financially self-sustaining programme.
2. Increase the number of young people who are using short term contraceptives like the condoms and oral contraceptive pills.
3. Increase the number of people who will accept family planning methods.
4. Increase the number of people who will use condoms correctly and consistently.
5. Correct myths and misconceptions about side effects and other health concerns.
6. Provide information on where to find contraceptives.

All these efforts to reduce lack of access to modern contraceptive methods has become less in Ghana, however studies have shown that side effects is the greatest reason for non-use (Hindin et al., 2014). Additionally, report from a study by London School of Hygiene and Tropical Medicine in 2014, has shown that in Ghana, distrust in any family planning method as a result of side effects and other health concern by women is now the strongest reason for non- use of family planning methods and not access.

Research shows that in spite of all these interventions modern contraceptive use is low in Ghana at a value of 23% (GSS et al., 2012). Globally, contraceptive prevalence rate is 61%; in the most developed regions the prevalence is 69% while in the less developed regions it is estimated at 59%. Africa has the lowest rate of 27% (WHO Report, 2011). The number of all Ghanaian women in their reproductive age who are sexually active, who do not want to get pregnant in the next two or three years (spacing) or who do not want to have any more children (limiting) and are not using any modern contraceptive method are many. The prevalence of unmet need for

contraceptive use in Ghana, for the youngest women aged 15-19 years increased from 57% in 1993 to 63% in 2003. For all other age groups it was 43% in 2003 (UNFPA and MDG, 2012).

The unmet need for contraceptive use in Ghana from 1993-2008 for all age groups reduced from 38.6% to 34 % but is 10% higher in rural areas (GSS and MI, 1999; GSS et al. 2004 and 2009).

Low prevalence of modern contraceptive use in Ghana, coupled with high levels of unmet need has led to increased exposure to sexual and reproductive health risks including danger of exposure

to HIV and other sexually transmitted infections (NACP, 2011). Some of these risks have resulted in unintended pregnancies, unsafe abortions, high maternal mortality and sexually transmitted infections including HIV/AIDS (NACP, 2011 and Ghana Maternal Health Survey, 2009).

For instance, 37% of all pregnancies in Ghana in 2011 were unintended, while unsafe abortions rate was about 28 per 1000 women (Ghana Maternal Health Survey, 2009 and Asamoah, 2011).

Similarly, a survey conducted in Southern Ghana reported that thirty-one percent of women who sought health care at the Korle-bu Teaching Hospital, Gynecology Unit did so with abortion complication (Adanu et al., 2005). Maternal mortality rate in Ghana which is estimated to be 310 per 100,000 live births is unacceptably high (UNFPA, World Bank Report, 2013).

The prevalence rate of HIV/AIDS in Ghana reduced from 3.6% from 2003 to 1.9 % in 2009 but the prevalence rate was still high (i.e. 5.8%) in places like Agormanya and Koforidua and some parts of central region. According to (NACP, 2011), prevalence of Syphilis is 3.7% in part of Central Region. The prevalence rate of HIV reduced from 1.9% in 2011 to 1.3% in 2013 (NACP Sentinel Survey Report, 2013). The Eastern Region still had the highest prevalence of 3.7 with Agormayna still being one of the sites that have been seeing an increase in prevalence. The

prevalence in Agormanya is 11.6%. Though the prevalence of HIV has drastically reduced the target of 0% new infections especially among newly born babies and adults has not been reached. This can be partly attributed to lack of behavior change and inconsistent condom use (NACP, 2013). An increase in the prevalence of modern contraceptive use (condom use) could avert some of these adverse consequences of unprotected sex to a large extent.

### **1.3 Predictors of Modern Contraceptive Use**

Some factors have been identified to predict modern contraceptive use. These factors can be categorized as behavior-related, service related, socio-economic and demographic factors (Stephensons et al., 2007). Some of the behavior-related factors are sexual behaviors such as number of sexual partners, frequency of sexual activities, age at first sex and planning of sexual Intercourse (Godswill, 2012). These factors interact collectively to determine the prevalence of modern contraceptive use (Tawiah, 1997).

Adanu et al., (2009) and Bawa et al., (2002) reported that there was significant association between some socio-demographic factors and modern contraceptive use and that some of these socio-demographic factors predicted contraceptive use in Ghana. The Ghana Maternal Health Survey (2009) also showed that female education, household wealth, parity and fertility preferences strongly influenced use of family planning methods. This makes it necessary to study these predictors.

These factors that predict modern contraceptive use have been grouped into three sets namely demographic, socio-economic and socio-cultural factors. The demographic factors are age of respondent, marital status, fertility preference and number of children ever had. The Socio-

Cultural factors are communication among partners and husband's approval of family planning and the socio-economic factors are educational level and wealth index. These sets of factors have been further categorized under direct and indirect determinants of modern contraceptive use. The demographic factors are indirect determinants of current contraceptive use while the socio-cultural and socio-economic factors are direct determinants of current contraceptive use. The relationship between these sets of independent variables and the dependent variable (current contraceptive use) has been explained using a conceptual framework in chapter three

#### **1.4 Changes in Predictors Over Time**

Some predictors of modern contraceptive use change over time while others may remain the same depending on how contraceptive use programmes coupled with background/demographic characteristics has influenced the strength of these predictors. In sub-Saharan Africa, large family size is usually desired by couples (Cleland et al., 2009). This preference for large family size did not change from 1990-1996 (Bankole and Singh, 1998). Recent report from analysis of data from 9 countries in Sub-Saharan Africa including Ghana by Cleland and Shah, (2014) showed that the fertility preferences of both men and women in these countries was consistently high.

#### **1.5 Problem Statement.**

Low prevalence of modern contraceptive use in Ghana coupled with high levels of unmet needs has led to some sexual and reproductive health problems. Some of these sexual and reproductive health problems reported in Ghana are; unintended pregnancies (37%), unsafe abortions (28 per 1000 women), maternal morbidity and mortality (310 maternal deaths per 100, 1000 live births)

and sexually transmitted infections including HIV/AIDS. Reports by (GAC Sentinel Survey 2013; NPC 2011 and UNFPA World Bank Report, 2012) showed that prevalence of Syphilis was 3.7% and twenty six thousand (260,000) people were people living with HIV/AIDS.

Compared to developed countries like Sweden (87%), United Kingdom (84%), America (56%) and some African countries like Tunisia (62%) contraceptive use in Ghana is still low. Rate of use of modern contraceptives in Ghana has been slow, increasing marginally from 13% in 1999 to 17% in 2009 (GSS et al, 1999-2009). From the results of the Multiple Indicator Cluster Survey in the year 2012, the Ghana Statistical Service reported an increase (23%) in modern contraceptive use. However this is still not encouraging considering the set target of 50% prevalence by the 2020.

Some of the factors that have been found to be responsible for low contraceptive use in Ghana are side effects of contraceptive use experienced by women and other health concerns. Other factors are no or low level of female education, husbands' disapproval of contraceptives use and difficulty in accessing family planning methods (Cleland et al., 2014; Eliason et al., 2014 and Hindin et al., 2014).

Studies have been done to determine the socio-demographic factors that predict modern contraceptive use in Ghana (Bawa et al., 2002 and Adanu et al., 2009). However the extent to which these predictors change over time is not known. When family planning programmes are implemented without considering the changes in predictors. Unrecognized changes in the predictors will adversely affect intervention of family planning programmes aimed at increasing modern contraceptive use. Efforts may be wasted to increase contraceptive use using particular predictors which may not be strong at a particular time while those that are strong may be neglected.

## **1.6 Objectives of the Study**

### **1.6.1 General Objective**

To determine the socio- demographic predictors of modern contraceptive use in Ghana, from 1998-2008.

### **1.6.2 Specific Objectives**

1. To determine changes in the predictors of modern contraceptive use for the period under study.
2. To determine the relative strength of the predictors of modern contraceptive use for the period under study.

## **1.7 Justification of the Study**

The survey was conducted to determine predictors of modern contraceptive use in Ghana and how these predictors have changed over time. Unrecognized changes in predictors of modern contraceptive use adversely affects interventions aimed at increasing contraceptive use in Ghana. Efforts made to ensure improvements in particular predictors are sometimes wasted in terms of human and material resources when these predictors are no longer strong. Other areas that may need more intensive inputs with regards to interventions may be neglected.

Knowledge gained about the changes in the predictors and their relative strengths will help in formulating reproductive health policy planning and programmes. More effective family planning programmes that are also well focused will be designed for improved outcomes such as; reduction in fertility levels and sexually transmitted infections including HIV/AIDS as well as improvements in maternal health.

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

This chapter discusses the factors that affect current use of modern contraceptives. These factors have been categorized into socio-demographic, socio-economic and socio-cultural factors which determine current contraceptive use. The demographic factors have further been classified under indirect determinants of contraceptive use and the socio-cultural and socio-economic factors have been classified under direct determinants. This is further explained in the conceptual framework in this chapter.

### **2.1 Family Planning**

Family planning is a way of living that is adopted voluntarily on the basis of knowledge, attitude and responsible decision making by individuals or couples in order to regulate the number, timing and spacing of the children they want to have, so as to promote the health and welfare of the family and contribute to the advancement of society (Delano, 1990).

There are policies on family planning concerning adults, adolescents, couples and males. Initially in Ghana, spousal consent especially from husbands was compulsory before a woman can benefit

from family planning services (GPC, 2013). Today women and adolescents do not need either spousal or parental consent in order to access family planning services. All individuals, adolescents and couples are eligible. For clients who are mentally deranged significant others usually consent to these services (WHO, 2013). Although there are policies cultural norms sometimes make it difficult for some people to access family planning methods.

Family planning is also a major component of Reproductive Health and cuts across all of the following aspects of reproductive health. Comprehensive Abortion Care, Prevention and Management of Sexually Transmitted Infections including HIV/AIDS, Prevention and Management of Infertility and Gender-based Violence (UNFPA, 2013). The goal of family planning is to assist couples and individuals of all ages to achieve their reproductive goals and improve their general reproductive health. The specific objectives of family planning are;

- a. to provide information, education and counselling to individuals and couples to enable them decide freely and responsibly the number of children they want to have and how they intend to space their children.
- b. to provide affordable contraceptive services and make available a full range of safe and effective modern methods.
- c. to provide information on child bearing
- d. to assist couples to achieve pregnancy and have babies
- e. to prevent and manage Reproductive Tract Infections including STI/HIV/AIDS
- f. to promote Dual protection

The goal of family planning to promote dual protection was added when it became necessary to reposition family planning by integrating family planning in other programmes such as the

prevention of HIV and other sexually transmitted infections by the world health organization (WHO, 2010).

These specific objectives are achieved through the use of modern contraceptives and the treatment of involuntary infertility (WHO, 2011). Family planning services include methods and practices to space births, limit family size and prevent unwanted pregnancies (Dalton et al., 2013). Fertility regulation is a major component of safe motherhood because it reduces the risk of exposure to unintended pregnancies. It also includes family-planning counseling, information, education, communication and services; education and services for prenatal care, safe delivery, and post-natal care, especially breast-feeding, infant and women's health. A woman's ability to space and limit her pregnancies has a direct impact on her health and well-being as well as on the outcome of each pregnancy (Welaga et al, 2008; WHO 2011 and Norton, 2005).

According to the World Bank and World Health Organization, one-third of the illnesses among women ages 15-44 in developing countries are related to pregnancy, childbirth, abortion, reproductive tract infections, and Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (WHO, 2011). An estimated 1,600 women die every day from complications caused by pregnancy and child birth, 99% in developing countries alone (WHO, 2011).

Research has generally found that short inter birth intervals i.e. less than two years intervals are associated with higher rates of infant and child mortalities, maternal death, third-trimester bleeding, premature rupture of membranes, puerperal endometritis, and anemia (Davanzo et al., 2007). When the spacing between two children by a woman is short i.e. less than two years, the woman does not fully recuperate from one pregnancy before supporting the next one. This can lead to "maternal depletion syndrome". Maternal depletion syndrome is a condition which

occurs when a woman has too closely spaced children (less than two years) leading to loss of nutrients such as folate and iron (Winkvisk et al., 1992). It can lead to complications like severe anemia and premature rupture of membranes. Women who have more than four children (less than two years) who are too closely spaced are also at increased risk of maternal morbidity and mortality (WHO, 2012). In Ghana it has been established that apart from staying healthy when women limit the number of children they have through the use of modern contraception, women are also able to engage in income generating activities thereby creating wealth to support themselves and their families (Karra and Lee, 2012).

Short preceding birth intervals with high parities have been reported to have adverse effect on infant and early childhood (Pence et al., 2007; Benefo and Pillai, 2003). The reason is that the mother might not have fully recuperated from one pregnancy before carrying another so she may not be strong enough to carry the pregnancy to term or may have a full term baby who is not healthy (Dibaba, 2010). Sibling competition may also set in when these closely spaced children compete for the attention of the mother and limited resources including nutrition and medical care (Davanzo et al., 2007). The preceding child may not benefit from adequate nutrition including breastfeeding, care from the mother and medical care since all attention may be given to the newly born child. All these factors can contribute to infant and child morbidity especially of the previous child (Welaga, 2008).

Family planning services needed to promote the health and wellbeing of both mother and child has been approved in Ghana since six decades ago. Some of the approved family planning service providers available in Ghana are; The Ghana Health Service Intuitions, Private Clinics, Quasi Government Hospitals and the Teaching Hospitals. There are Non- Governmental Organizations that support family planning and other reproductive health services in Ghana.

Some of them are Planned Parenthood Association of Ghana (PPAG), Quality Health Partners (QHP) Engender Health (EG), Family Health International (FHI), Marie Stopes International (MSI) and Community Based Youth Behavioral Change Communication (CEDEC). These Organizations Support family planning and other reproductive health services (Gyima, 2011). Health facilities that provide family planning services are usually assessed based on certain indicators (Hess 2007). Some of these indicators are:

1. Physical Structures (Buildings)
2. Well trained Staff (Nurses, Doctors, Midwives)
3. Equipment (spotlights, examination tables, sterile area and equipment for mini laparotomy) for both short term and long term family planning procedures
4. A variety of modern family planning methods adequate for supply
5. Water and electricity
6. Currently upgraded protocols.

## **2.2 Contraception**

Contraception can be defined as a process, technique, medication or device, for the prevention of pregnancy (Booth, 2008). Contraceptive services are offered to prevent unwanted pregnancies, delay child-bearing, space births, end child bearing where desirable (i.e. limit births) and to prevent reproductive tract infections including STDs and HIV/AIDS.

Contraceptives are usually classified under traditional, folkloric and modern methods. Modern contraceptives can further be classified as Short Term, Long Term Reversible and Long Term Irreversible (Permanent) methods. The short term methods are Condoms (male and female), Oral Contraceptive pills (Combined & Mini-pill), Injectables (Monthly and every 3 months),

Lactational Amenorrhoea Method (LAM) and Emergency Contraceptives. The long term reversible methods are Intra Uterine Device and Implants. The long term Irreversible methods are Tubal Ligation and Vasectomy (Hather et al., 2008).

In Ghana a study conducted in the Tamale Metropolis of the Northern Region (Kolbila, 2008 and Imbuki et al., 2010) showed that choice of family planning method depends on the social network, religion, educational background of the individual or couple perceptions about safety, effectiveness and low side effects. Studies have also shown that the choice of contraceptive method also depends on the client's general health, lifestyle and relationships, the perceived risk of contracting sexually transmitted infections (STI) and how important it is for the individual not become pregnant, age and experiences with the method (Do and Kurimoto, 2012).

The HIV status of some women dictates their choice of family planning method. Women who are HIV positive think that re-infection is very important when considering the choice of method. Prevention of re-infection is their priority over limiting and spacing children (Imbuki et al., 2010).

Choice of method is also strongly influenced by parity. For instance nulliparous unmarried women in their reproductive age are advised against the use of permanent methods like bilateral tubal ligation. Such women are encouraged to use effective methods like Jadelle, injections, the pill and condoms as backups and also for the prevention of sexually transmitted infections especially in cases where the woman or her partner has multiple sexual partners. This is because most women in their reproductive age without children will like to have one later (Testa, 2012).

Different methods bring different level of satisfaction to both men and women. For instance the most widely used method among married women in Ghana is the injection whiles the most widely use method among men is the condom (GSS et al., 2009). The least widely used method

by Ghanaian men is the vasectomy with a prevalence of less than 0.05%. This is so because of the myths and misconceptions about vasectomy (Adongo et al., 2014). In Nigeria, male and female doctors were counseled for permanent family planning methods. While 84.5% of female doctors accepted bilateral tubal ligation, only 5.4% accepted vasectomy. Pregnancy and its complications that lead to maternal morbidity and mortality do not affect the health of men directly (Ebeigbe and Eigbefoh 2011). This also could be part of the reasons why men do not really bother opting for vasectomy.

Certain reasons have been outlined to explain the low use of vasectomy among men in Ghana and other African countries in general. Owusu- Asubonteng (et al., 2012) observed that the facilities available for vasectomy procedure to be performed are not enough in the country. More so, the service providers i.e. urologist and obstetricians are not many especially at the district and sub district level where their services are most needed. This will hinder more vasectomy procedures from being done even if men who receive education are convinced to go for the procedure to be done for them. In Nigeria Ebeigbe and Eigbefoh (2011) showed that the level of knowledge doctors had on vasectomy was very high (more than 90%). The socio-cultural factors which were identified to be barriers to acceptance and use of vasectomy are; religious (21. %) and perception about side effects of vasectomy is 13.1% (Adongo et al., 2014).

Many factors have been mentioned to influence the type of family planning method an individual chooses, however research has shown that side effects greatly influence the type of family planning method an individual chooses Ghana (Hindin et al., 2014). Some clients experience side effects of these methods whereas others do not (Bailey, 2014). A survey in Southern Ghana by (Bailey, 2014) showed that women experienced different levels of side effects with different methods. Women who experienced side effects with the pills were (38.8%). Those who had side

effects using injections were (28.3%) and for diaphragm/foam/jelly a fewer percentage (7.3%) had side effects. Women who complained that they experienced side effects after using condoms were 10.5%. For Intra-Uterine Device, nor plants and traditional methods the number of women who complained about having side effects were 14.3%, 28.6% and 2.9% respectively.

Some of the side effects experienced were nausea, vomiting, spotting, weight gain, heavy bleeding during menstrual periods and abdominal cramps (Truss et al., 2014 and Chandra-Mouli, et al., 2014). Although these side effects do not cause serious health problems or death it has been observed that side effects has been one of the leading causes for low prevalence of modern contraceptive use among Ghanaian women (Cleland et al., 2011). Recently, Hindin et al., (2014), found that in Ghana fear of side effects of modern contraceptive methods particular irregular menstruation was perceived by women to impair fertility. This deterred them from using modern family planning methods. These side effects have been found to decreases with age. These side effects have also been found to be more common with the injections compared to the Intrauterine devices, implants and the pill (Yeboah et al., 2013).

Service providers usually counsel the user in order to ensure that he or she is eligible for a particular method and also to allay her anxiety about side effects (Teye, 2013). The World Health Organization has eligibility criteria that guides service providers to ensure that side effects and health problems associated with modern contraceptive use are very minimal (WHO, 2013). It is advised that the user always talks to the service provider whenever she experiences any of these discomforts (Teye, 2013). These temporary discomforts cannot be compared to the dangers associated with unintended pregnancies leading to unsafe abortions and its attendant complications.

Conceptive use has enormous benefits. Contraceptive use helps to reduce population. It also helps to improve the health of mothers and children. Additionally women who use contraceptives to either limit or space children tend to have more control of their socio-economic situation.

### **2.3 Population Growth and Human development.**

Rapid population growth and its negative impact on human development became a great global concern in the early 1960s. This led to a series of international conferences on population and development. One of such conferences is the 1994 International Conference on Population and Development (ICPD) held in Cairo. This remarkable conference is sometimes referred to as the Cairo consensus. At the conference, world leaders articulated a bold new vision about the relationships between population, development and individual well-being. At the ICPD, 179 countries adopted a forward-looking, 20-year Programme of Action (PoA) that built on the success of the population, maternal health and family planning programmes of the previous decades while addressing, with a new perspective, the need of the early years of the twenty-first century.

The 1994 [International Conference on Population and Development](#) (ICPD) in Cairo was a milestone in the history of population and development, as well as in the history of women's rights. At the conference the world agreed that population is not just about counting people, but about making sure that every person counts. The ICPD conference in 1994 along with benchmarks added at five year reviews and appraisal of implementation of the ICPD Programme of Action, informed the eight Millennium Development Goals derived during the Millennium Development Summit held in 2000 at Chicago, USA.

Currently in Ghana the rate at which the population is growing does not match the rate at which the economy is growing. The population is growing faster than our economic growth (Saky, 2013). The economy of Ghana has increased marginally over the last two decades (GSS et al., 2009). However in this last decade, the economy has experienced inconsistencies in growth with high inflation rates (Country Profile, 2012). The daily minimum wage is 4.48% with an average annual increase of 30% in goods and services with much less increasing average annual salary for workers (Kunateh, 2012). This has led to a steady rise in the cost of living and this has subsequently reduced standards of living (Osiakwan, 2014).

The Agriculture sector has been the main stay of the economy. It contributes to about 30% of growth and employs up about 50 percent of people. This is followed by, gold and timber export. The agricultural sector has a lot of farmers using old and outmoded methods of farming which does not yield much farm products and increased post- harvest losses (FAO, 2013).

Recently there has been a fall in gold price leading to laying off of workers mainly bread winners in Gold mining companies including Ghana (Acheampong, 2014). About 30% of workers in mining companies have been laid off (Kommeneic, 2014 and William, 2013) with some threatening to shut down completely (Asante, 2014).

In addition to the above mentioned economic indicators, The Institute of Statistical, Social and Economic Research (ISSER) published a report on these economic indicators; employment rate, food price, oil price and their overall economic performance was poor in 2012-2013. The target for the overall growth of agriculture was 5.3% but what was achieved was 1.3%. This is far below the target needed to ensure food security in Ghana. Low production in agriculture coupled with high prices in crude and gas led to increase in cost of food. There has been about 300% increase in the cost of goods and services in Ghana from January 2014 till date (GLSS, 2012).

Increase in cost of food and other services will reduce the amount of food available to individual Ghanaian households.

Unemployment rate in Ghana for ages 15 years and above was 25% (GLSS, 2012). For ages 15-24 years is 16.7% as at 2012 with more females being unemployed than males (GLSS2012).

High unemployment rate among the youth leading to loss of income poses a threat to the livelihood of the youth (Akwara et al., 2013). They are unable to pay for the basic necessities of life namely food clothing and shelter (Kirby 2011). This can force them on the streets in Ghana where the nation has no security payments to the unemployed to keep them off the streets until they get jobs. These unemployed youth may be a threat to national security since they may indulge in social vices like stealing, armed robbery, prostitution. All of these does not augur well for national development (Kirby, 2011 and Akwara et al., 2014). Studies have shown that homes with large family sizes have fewer educational opportunities which makes them more likely to have high unemployment rates compared to homes with smaller family sizes (Anyanwu, 3013).

This instability in the economic growth coupled with high unemployment rates, high inflation rates, high percentage price increase does not auger well for large family sizes.

However family sizes are still large in Ghana averaging 4.0 children per woman and even higher in rural areas (GSS, 2011). Initiatives taken to improve standard of living, education and human developments in Ghana's present economic situation cannot be achieved without improved contraceptive uptake.

## **2.4 Prevalence of Modern Contraceptive Use**

Prevalence of modern contraceptive use in Ghana since the Cairo consensus increased, but later reduced and has since been increasing slowly. The number of women using modern methods of

Family Planning rose steadily from 6.0% in 1988 to 19% in 2003, but reduced to 17% in 2008 (GSS et al., 2009). The Unmet need for modern contraceptive use in Ghana is still high, 35% and 10% higher in rural areas (GSS et al., 2009). In the year 2011 the Multiple Indicator Cluster Survey conducted in Ghana submitted showed an increase in the prevalence of modern contraceptives from 17% to 23% (GSS et al., 2012). The same report showed a reduction in the level of unmet need from 35% to 26.4%. Considering the current rates, however, the targets set in Ghana's population policy to achieve 50% in prevalence of modern contraceptive use by the year 2020 is not likely to be attained.

Unmet need for modern contraceptive use is usually defined in two ways. Unmet need for modern contraceptive use in Ghana can be defined as:

1. the number of all Ghanaian women in their reproductive age who are sexually active, who do not want to get pregnant in the next two or three years (spacing) or who do not want to have any more children (limiting) and are not using any modern contraceptive method.
2. another definition is the number of all married women in Ghana who do not want to get pregnant in the next two or three years or who do not want to have any more children and are not using any modern contraceptive method. It is one of the indicators used to monitor family planning programmes (Bradley and Casterline, 2014).

It is usually measured using household surveys. Unmet need for family planning, method mix, contraceptive prevalence rate, sources of contraceptive supply and reasons for non-use are some of the indicators usually used to evaluate the effectiveness of family planning programmes in Ghana.

It has been estimated that, unmet need for contraceptive use is 42 % among Ghanaian women though about 78% had access to family planning services (Machiyawa and Cleland, 2013). Johnson et al., (2013), have shown that unmet need varies considerably in the various regions of Ghana. It is higher in the Northern, Western, Central and Volta Regions of Ghana compared to the remaining regions (Machiyawa and Cleland, 2013). Unmet need for modern contraception is usually lower among women with higher education compared to those with lower education (Asamoah et al., 2013). According to the World Development Report, (2012) and Adjei et al., (2014), marginalized and poorest women have the greatest unmet need for family planning. This is due to the fact that these categories of women also have reduced access to information (media exposure, education from health service providers), financial barriers and poor service quality. Young people also have high unmet need for contraception. This is because they have lower level of knowledge of family planning methods, wrong perception about side effects, unfair treatment by service providers which make them refuse to access from family planning service and reduced autonomy (Asare, 2013).

Ethiopia for example has high unmet need and this has been attributed to; unfriendly attitude of staff, lack of family planning methods in densely populated areas, religion, and low level of education among women and husband's disapproval of family planning. Reasons for non-use of modern contraceptives by Ghanaian women include fear of side effect, desire for more children later, husband or responds opposition to family planning and lack of knowledge about modern contraceptive methods (Biney, 2011). Of all these reasons, fear of side effects is very high 37% (Hindin et al 2014).

Whenever unmet need is high, total fertility rate does not decrease. The Total fertility rate in Ghana (TFR) reduced from 6.4 in 1988 to 4.4 in 2003. Between 2003 and 2008 it remained the

same i.e. 4.4. From 2008 to 2013 it has reduced to 4.0. From the Ghana Demographic and health survey, 2015 report, Total Fertility rate has increased to 4.2.

In order for all Ghanaian women to have access to safe and effective modern contraceptives, programme managers must monitor and evaluate existing programmes to determine why women are not using contraceptives although they do not want to get pregnant. Regulating of existing programmes will also help to identify gaps in family planning interventions and also avoid duplication of efforts (FHI, 2012). Since recent studies from London School of Hygiene and Tropical medicine, 2014 has shown that the strongest barrier to modern contraceptive use in Ghana is fear of side effect development of new technology to address the health concerns of women will also help. With the availability of broad range of methods, women can have the option to select methods which best suits their health.

## **2.5 Access to Modern Contraceptives.**

Universal access to safe and effective modern contraceptive methods by women and girls has been attempted in Ghana through family planning programmes but there are still challenges (Hall, 2008). Access to modern contraceptive methods and other reproductive health services is very complex and multidimensional. It is dependent on the type of services a particular population needs, their geographical location and the health care delivery system (Anderson, 2006).

Access to modern contraceptive use can be assessed in so many ways. Access can be measured using cultural access, geographical access and financial access (Hall, 2008) and knowledge of access to the contraceptive method (Adjei et al., 2014). Geographical access to health care services is usually measured in two ways. These are the availability of the health service (health

facility) and the accessibility of the service (distance) in a particular locality (Popick, 2009). This is usually measured using Geographic Information System (GIS) where travel time and the road network are taken into consideration (Acher, 2014). The shorter the distance to the health facility from the community, the easier it is for individuals and couples to have access to family planning services they need. In communities where geographical access is difficult, outreach programmes to these hard to reach communities by health workers is paramount. It is therefore necessary for the Ghana Health Service to identify gaps in delivering of family planning services. . It is also very important that continuous collaboration between the Ghana Health Service and private providers is ensured so that availability and accessibility of family planning services can improve. Some clients prefer to go to private providers and others prefer to go to Non-Governmental Organizations where their services are subsidized (Aremu, 2013).

Studies have shown that in Nepal, family planning on wheels (mobile family planning clinics) has improved contraceptive use including vasectomy use which is the least accepted method (Padmadas et al., 2014).

Availability of the family planning and other reproductive health services and friendly staff attitude also plays an important role in promoting the use of modern family planning methods (Adebowale and Palamuleni, 2014; and Moyer et al., 2014). Facilities that have friendly and patient health staff who are, knowledgeable and skillful in delivering family planning services attract clients to their facilities (Okech et al., 2011 and Kayongo, 2013). Studies have also shown that this usually goes a long way to improve modern contraceptive use. Recently in Uganda, (Kabagenyi et al., 20014), analyzed 2011 demographic and Health Survey. The findings showed that sexually active men who discussed family planning with health staff reported increased use of modern contraceptive as well increased use by their partners. Cultural values

affect the decision making process in accepting and using contraception by either couples or individuals (Adongo et al., 1998, Adongo et al., 1997 and Adongo et al., 2014). Depending on the geographical location of a particular population, culture can either be a barrier to use of family methods or not. That is each community has its own socio-cultural barriers. Elfstrom and Stephenson and (2012) examined how community level factors influence contraceptive use in some African countries. Secondary data from Demographic and Health Surveys in Twenty one African countries including Ghana was analyzed. After controlling for individual and household level factors, the findings showed that fertility norms, gender norms and inequalities, and health knowledge significantly influenced contraceptive use. Some socio-cultural barriers that have been identified to reduce modern contraceptive use among women are early marriage, religion, family pressure, domestic violence, lack of male involvement and decision making process being fully controlled by men (Dater et al., 2014). In the Tamale Metropolis of the Northern Region of Ghana Delamater et al., (2012), observed that Christian religion is playing a key role in increasing contraceptive use. Women are changing from traditional religion to Christianity and this is increasing their acceptance and usage of family planning methods (Doctor et al., 2009). Whiles women who are Christians are more likely to use family planning services; on the contrary, Moslem women were less likely to use family planning services in the same metropolis. Financial access is also important in predicting use of modern family planning methods. It involves individuals and couples paying for the service and commodities. Household income and wealth index have been found to be significantly associated with use of modern contraception (Mhammeh et al., 2014 and Adanu et al., 2008). Choice of Family Planning Service providers also depends on the socio-economic status of the client. Private Clinics and hospitals owned by individuals charge higher for services and commodities compared to public health facilities and

the Non-Governmental Organizations (Hutchinson, 2011). The Non-Governmental Organizations are very effective in supporting family planning programmes in Ghana because they usually operate in the communities. They also have the resources to meet the needs of hard to reach and underserved communities. Available evidence shows that these non-Governmental Organizations have done well to support family planning services so much in Ghana (Gyebi, 2011).

Clients from richest homes prefer to go to private hospitals and clinics compared to those from the poorest homes (Aremu, 2013). Studies have shown that women who earn money (income) are more likely to access and afford modern contraceptives compared to those who do not earn money (Asamoah et al., 2014).

The government of Ghana relies more on donor support to supply family planning commodities. This donor support is dwindling. Donor support for family planning commodities is about 90% while the government contributes 10% however, this has dwindled to about 60%. In order to improve financial access to modern contraceptive use for the populace, the government of Ghana must collaborate well with more Non-Governmental Organizations and other agencies to help address effectively the financial barrier to contraception.

In Ghana, family planning services is not covered by the National Health Insurance scheme like the free maternal health service. If family planning services are integrated into the National Health Insurance Scheme, more clients can obtain contraceptives and use. Research has shown that when family planning services are integrated into other services like HIV/AIDS Programmes, contraceptive use increases (Angah et al., 2005 and FHI, 2006). Research has also shown that in Ghana women who are registered with National Health Insurance Scheme are more likely to access family planning and other reproductive health services (Nketia-Amponsah et al., 2012 and Ringeim, 2009). This is because women who are registered with National Health

Insurance Scheme with functional cards can access health care at any time. An analysis of the Accra Women's Health Survey wave 2 by Blanchet et al., (2012) showed that women who were registered with National Health more than their counterparts who were not registered.

## **2.6 Current Contraceptive Use**

For the purpose of this study the indicator that is being used is Current Contraceptive Use. Current Contraceptive use is one of the four proximate determinants of fertility; the other three are proportions married, induced abortion and period of lactational infecundability (Bongaarts and Potter, 1983). The contraceptive prevalence rate (CPR) or current contraceptive use is usually defined as the percentage of currently married women who are currently using any modern method of contraception (GSS et al., 2009). It can also be defined as the percentage of women married or women in sexual union aged 15 to 49 who are currently using, or whose sexual partner is currently using, at least one modern method of contraception, regardless of the method used (UN/MDG, 2012).

Use of contraception to delay or limit the number of children born clearly affects a society's fertility level (Bongaarts, 2006). Contraceptive use is important due to its effect on fertility and its implication on maternal and child health. Current contraceptive use is a very important measure of contraception. The level of current use is the most widely used and valuable measure of the success of a family planning programme. Furthermore, it is used to estimate reduction in fertility attributable to contraception (GSS et al., 2009).

The World Health Organization uses contraceptive prevalence rate as an indicator of health, population development and women's empowerment. It also serves as a proxy measure of access to reproductive health services that are essential for meeting many of the Millennium Development Goals (MDGs), especially the child mortality, maternal health, HIV/AIDS, and gender related goals (World Health Organization, 2011). A country's contraceptive prevalence

rate is currently used as an indicator to monitor progress of Millennium Development Goal 5 of reducing maternal mortality by three-quarters between 1990 and 2015.

Surveys have shown that current use of modern contraceptive methods is highest in developed countries (World Bank, 2013). The lowest prevalence rate of modern methods is in sub-Saharan Africa (WHO, 2013 and Khan et al., 2007). For contraceptive prevalence, the rates for least-developed countries remain relatively low: 22 percent using modern methods of contraception (WHO, 2013). These rates are far lower than in the more-developed regions, where 58 percent use modern methods, and the less-developed countries, where 55 percent use modern methods (UNFPA, 2011).

Use of modern contraceptive methods including sterilization has generally increased over the past ten years in countries with strong family planning programmes. In low income countries, progress has stalled and in Sub-Saharan Africa is still low, less than 10% in many countries (UNFPA, 2008). In Ghana, over the past ten years, an increase in current use of modern contraceptive methods has not been consistent. The current contraceptive use initially increased from 13 percent among currently married women in 1998 to 19 percent in 2003, and has declined to 17 percent between 2003 and 2008 (GSS et al., 2009).

The Multiple Indicator Cluster Survey reported that current contraceptive use has increased to 23% in 2012 (GSS et al, 2012). The Ghana Demographic and Health Survey 2015 report, showed that current use has increased to 22%. Current use is slightly higher among women who are currently married than among all women. However, use is far higher among unmarried women who are sexually active than among married women or all women (GSS et al., 2009). In Ghana, injectables and pills are the most widely used methods among married women in every age group except for currently married women in their 40s who use female sterilization, this is

followed male condoms. Among sexually active unmarried women the male condom is the most commonly used method followed by the pill. This group is seven times as likely to use male condoms as compared to currently married women (GSS et al., 2009).

## **2.7 Predictors of Modern Contraceptive Use.**

Predictors of modern contraceptive use are factors that determine use of modern family planning methods. These factors have been found from surveys to include certain socio-demographic factors (Tawiah, 1997). Figure 1 is a conceptual framework for the determinants of modern contraceptive use in Ghana. These factors have been sub-divided into three sets namely demographic, socio-cultural and socio-economic factors. Furthermore, the demographic factors have been organized under indirect determinants of current use of modern contraception whereas the socio-cultural and socio-economic factors have been organized under direct determinants of modern contraceptive use (Stephenson et al., 2007).

The direct determinants directly influence current contraceptive use whereas the indirect determinants influence contraceptive use through the direct socio-cultural and socio-economic variables (Gordon et al., 2011). This is as shown in figure 1 below. From the framework, the dependent variable is current contraceptive use. The independent variables are those which have been grouped into direct and indirect determinants.

The indirect determinants namely Age, Marital Status, Fertility Preference, Number of Children Ever had and Place of Residence operate through the direct determinants namely Communication among Partners, Husband's Approval of Family Planning, Educational Level and Wealth index. The effect of the underlying factors (indirect determinants) is expected to reach the ultimate dependent variable (current contraceptive use) through these direct determinants.

However, there are existing relationships between some of the indirect determinants and some of the direct determinants (Cleland et al., 2006). From the framework it can be observed that, communication skills of women are influenced by their demographic characteristics such as age and marital status. In other words, the age and marital status of a woman affects how she communicates with her husband/partner about contraceptives (Bawah et al., 2002; Sharan and Valente, 2002; Oyedirane, et al., 2011). Older women have improved communication skills, social skills, interpersonal skills, assertiveness and better negotiating skills compared to their younger counterparts (Evans and Delva, 2009). When these skills are applied in discussion of family planning with their husbands the men would be more likely to approve of family planning ([Ogunjuyigbe](#) et al., 2009; Pillsbury and Mayer, 2005). For both married and unmarried women, demonstration of effective communication skills between the couple during discussion about contraception encourages the husband/partner to approve of family planning methods (DeRose et al., 2004; Sharan and Valente, 2002, and Laurel, 2001).

Similarly, the fertility preference of a woman, (i.e. whether she wants a child now, later or does not want any more children or is undecided about having children) will all influence the number of children she has ever had. This will in turn influence her husband's approval of family planning (Andrzejewski, 2008). More so, the educational level of a woman will influence where she lives and how empowered she is to take decisions about contraceptives (UNDP, 2011).

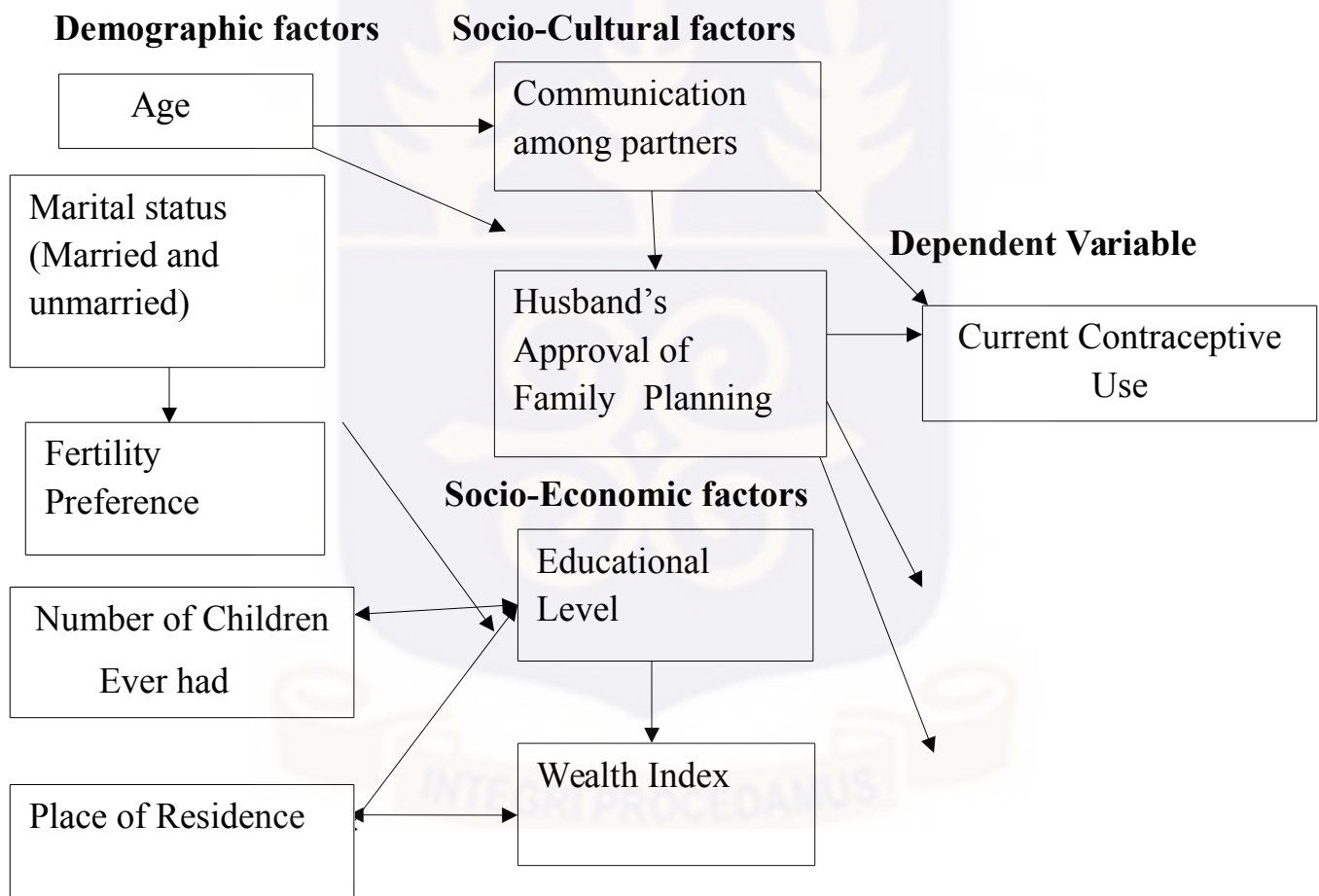
The direct determinants namely communication among partners, husband's approval of family planning, educational level and wealth index directly influence current use of modern contraception such that improvement in any of these variables will directly increase prevalence of current contraceptive use (Adanu et al 2009; Tawiah, 1997 and NRC, 1993).

**2.8 Figure 1: Conceptual Framework for Determinants of Modern  
Contraceptive Use**

**Independent Variables**

**Indirect Determinants**

**Direct Determinants**



## 2. 9 Changes in Predictors over Time

Socio-demographic factors that predict modern contraceptive use change over time (NRC, 1993). The changes in predictors and their relative strength could be attributed to differences in geographical area, access to information, family planning programmes and family planning methods (Glover et al., 2003). For example, family planning programmes have been identified to influence reproductive attitudes and behavior even under conditions of limited development (Benefo and Pillai, 2003). Changes in socio-cultural, socio-economic and demographic characteristics of women at point in time or over a long period of time can also affect the strength of these variables (Stephenson et al., 2009).

The total fertility rate in Ghana in 1998 was 4.6 children per woman with a higher rate of 5.4 in rural areas. In 2008, the total fertility rate reduced to 4.0 but with a rate of 4.9 in rural areas (GSS and MI, 1999; GSS et al., 2009 and ICF Macro, 2010).

In Ghana there were some changes in some of the factors that predict modern contraceptive use. Some of these changes occurred from 1993 through 1996 to 2008; when there was an increase in access to family planning services (Hong et al., 2005). This increase in access specifically has to do with availability of well trained personnel, equipment, family planning commodities and programmes as well as standard treatment guidelines (Hong et al., 2005). In that same period, prevalence of modern contraceptive use increased from 13% in 1998 to 15% in 2003 and by 2008, the prevalence was 17%. This means that increase in availability of family planning services translated into increase in the prevalence of current use of modern methods.

From 1990 to 2000 the rural population in Ghana reduced from 80.4 % to 69.6%. In 2010, it further reduced to 49% (GSS, 2011). This can influence place of residence as a predictor of modern contraceptive use. In this regard if creation of more urban areas is accompanied by

transfer of urban lifestyle from cities to rural areas which have been converted to urban settlements due to increased population size (Cleland, 2001). From 1998 to 2003 and 2008, knowledge about any modern methods of contraceptives for all women increased from 92.5% to 97.5% in 2003 and 97.7% in 2008 (GSS and MI, 1999; GSS et al. 2004 and 2009). This can also affect the choice of a particular modern method. Here if knowledge is used as a predictor of modern contraception, then women with higher knowledge about family planning methods will have increased odds of modern contraceptive use. On the other hand, if level of knowledge about modern contraceptive methods among women reduces, it will also reduce usage in general and women with least knowledge will have reduction in odds of use.

Adanu et al., (2009) reported that parity and marital status were not significant predictors for ever use of modern contraceptive by women in Accra, Ghana. Meanwhile Aryeetey et al., (2010) reported that marital status was a significant predictor forever use of modern contraceptives in Accra, Ghana. In (1998), Tawiah reported that formal education was a significant predictor of modern contraceptive use. Similar results were obtained by Adanu et al., (2009), that formal education was the singular most important predictor of modern contraceptive use among women in Ghana. These studies also showed that there was an increase in prevalence of modern contraceptive use by women with secondary and higher education. Women who do not have formal education and those with primary education were 20.8% while those with middle and higher education were 45.5% (Tawiah, 1998). In (2008), Niels-Hugo also reported that female education predicted modern contraceptive use in Ghana.

This means that education is being reported to consistently maintain its strength as predictor of modern contraceptive use over a decade by different authors. These findings suggest that the

other predictors of modern contraception in the model might have also undergone some changes in terms of their ability to best predict contraceptive use and their relative strengths.

## **2.10 Demographic Factors**

Demography is the science concerned with the analysis of the size, distribution, structure and processes of a population (Miller-Keane, 2005). A population's composition may be described in terms of basic demographic features such as age, sex, family and household status and by features of the population's social and economic context like ethnicity, religion, language, education, occupation, income and wealth. The distribution of populations can be defined at multiple levels (local, regional, national, global) and with different types of boundaries such as political, economic, geographic (Thompson, 2007).

Demography is a central component of societal contexts and social change. Demographic factors are the statistically analysed specific characteristics of a population, such as race, sex, age, household size, marital status, population growth and density. Each indicator has an effect on family planning (Thompson, 2007). For example if preference for male children is higher in a given population than for female children a couple or individuals with only females will like to have male children which will increase the fertility preference of the family (Milazo, 2013). Marital status also has an effect on family planning such that currently married women do not use family planning methods as compared to young unmarried women. It also affects the type of family planning method a woman or couple will use. The demographic characteristics of a population help to determine the population, size, density and future fertility (Bongaarts, 2009). Studies have shown that the demographic characteristics of a population have effect on contraception (UNESCO, 2002; Adebawale and Palamuleni, 2013).

### **2.10.1 Age and Contraceptive Use**

The age of a person is the length of time during which the person has lived. It is usually estimated using the last birthday. It is a very important determinant in decision making process.

Age is also an important determinant of health (Nagata, 2013). Age has been also identified to influence health. Children and old people are not as healthy as young ones because children and old people have developing and deteriorating immunities respectively. On the contrary, young people have good immunity in the absence of ill health. Older people are more prone to diseases like hypertension, diabetes and cancers.

The age of women affect their reproductive health such that as age increases maternal health decreases. Unmet need for contraception (limiting) have been found to be 13 times higher among women 35 years compared to their counterparts who are ten years younger (Macquarrie, 2014). Studies have shown that age of women influences family planning in terms of knowledge, access, choice of method and management of side effect, decision making process, intentions to use, payment for services and types of contraceptive methods they use.

Studies have shown that the sources of information on contraceptives for younger women (15-19 years) are also not reliable (Boamah et al., 2014). In Ghana it has been established that their sources of information about contraception and sexuality, is sometimes obtained from peers who do not know much themselves (Boamah et al., 2014, 2016 and Adibi 2011).

Side effects of contraceptives are usually overemphasized among younger women (Jones, 2011). Sometimes they do not know where to obtain contraceptives (Kayongo, 2013). Access to health facilities that are adolescent friendly is not very easy to come by especially in African settings including Ghana (Abdul-Rahman et al., 2013 and Boamah, 2013). Adolescent pregnant women are sometimes mixed with adults during antenatal and post natal clinics. This makes it difficult

for them to openly discuss issues pertaining to sexuality and contraception with their midwives or any other service provider (Pell et al., 2013).

Adolescents find it difficult to walk to clinics, chemical shops and hospitals to buy condoms and other family planning methods because the culture is such that you are judged as a bad girl or a bad boy and stigmatized by health workers and the community members the moment you decide to buy contraceptives (Atuyambe, 2008 and Biddlecom, 2008).

The World Health organization emphasizes on innovations to improve adolescent health services (WHO, 2012). Home visit to adolescents mothers to provide education on care of the baby and contraceptive use has been proved to be helpful (Banert, 2007). Financially they may not be in position to pay for contraceptive methods and other reproductive health services (Do and Kurimoto, 2012, Nketia –Amponsah, 2012).

It has also been observed that women in the lower age bracket might have not acquired skills to gainfully employ them. This situation has been found to be worse among adolescents from poor homes and in rural communities (Asamaoah, 2013). This is why the World Health organization and UNPA recommends that the prices of contraceptives and other reproductive health services should be subsidized for adolescents (Salsa, 2013). In many places young people who are not married are prohibited from purchasing contraceptives (Chandra-Mouli et al., 2014).

Contraceptive use varies with age due to different sexual and reproductive health needs among women of different age brackets. For instance, as age increases for women in reproductive age i.e. 15-49, contraceptive use also increases (Adanu et al., 2009). Women in the lowest and highest age brackets i.e. 15-19, and 45-49 usually have reduction in odds of use. This is because those women aged 15-19 years might not have started having children because they may still be in

school or learning a trade (Oeneba -Sakyi, 2002). Women aged 45-49 years might have finished having their children or might have attained menopause (Gold et al., 2001).

Age at first marriage also affects modern contraceptive use (Hogan et al., 1999 and Gage, 1995). Women who had their first marriage at less than 18 years are less likely to use modern contraception compared to those who had their first marriage after 18 years. Women who are married off as girls usually come from families with lower socio-economic status (UNICEF, 2001). Women who come from families with low socio-economic status and are married off as girls usually receive little or no sex education and education on contraceptive use from parents, health service providers or elsewhere (Hindin and Fatuse, 2009, Abdul-Rahman et al., 2011). Any education they did receive more often than not emphasizes common misperceptions of modern contraceptives (Williamson et al, 2009). Their plight is worsened because, these young girls who are usually not prepared for marriage do not have enough knowledge of pregnancy risk, prevention, and access to modern contraceptives (Adongo et al., 1997 and Bawah et al., 1999). More so, they are sometimes manipulated, forced, threatened, and are physically abused not to use contraception (Eaton et al., 2003 and Williamson et al, 2009).

As age increases, contraceptive use also increases. The peak age at which contraceptive use increases among Ghanaian women is 20-39 years (GSS et al., 2009 and Adanu et al., 2009). Studies have also shown that the type of contraceptive method women use also depends on their age (GSS et al., 2009). Contraceptive use among older women has been higher than their younger counterparts. Kanyomse, (2005) in the Upper East Region of Ghana, found that women who married at age 30 years and above were about 3 times more likely to use contraceptives compared to those who married at 15-19 years. Similar findings by Evans and Delva (2009) in Swaziland showed that young girls engaging in sexual relationships with men who were five or

more years older than them stand a higher risk of contracting HIV/AIDS. This is because as age differences increase, women find it difficult to negotiate for safe sex (condom use) with their older partners (Karim et al., 2003; John and Severine, 2008). Half (50%) of same age couples report consistent condom use whereas among males 8 years older than their female partners, only 25% reported consistent condom use (Evans and Delva, 2009).

### **2.10.2 Marital Status and Contraceptive Use**

Marriage is the union of a man and a woman who makes a permanent and exclusive commitment to each other of the type that is naturally fulfilled by bearing and rearing children together, and renewed by acts that constitute the behavioral part of the process of reproduction (Girgis, 2012).

It has been established that, marriage promote the psychological wellbeing of the couples such that during ill health, the patient who is married is more likely to recover faster than the patient without a husband or wife (Musick et al., 2012). Whether the person is happily married or not, it has been established that by all standards married couples are more likely to live nine years longer than singles. It reduces the incidence of heart disease among couples (Reignbeing, 2013). Couples especially men are found to have reduce prevalence of heart diseases when they are peacefully married (Ostrow, 2014).

Marriage has an influence on the use of modern contraceptives among women (Cox, 2013) because marriage affects the decision making process of a woman since majority of married women seeks their husbands' opinion concerning their intention to use family planning methods (Okunafua, 2013). It has been recorded in some rural part of Ghana that women had intentions to use post-partum family planning with the perception that their husbands /partners will accept it

by (Elaison et al., 2013). These same authors further recoded that even the choice of contraceptive methods were influenced by their husbands. Stephenson et al., (2007) and Ko et al., (2010) also established evidence from studies that marriage also affects the type of contraceptive method a woman will use. This shows that marriage influences modern contraceptive use such that if husbands/partners are involved in counseling women, use of family planning methods could improve. Husband's approval will eventually determine their actual use of modern contraceptives or not.

The Ghana Demographic and Health Survey Report (2009), showed that 35% of married women have unmet need for contraception (GSS et al., 2009). Some of the factors that have led to unmet need for contraception among married women can be attributed to culture that gives men almost complete autonomy over their wives decisions to use modern contraception (FHI, 1999).<sup>265</sup> Married women have also been identified to be less likely to use modern contraceptive compared to their unmarried counterparts (Adanu et al., 2009). This can be attributed to the fact that, especially in Africa, women are expected to show that they are fertile in marriage by getting pregnant and giving birth to live babies to confirm that (Eaton et al., 2003; Adongo et al, 1997) and hence they are less likely to use modern contraceptives.

In Ghana, the most widely used methods among married women are the Injectables and pills followed by male condoms and female sterilization. The converse is true for sexually active unmarried women; the most commonly used method is the male condom followed by the pill (GSS et al., 2009). One study in Ghana also found that condom use among unmarried women was higher compared to married women (NACP, 2011). Sexually active unmarried women prefer to use condoms most at times because they want dual protection; against unintended pregnancies and sexually transmitted infections including HIV/AIDS. On the other hand, married women use

contraceptives mostly to prevent unintended pregnancy (Ohene and Akoto, 2008). In another study in Indonesia, Rahayu et al., (2009) found that among married women, 32% currently used injectables while condoms use was only 0.3%. Maharaj and Cleland, (2005) also found that condom usage among married or co-habiting couples in rural South Africa was 8% and 11% respectively.

In some countries in Sub-Saharan Africa including Ghana, marriage is the source of livelihood of some women (Otoo-Oryortey and Pobi 2003; Nour, 2006). The World Health Organization estimates that more than 30% of girls in developing countries including Ghana marry before 18 years of age partly due to socio-economic problems. Of this about 14% do so before the age of 15 years (WHO and UNFPA, 2012). Recently during a parliamentary sitting in Ghana, it was suggested that the recommended age of marriage should be raised to eighteen years old and the age at first birth to 20 years (Kusi, 2014). This will give adolescent girls the opportunity to stay at school for longer time and acquire more skills to enhance their employment prospects (WHO and UNFPA, 2012). The longer they stay in school, the higher their chances of using modern contraceptives. In Ghana while the prevalence of modern contraceptive use was 17% among currently married women of all ages, it was much less among currently married women in the 14-19 years age bracket (Awusabo-Asare et al., 2006 and Abdul Rahman, 2011).

The adverse social, health and economic consequences of early marriage cannot be over emphasized. Early marriage affects young women physically, mentally, health wise and their pregnancy outcomes (UNICEF, 2005). Their educational ambition is terminated abruptly. They may never get the opportunity to continue schooling no matter how brilliant they are due to many pregnancies, care of children, restrictions from their husbands and significant others. Women

and young girls are sometimes forced into arranged and early marriages so that they can take care of themselves due to abject poverty of their parents (Awusabo-Asare et al, 2004).

In other situations, women and young girls may be forced to get married to a particular person due to cultural reasons including atoning for sins of other family members. An example is the Trokosi system in Ghana (Aird, 1996). If marriage becomes the source of livelihood of women, it affects their household decision making power (Kishor and Johnson, 2004). If the decision making power of a woman is reduced in her home it will have an effect on her health seeking behavior including decisions on family planning (Bawa, 2002).

Physically women who are married off as girls may not be well developed anatomically to carry pregnancy to term. In Ghana about 25% of marriages are too early and this can lead to maternal morbidities and mortalities (GSS et al., 2009). Psychologically these child brides may have to contain marriage and the challenges that come with it even though they may not be well groomed to handle such situations (WiLDAF and Greening, 2014). Sometimes they are forced or coerced for sex by their husbands (Hagman, 2013). This suffering coupled with their loss of freedom of growing up as any other adolescent into adulthood has long lasting effect on them and at times they lose their joy and psychosocial wellbeing (Juma, 2011 and Machele, 2013).

Women who are married off as girls usually have poor reproductive health outcomes (Nour, 2009). It is estimated that one out of the three child brides experience maternal morbidity and mortality (UNICEF, 2005 and Gustafson, 2011). Perinatal deaths are 50% higher among babies born to mothers under 20 years of age than among those born to mothers aged 20 to 29. The newborns of adolescent mothers are also more likely to have low birth weight, with the risk of long-term effects (Raj, 2014).

Adolescent mothers usually have less employment opportunities due to their low level of education, reduced opportunity to develop skills and community factors such as poverty (UNFPA, 2014). This reduces their access to information on contraception, antenatal care, delivery and post natal care (Atuyamba, 2008 and Adjei et al., 2014). Since they are usually not gainfully employed, they may not be financially in a position to access family planning methods or pay for antenatal care, skilled delivery and post natal care. Their inability to pay for contraception, in addition to their low level of knowledge and poor negotiation skills for safe sex exposes them to unprotected sex compared to their older counterparts (Chandra-Mouli and Braet, 2014). This leads to early births with complications such as obstetric fistula, obstructed labour, cephalo-pelvic disproportion (Nour, 2009).

Those who attempt to abort pregnancies in their matrimonial homes do so secretly and usually visit unskilled attendants (Opare, 2013). Their older male partners may expose them to sexually transmitted infections because these men who marry child brides may be polygamous or the girls may not be able to negotiate for safe sex even if they are the only wives (Kusi, 2014). Teenage girls who are married off have less autonomy in their marital homes. This reduces their decision making power including health promotion decisions like contraception (Bogale 2014).

### **2.10.3 Number of Children Ever Had and Contraceptive Use**

The number of children a woman has and how she has spaced these children affects her health, work and psychosocial wellbeing (UNICEF, 2001, Sakeah, 2014). Family planning influences almost every aspect of women's lives. Family planning positively enhances women's health, career progression and development, roles in the family, educational aspirations, income generation and care of the children (Kisaakye, 2014). Contraceptive use enhances a woman's

psychosocial status because she is not anxious of unplanned pregnancies and births (Armed, 2014). Unplanned pregnancies and ill spacing of children impacts negatively on the lives of women.

Larger family size requires more time for child bearing and rearing in addition to increased household chores and taking extra jobs in order to make more money to support the children (Canning, 2012). In Ghana, there is no child support for children so women with children under five may spend more time caring for them than engaging in income generation. This situation is worse for women who are impoverished (Hindebrackt, 2009).

There is a direct correlation between family size and the socio-economic status of both mother and children (Boakye, 2013). Women with more than four children have increased risk of maternal morbidity and mortality (FHI, 1999). They may also have high increased risk of obesity especially for middle aged women with its attendant health problems (Weng et al, 2004). The number of children a woman has also affects household food security, education, housing of children and the quality of time spent with these children (Olalekan, 2003). It has been recorded from a study in Ghana that women with more children have household food insecurity and increased inability to pay for quality education for their wards (Arthur, 2010).

Children from homes with larger family size may also lack adequate health care since the household income may not be able to cater for all of them in terms of both preventive and curative health care (Ajao et al., 2010 and Authur2010). Another study in Ghana by Mandela found that street children come from homes with larger family size. Adolescents who come from homes with unsafe and uncomfortable housing may prefer to stay with their colleagues on the street (Mandela, 2010).

Women with higher births sometimes have reduced educational opportunities leading to loss of gainful employment opportunities (Fitzgerald, 2011). This eventually affects their self-esteem and decision making power (Amu, 2006). The adverse social effects of large family size when felt by women tends to affect their contraceptive behavior (Ghana Maternal Health Survey, 2009; Okafor and Akinwale, 2005). Korra and Macro, (2002); Cleland et al., (2006) observed that the number of children a woman has ever had affects her reproductive health needs and hence her attitude towards family planning.

In Ghana, women who have more children (4 and above) and are experiencing the adverse social consequences of large family size tend to accept counseling from service providers on family planning and increase their contraceptive use compared to their counterparts with fewer children (Auther, 2010). Evidence from two rural states in Sierra Leone (Armin, 1998) showed that among women aged 12-49 years with at least one child younger than 5years, about 13% were using a contraceptive method and about 67% wanted more children. Higher prevalence of contraceptive use was found among women with more living children. It is likely that women with more children wanted no more. Women with larger number of children were more likely to use contraceptives. This finding is consistent with one survey in Saudi Arabia in which the relationship between parity and modern contraceptive use was examined. It was found that women with seven or more children have higher prevalence of contraceptive use than those with three or four children (Shehaa et al., 2010). In Palestine Madi, (1997) interviewed women with three or more children attending reproductive and child health clinics. The study revealed that the highest prevalence of contraceptive use was 43.0% among women with 10 or more living children, followed by women with 7-9 living children having a prevalence rate of 41.9%. The

lowest prevalence of 25% was found among women who have 1-3 living children. According to Bonaparte, (2009) modern contraceptive use increases with an additional child in Indonesia.

#### **2.10.4 Fertility Preference and Contraceptive Use**

Fertility is defined as the ability of a couple to produce live offspring's. Bongaarts and Potter, (1983) came up with a model of the four proximate determinants of fertility; the other three are proportions married, induced abortion and period of lactational infecundability. It was revealed that although fertility is a natural process is also influenced by other factors. Bongaarts et al. (1984) enumerated nine proximate determinants of fertility. These are:

1. percentage of women in sexual union,
2. frequency of sexual intercourse,
3. postpartum abstinence,
4. lactational amenorrhea,
5. contraceptive use,
6. induced abortion,
7. spontaneous intrauterine mortality,
8. natural sterility, and
9. Pathological sterility.

Emphasis was laid on women in sexual union and sexual activities rather than proportion of women who were married. The Demographic and Health Surveys Programme also came out with other determinants of fertility namely:

1. Current marital status
2. Sexual relationships of non-married women
3. Number of co-wives (women) / Number of wives (men)
4. Age at first marriage
5. Age at first sexual intercourse
6. Recent sexual activity
7. Median and mean durations for postpartum amenorrhea, abstinence and insusceptibility
8. Prevalence/incidence mean for postpartum amenorrhea, abstinence and insusceptibility

Number of sexual partners in both marital and non-marital unions, age at first sex, age at first marriage and post-partum amenorrhea, early marriage, polygamy and low use of modern contraception strongly determine fertility. According to Bongards and Potter, 1983, all these factors can be categorized as behavioral, biological cultural, psychological, economic, social, health, and environmental factors that influence fertility directly or indirectly. Fertility is usually measured by the Demographic and Health Survey Programme as:

1. Age-specific and total fertility rates:

Age-specific and cumulative fertility rates for the three years preceding the survey, by urban-rural residence and region.

2. General fertility rate:

General fertility rates for three years preceding the survey by urban-rural residence and region.

3. Crude birth rate:

Crude birth rates for three years preceding the survey by urban-rural residence and region.

Fertility preference refers to the number of children a couple, a man or woman will desire based on the existing number of children. It is measured in three ways namely:

1. Fertility preference by number of living children (women);

Percent distribution of currently married women by desire for more children, according to number of living children.

2. Fertility preferences by age;

Percent distribution of currently married women by desire for more children, according to age.

3. Fertility preference by number of living children (Men);

Percent distribution of currently married men by desire for more children, according to number of living children.

Fertility preferences are important measures for forecasting fertility. Fertility preferences are also used to calculate levels of unwanted or mistimed fertility and assessing unmet need for contraception. Fertility is highly valued in Sub-Saharan Africa of which Ghana is no exception.

Fertility preferences; the desire to have more children varies considerably in the regions of Ghana. The desire to have more children is stronger in the northern, central, western part of Ghana than other regions (GSS et al., 2009). Studies have shown that Ghana is a birth loving society. There is a cultural practice where a woman is appreciated through a ceremony when she gives birth to the tenth child (Asante, 2006 and Yanka, 1992).

The horrible experiences of barren or childless women and couples in Ghana cannot be over emphasized. Infertile couples are usually depressed and frustrated in their communities. In the Northern part of Ghana, studies by Tabong and Adongo (2013), showed that couples who were childless were stigmatized; Women without children in their old age are branded as witches and are not allowed to take care of other people's children. Men who are childless are thought of as having erectile dysfunction. They are excluded from assuming any leadership position in their communities. When a Childless person in the Northern part of Ghana dies his/her name is not mentioned whenever any ritual is being performed for ancestors. Automatically you are completely forgotten. Couples who are not blessed with children have very unhappy moments in their married lives because in Africa marriages are contracted partly for production of children. All these reasons make the desire to stop having children difficult for Ghanaians compared to women or couples in developed countries.

Comparing developed and developing countries, there is a large difference between the fertility preferences of couples, men and women. The fertility preference of women in developed countries is far lower than that of women in developing countries (Muhozu, 2014). Studies have shown that in Sub-Saharan Africa fertility preference and actual fertility remains high (Bankole, 2011). However fertility preferences have been found to be characteristics of individuals and

couples and not countries (Sennot, and Yetman 2012). Preferences have been found to be influenced by so many factors. Some of these factors are survival of children, age of mother, educational status of mother or couple, economic status of the family. Parental gender preference for children also influences fertility behavior (Rai et al., 2014). Preference for the male child

over the female child is very common in African countries. The presence of only female children in the family increases the desire for more children (Rai et al., 2014). This attitude of preference for the male child is not healthy for the mother and children and must be discouraged for their health and well-being.

Bawa et al., (2002) reported that in Ghana, fertility preferences are not stable and are usually dependent on certain factors. Some of the factors that have been identified to influence fertility preferences of women are relationship events, economic events, health events and reproductive events (Sennot and Yetman 2012). Although a couple's fertility preference and their subsequent fertility have been identified to be dependent on both of them (Bankole 1995), nevertheless in patriarchal societies like Ghana decision concerning reproductive health issues especially contraceptive use are influenced greatly by men (Do and Kurimoto, 2012; Muenchrath, 2009).

Secondary data analysis of GDHS and focus group discussions showed that spousal influence on contraception is almost an exclusive right exercised by men in Ghana over their wives (Feinstein et al., (2008). In Ghana and Nigeria, it was found that men demonstrated considerable control over family size than their wives rather than contraception being the right of both couple (Feyistan and Casterline 2000; Derose and Doodoo, 2006).

It has been reported by (Bongaarts , 2011) that in Sub-Saharan Africa, women who do not want any more children have higher prevalence of modern contraceptives use thereby decreasing

fertility rates compared to women who are undecided or want another child later who are usually undecided about contraceptive use. This means that the high level of unmet need can be reduced through contraception (Westoff, 2012). Similarly, women who have also reached or exceeded their desired number of children are more likely to use contraceptives (Kodzi et al., 2010). In Ghana, secondary data analysis of GDHS showed that fertility preference influenced contraceptive use such that couples who wanted more children used less contraception (Nketiah-Amponsah et al., 2012).

### **2.10.5 Place of Residence and Contraceptive Use.**

Where one lives usually has an effect on the person's behavior, lifestyle and attitude towards health. Studies have shown that place of residence affects the health status of women, their ante natal visits and pregnancy outcomes. Place of residence also affects people's health seeking behavior (Russell, 2008). For example, people living in hard to reach areas may not seek curative health services as soon as they fall sick due to the distance from their homes to the nearest health facility (GHS, 2010). On the contrary, someone living in a place closer to a health facility may seek treatment early because of the ease with which they are able to reach the health facility. Sometimes people may live closer to a health facility but the influence of their culture on their attitude towards health will prevent them from seeking care or partake in health programmes no matter how close the health service may be (Kyei-Nimako et al., 2012).

According to John Cleland, (2006), ideas about fertility and how it is regulated can be transferred or shared among different groups of people in different localities. In this regard women who live in rural areas can have positive attitude towards family planning when they are exposed to

information on contraceptive use through the mass media, rural family planning programmes and increased visits by service providers.

Place of residence has been identified from studies to influence modern contraceptive use in Ghana (Parr, 2003). In Ghana prevalence of modern contraceptive use has been found to be higher in urban areas compared to rural settings (TAP, 2005 and Do and Kurimoto 2012). Usually, couples living in urban areas have better access to resources such as the media and education which expose people to new ideas (Gebreselase, 2008). Besides, access to information on modern contraceptive methods, availability and ability to purchase may be more difficult for rural women as compared to urban women. For example in typical rural communities in some parts of Northern Ghana, birth rates are high which is partly due to reduced access to modern family planning methods (Prinsloo, 2011 and GNA, 2011). Rural women are less likely to have adequate information on modern contraceptives, access to various modern methods and even the ability to pay for these products or pay for reproductive health services provided when the need arises (Prata, 2009).

A survey was conducted by Uddin et al., (1985) among ever married women who are less than 50 years, to examine rural /urban differences in contraceptive use in Bangladesh. It was revealed that the level of use of any specific contraceptive method was about 49% in urban and 34% in rural areas. From Zambia Demographic and Health Survey (2007) rural women use more (50%) of traditional methods of contraceptives while modern methods account for 81% usage among urban women. A survey by Oyediran et al., (2011) showed that, 11% of adolescent rural dwellers in a Nigerian state used condoms at first sexual debut whereas 30% of urban dwellers used condoms in the same locality. This is also confirmed in study by Gakidou and Vayena (2007) during same sexual experience.

## 2.11 Socio-cultural factors

These are forces within cultures and society that affect thoughts, feelings and behaviours of people in their environment. Culture can also be defined as the customary beliefs, social forms, and material traits of a racial, religious, or social group (Hacker, 2011).

In a typical Ghanaian tradition having many children is favored (Fischer, 2002). Couples who have many children are respected and are thought of as having old age support, labor, prestige and marital stability (Cadwell, 1990). It has negative consequences for couples not to have children in the Ghanaian society (Takyi, 2001). These socio-cultural practices that are embedded in the social system have an impact on decisions related to fertility (Adongo et al., 1998) and can serve as a barrier to modern contraceptive use (Adongo et al., 1998).

Another cultural practice which limits contraceptive use in Ghana is that typically, women do not make decisions about contraceptives and family planning alone (Nketiah-Amponsah et al., 2012). Some make decisions concerning family planning with their partners/ husbands while others do so with their husbands and significant others like parents in laws (Do and Korimoto, 2012). This is partly due to the fact that level of female education is low (GSS et al., 2009) making women less autonomous in decision making and more economically dependent on their husbands (Peters et al., 2010). Reduced autonomy and increased financial dependency on their husbands impact negatively on their decision making concerning reproductive health (Blanc 2003; Do and Kurimoto, 2012).

These socio-cultural practices where women who bear physical burden and pain of childbirth and child care have little power concerning contraceptive use is a violation of human rights (UN,

2010 and [Rauhala](#), 2012) and are common in sub-Saharan Africa (Upadhyay and Karsek, 2011 and Makinwa-Adebusoye, 2001). This contributes to persistent high fertility rates in Sub-Saharan Africa (Cleland et al., 2006). Joint decision making with regards to family planning is therefore necessary to increase prevalence of modern contraception since when decisions are taken together women are encouraged by their spouses to use family planning methods (Nketiah-Amponsah et al., 2012).

In developed countries like United Kingdom and Sweden the situation is different because women's autonomy concerning decisions on reproductive health has improved due to higher prevalence of female education and increased economic independence (Saalem and Bobak 2005). Additionally, having many children which is seen as favored in Ghana is not the norm because women in developed countries have acquired higher education and have employment opportunities (Hyam, 2002). Couples also do not see having many children as support in old age because there are social support systems in place to cater for citizens in their old age (Shetty, 2012). These cultural practices in Ghana where having many children is regarded as advantageous have been found to influence spousal communication and husband's approval of family planning (Bawah et al, 1999 and Blanc, 2003).

### **2.11.1 Spousal/Partner Communication and Contraceptive Use**

Communication skills are generally understood to be the art or technique of persuasion through the use of oral and written language. Effective communication is the creation of a common understanding of ideas, desires and observations among people. Effective communication depends on good communication skills and includes good interpersonal skills, etiquette and

decorum (Stickly, 2006). When these good communication skills are possessed by a couple it enhances their ability to discuss issues (Willey, 2007).

Studies have shown that effective communication skills among married couples can improve relationships and also help couples to initiate and sustain discussions about contraceptives (Daniel et al., 2008). Recently in Kumasi, Ghana, a study was conducted by Cox et al., (2013), to explore the effect of constructive communication among married or cohabiting couples and current contraceptive use. The results showed that men who engaged in constructive communication with their partners have increased chances of using modern contraceptives. Research has also shown that couples with good communication skills on how to initiate and sustain discussions about family planning had higher prevalence of contraceptive use than couples with ineffective communication skills (Babalola and Vondrasek, 2005).

In one survey in Nigeria knowledge about inter-spousal communication and actual communication among couples were assessed. The author found a positive association between good communication skills among couples and contraceptive use (Ayokunle, 2004). That is to say that couples who were reported to be good communicators were more likely to use contraception compared to their counterparts who were poor communicators. Sexual communication and openness in relationship among teens has also been identified to improve condom use (Widman et al., 2006).

In Navrongo, Ghana (Bawah, 2002) found that husband/wife communication strongly predicted contraception and family planning behavior. Among currently married women in Ghana, ever use and current use of family planning methods were associated with the number of times the couple communicated about contraception (Link, 2011). A study in Ghana involving men alone also conducted by FHI, (2009) on the factors that influenced men's involvement in family planning

programmes confirmed that discussions about family planning with their spouses will eventually improve their attitudes towards contraceptive use and subsequently their partners' usage.

A modified version of the 2008 GDHS questionnaire was used to interview women and men in three sub-districts in Kumasi, Ghana on predictors of modern contraceptive use. The respondents attested to the fact that lack of communication between them and their spouse attributed to low prevalence of modern contraceptive use in the Barekese district (Krakowiak-Redd et al., 2011).

This also confirms that communication among couples is a strong predictor of modern contraceptive use. Akafouah and Ssou, (2008) conducted a survey in Dunkwa-on-Offin, a district in Ghana and reported that when spouses communicate, contraceptive use is encouraged.

Ayokunle, (2004), observed that in Lagos State, Nigeria couples who regularly discussed family planning issues were more likely to use contraceptives at home. Other similar findings in Nigeria by Ankomah et al., (2011), showed that respondents who discussed family planning with their spouses were four times more likely to use contraceptives compared to their counterparts who did not have such discussions.

The number of times couples communicate has also been reported to promote contraceptive use. Acharya et al., (1996), confirmed that prevalence of modern contraceptive use was higher among couples who communicated often. Analysis of 2008 Demographic and Health Survey using four Sub-Sahara African countries including Ghana showed that couples' frequent discussion of fertility preferences and family planning was positively associated with modern contraceptive use (Salway, 1994; Do and Kurimoto, 2012).

### **2.11.2 Husband's Approval of Family Planning and Contraceptive Use**

In Ghana, about 78% of males are households heads (GSS et al., 2009). Some women in developing countries including Ghana rely almost completely on their husbands to make decisions concerning their reproductive health (Bogale et al., 2011). This makes husband's approval of family planning very important. Husband's approval of family planning in Ghana and other Sub-Saharan Africa countries has encountered some challenges due to some of these barriers to male involvement in family planning. Some of these barriers to male involvement are; the perception that women will involve in extra marital affairs, reproduction health is female issue, preference for large family size, limited family planning methods available for men to choose from and fear of side effects for family planning methods especially vasectomy (Kabagyeni et al., 2014).

Contraceptive methods have been designed in such a way that men have fewer modern family planning methods available to choose from (Hather et al., 2008, Grillo, 2009). Currently in Ghana, men have to choose from only two methods i.e. either the male condom or vasectomy (GHS, 2011) while women have variety of family planning methods to choose from (Hather et al., 2008). This makes it quite difficult for men to play active role i.e. using them to enhance contraceptive use. This situation is worsened by the fact that currently less than 0.5% of family planning clients opt for vasectomy in Ghana (Owusu-Asubonteng et al., 2012). This means that if women are supported by their husbands, and they receive proper counseling, with this variety of methods available, women will be able to make informed choices. Male involvement in modern contraceptive use programmes is therefore very necessary for Ghana to improve prevalence of modern methods (FHI, 2009).

If there is an approval from the husband on modern contraceptive use their wives will have increased likelihood of usage. Studies in this area have shown that when one partner (especially the male) demonstrates a positive attitude toward contraceptive use the other partner also will be more likely to use family planning methods (Grillo, 2009). In Ghana some studies showed that husband's approval was an important predictor of current contraceptive use (Oheneba- Sakyi, 2002; Nketiah-Amponsah, 2012 and Bawa, 2002). In, (Akofouah and Sossou, 2008) found that in Accra Ghana, fewer men approve of family planning and this contributed to low usage among women. In Ghana and other Sub-Saharan African countries, lack of husband's Approval of family planning contributed to large family sizes (Bongaarts, 2006). In order to increase contraceptive use in the sub-region, effective family planning programmes designed purposely for men must be considered (FHI, 2009).

In Cambodia, one study showed that women whose husbands approved of family planning were 3.4 times more likely to use modern contraceptives than those whose husbands did not portray such behavior (Samandari et al., 2010). Similar results were reported in Ethiopia that women who approve of family planning and who believe that their spouses also approve of family planning are more likely to use contraceptives (Korrae and Macro 2002 and Eliason, 2013). In Sub-Saharan Africa, studies using data from DHS in 15 countries have shown that men who approve of family planning encourage their wives to use modern contraceptives (FHI, 1998).

Ethiopia has reported similar findings in two different studies which showed that husband's favorable approval of family planning predicted modern contraceptive use (Tilahun et al., 2014 and Mohammed et al., 2014). The inference is that if Family Planning Programmes could find a better way of including men as individuals and as partners of couples modern contraceptive use could rise considerably.

## **2.12 Socio-Economic Factors**

Socio-economic status can be defined as an individual's or group's position within a hierarchical social structure (Hirsch et al., 2002). Socioeconomic status depends on a combination of variables. It is usually measured using education, level of income, type of occupation and in some populations' heritage and religion. Socio-economic status is usually used as an indicator of morbidity and mortality (WHO, 2011).

By ensuring access to contraceptives and family planning services, governments promote human development and economic growth. Use of modern contraceptives by couples to prevent unintended pregnancies has enormous benefits for women, young girls, couples and the entire family. These benefits usually are transformed into human developments in any country that is able to achieve it.

Studies have also shown that access to safe, reliable, acceptable, and affordable contraceptives has socio-economic benefits (UNFPA, 2012). However, United Nations Population Fund (UNFPA, 2008) notes that rates of maternal morbidity and mortality are particularly high for women who are most limited in their access to contraceptives, namely those who are young and poor. Several authors have come out with findings to show that there is a positive association between socio-economic status of a woman and modern contraceptive use. For this reason the author used socio-economic status as one of the indicators to determine the predictors of modern contraceptive use in Ghana.

### **2.12.1 Formal Education and Contraceptive Use**

Adu-Yeboah and ObiriYeboah (2008), defined education as the total process of human learning by which knowledge is imparted, talent trained and skills developed. It plays a critical role in shaping attitudes and adoption of healthy behaviours. Education is a strong predictor of long-term health and quality of life. An individual's health is highly correlated with his or her social position. Success in school and years of schooling are major factors in determining social and occupational status in adulthood (Feinstein et al., 2008).

Education is classified in three levels in Ghana. These are formal, informal and non-formal education. Formal education in Ghana is classified into first, second and third cycles. It is usually supervised by the state under the watch of well-trained educationists. Informal education is the form of education in which knowledge, skills and attitude are acquired or built up from daily experiences as a result of exposure to the social and physical environment. Non-formal education takes the form of after-school programmes such as adult and civic education, and does not lead to certification on completion.

This study emphasizes more on formal education among females. Formal education is a tool of social transformation. Formal education teaches one to think; Peters et al., (2010), leaving one with cognitive and decision-making abilities that are responsible for improving one's health (Lleras-Muney, 2005 and Peters et al., 2010). This is why Millennium Development goal 2 emphasizes on achieving universal primary education for all girls. Female education has been found to be a powerful tool in transforming unhealthy reproductive behaviors at the community level in rural Ghana (Owusu et al., 2011). In the rural community, the investigators found

that female education introduces new reproductive ideas such that a woman's interest in limiting fertility increases as formal education among women in their community also increases (Benefo et al., 2006).

Education can also have multi-generational effects: Educated women are more likely to have educated children, particularly daughters (Sabates et al., 2011 and UNFPA, 2011). It is estimated that one year of female schooling reduces fertility by 10% (World Bank, 2012). Educated women generally want smaller families and make better use of reproductive health and family planning information and services in achieving their desired family size. Female education directly enhances fertility decline, reduces maternal morbidity, mortality and under five deaths (Dake et al., 2012).

It is being advised that smarter economist should invest in the education of girls for 'the girl's dividend' to be experienced. The "girl's dividend" is the direct financial gain in a community when that community invest in female education. Recent studies showed that a country like Nigeria will gain US\$13.9 billion annually if young women were given the same employment opportunities as young men (World Bank Report, 2012). Additionally, studies have found that women with higher level of education are often more active in the workforce, have increased earning power, thus improving their own economic security and the well-being of their families and also an improvement in their use of modern contraceptives (World Bank, 2011). When women have the opportunity to get higher level of education, it improves their decision making power, purchasing power and negotiating for safer sex (Tenkorang, 2012). The improvement in all these areas of their lives is translated

into their effective participation in decisions about family planning (Benefo and Pillai 2003). This in turn will improve their contraceptive use. Survey by Shapiro, (2011) showed that each year spent in school by a woman in Sub-Saharan Africa reduces fertility.

Also, every level of education completed reduces fertility significantly. These results suggest that female education is almost the single most significant contributing factor to fertility decline (Stephensons et al., 2007; Adanu et al., 2009 and Tawiah, 1997). The influence of education on contraceptive use has been studied and results show that higher education is strongly associated with improvement in contraceptive uptake (Decker and Constantine, 2011).

A survey on contraceptive use by women in Accra showed that women with no formal education had 48% reduction in the odds of having ever used contraceptives and 66% reduction in the odds of currently using contraceptives compared to their counterparts who had formal education (Adanu et al., 2009). Research evidence from Ghana by Benefo, 2006 and Nketia-Amponsah, 2014), suggests that women with formal education have interest in using modern contraception to regulate fertility. The influence of education is further demonstrated in a study by Chimbindi, (2010), who reported that 54% of study participants with secondary education reported using condoms while those with primary and no education had lower percentages of usage i.e. 40% and 38% respectively.

### **2.12.2 Wealth Index and Contraceptive Use**

Wealth can be defined as valuable possessions or money (Wiley, 2010). This can be owned by an individual, a community or nation. Wealth index is a composite measure of a household's

cumulative living standards (The DHS, 2004). The Demographic and Health Survey calculated wealth index using a household's ownership of certain assets. Some of these assets are television, radio, bicycle, Type of building material and type of roofing material. It also includes access to potable water and sanitation facilities like toilet and methods of clearing dumping of refuse (GSS et al., 2009).

The Demographic and Health Survey calculates wealth index by placing households on a continuous scale of relative wealth. All interviewed households are separated into five wealth quintiles. This is very useful because usually reliable data on income and expenditure is difficult to get in certain countries. This allows for researchers to compare the influence of wealth on the health status of families. This indicator has been shown to have large influence on wellbeing of families and populations globally (Peprah, 2012 and Kyei-Nimako, 2014). For example wealth index has been identified to influence a family's health seeking behavior and access to health and other basic necessities of life such as food, shelter, water and sanitation (Adanu et al., 2008 and Sppor, 2013).

Use of modern contraceptives by women and girls to prevent unintended pregnancies help them to improve their decision making power thereby increasing their self-esteem and quality of life. Moreover, family planning has been shown to increase women's and girls' self-esteem and quality of life, access to education, and opportunities for employment and income-generation (UNFPA, 2009). Increased income level of women or both parents help them to provide quality care, adequate nutrition, safe and comfortable housing, and high quality education for all of their children, creating positive health impacts for the entire family (Bawah et al., 2002 and Smith et al., 2001).

Women who have autonomy and are able to influence household decision making including contraceptive use are richer than their counterparts with less autonomy in decision making processes (Darteh, 2014). Women who use contraceptives in Ghana are often more active in the workforce and have increased earning power, thus improving their own economic security and the well-being of their families (Solo et al., 2005; UNFPA, 2009; Benefoe, and Pillai 2003). The type of employment a woman has and her income level has been proved to influence her contraceptive behavior (Adanu et al, 2009). Women with lower income may have inadequate information regarding existing alternatives of contraceptive methods and the way these methods work as a result of reduced access to communication and counseling on the topic (Williamson et al., 2009). The prevalence of contraceptive use varies directly with the level of socio-economic status such that women who are working are more likely to use contraceptives compared to their counterparts who are unemployed (Adebowale and Palamuleni, 2013). This is because women who are working especially those who work outside home are more exposed to life outside home and some of the adverse social consequences of large family size that affect working class women.

Methods that are provided by the public sector are often not paid for by the user, so levels are unlikely to affect their use. Methods provided by the private sector are sold, and income is more likely to affect their use. This makes low income a constraint to modern contraceptive use among poor women. This is very peculiar in sub-Saharan Africa where a lot of women have low income (Agha, 2000). Other authors have reported that the poor have limited ability to buy modern contraceptives. In a study using demographic and health survey from 55 developing countries including Ghana and other sub-Saharan Africa countries, Gakidou and Vayena (2007) reported

that poorer women were using much less contraceptives and had limited access to reproductive health services due to their inability to pay.

Household income also predicted prevalence of modern contraceptive use in a survey of African countries including Ghana by Creanga et al., (2011). Creanga et al., (2011), observed that even if a couple has intentions to limit or space children, they were not be able to do so because they could not afford the cost of both a commodity and other reproductive health services. Their place of residence may be difficult to reach by family planning service providers hence their reduced access to modern methods.

Other studies have also shown that women who are less financially dependent on their spouses have increased likelihood of using contraceptives compared to their counterparts who are poor (Shapiro, 2008).

This is evidenced by many Demographic and Health Survey (DHS) studies across the developing world. For example, in Ghana, the 2008 DHS found that prevalence of modern contraceptive use was 12% among families in the lowest quintile compared to 21% among families in the highest quintile (GSS et al., 2009). Similarly, using DHS data from 55 developing countries including Ghana, Gakidou and Vayena (2007), found that modern contraceptive use increases with increase in wealth quintiles. This suggests that the prevalence of modern contraceptive use is more likely to be lower among households in the lowest quintile compared with household in the highest quintile. Findings from analysis of 1998, Ghana Demographic and Health Survey by Parr, (2003),

revealed that contraceptive discontinuation rate was highest among the poor.

It has also been established that adolescents who live in low income countries and have parents with lower level of income are less likely to use condoms because of difficulties with purchase (Lazarus et al., 2009).

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

This chapter describes the methodology of the study. It provides an overview of Ghana Demographic and Health Survey (GDHS), and describes the procedure for obtaining data for the current analyses. This chapter also details the methods of data analyses as well as the limitations of the study.

#### **3.1 Brief Overview of Ghana Demographic and Health Survey**

Ghana Demographic and Health Survey (GDHS) is a nationally representative household survey conducted every 5 years. The first Ghana Demographic and Health Survey was conducted in 1988. Since then, five successive rounds have been conducted with the latest in 2013. These are

cross-sectional studies that employ two-stage cluster sampling technique to collect data from men aged 15-59 years and women aged 15-49 years. The data cover demographic processes in the country, including fertility levels, marriage, family planning behavior, domestic violence, infant and child mortality.

Additionally, these surveys collect information about the nutritional status of mothers and children, utilization of maternal and child health services, access to National Health Insurance Services in Ghana, and additional data on knowledge and behavior regarding HIV/AIDS and STIs (GSS and MI, 1999; GSS et al. 2004, and 2009).

Detailed description of the sample design and survey implementations have been documented in the introduction and the appendix sections of the 1998, 2003 and 2008 report of GDHS (GSS and MI, 1999; GSS et al. 2004, and 2009). Details of the questionnaires can also be referred to in the women's questionnaires of the three sets of DHS reports.

### **3.2 Access to Data**

Data for this study was obtained from the "MEASURE DHS" website ([www.measuredhs.com](http://www.measuredhs.com)). The topic to be studied was Permission to use the data was granted after a proposal on the topic was submitted to this website. Approval was subsequently given by Measure DHS, and the data with recode manuals were downloaded. The recode manuals for the three different waves were critically studied to understand the coding and variables in the data sets. New data sets were constructed with only the variables of interest being retained.

### **3.3 Description of study, Study design, data sets and Sample size**

This study is a secondary data analysis covering a 10-year period, 1998-2008. These three waves of data were used because they are the three most recent surveys done. Thus, three waves of

GDHS data sets for 1998, 2003 and 2008 were used. For the purposes of this study, only data relating to women aged 15-49 years were analyzed. The Individual Recode which contains data using the female questionnaire was used for the analysis. The Individual Recode also has detailed information on contraceptive use by women. Data for 1998, 2003 and 2008 survey rounds contained information on 4,843, 5,691 and 4,916 women respectively. Thus these numbers represent respective sample size for the three waves. A detailed description of the sample design and implementation has been reported elsewhere (Ghana Statistical Service, 1999) The study design is a cross sectional studies that employ two-stage cluster sampling technique to collect data from men aged 15-59 years and women aged 15-49 years. The data sets for the various surveys have information on households, children, births, males, couples and individuals. The individual recodes have information on women. The recode manuals for 1998, to 2008 were studied and the coding standards in the manuals were critically studied to obtain information about the variable codes and their description. The contraceptive table was also studied to know which of the family planning methods was classified as traditional and modern. The surveys of interest; 1998, 2003 and 2008 were selected. This was done by selecting the country, type of survey, year and the characteristics contraceptive use. The questionnaire from which the variables of interest were obtained was studied.

### **3.4 Study Variables**

Current contraceptive use is measured in three categories by the GDHS

1. All women who are currently using any modern contraceptive method
2. Currently married women who are currently using any modern contraceptive method

3. Sexually active unmarried women who are currently using any modern contraceptive method.

### 3.4.1 Study population

All women who are currently using any modern contraceptive method

### 3.5 Dependent variable

#### Current Contraceptive Use.

The GDHS question asked was; are you currently doing something or using any modern contraceptive method to delay or avoid getting pregnant? The responses were grouped as:

1. No method
2. Folkloric
3. Traditional
4. Modern method.

No method, folkloric and traditional was combined as current **non** user of modern contraceptive which was recoded as current **non** use = 1 (Table 1).

Modern method was recoded as current user = 2 (Table 1).

Therefore, all women using either no method or any or all of the two, namely, folkloric and traditional were regarded as currently **not** using modern method. All women using any modern method were regarded as currently using (Table 1).

### 3.6 Independent variables

The independent variables which influence current contraceptive use of the study population are subdivided into three sets namely demographic, socio-cultural and socio-economic variables.

The socio-cultural and socio-economic variables; (Direct determinants) are the variables that

directly influence current contraceptive use. The demographic variables influence current contraceptive use indirectly. These 3 sets of variables were selected because studies have shown that they influence contraceptive use in Ghana and other parts of Sub-Saharan Africa (Tawiah, 1998, Bongaarts, 2009 and Owusu-Asubonteng, 2012).

The table below (Table 1) has information on all the variables of interest in the study. It has four columns. The first column has information on the variables of study. This includes the dependent and independent variables. These variables have been further been grouped into demographic, social-cultural, socioeconomic variables as described in the conceptual framework (figure 1).

The following variables; Age, Place of Residence, Education and household possession (Wealth index) were pulled- out from Section 1 (respondents' background) of the female questionnaire. Likewise Parity and Fertility Preference were extracted from Section 2 (reproduction) from the questionnaire. Current use of contraceptives, Husband's approval of Family Planning and Discussion of Family Planning with partner was pulled-out form Section 3 (contraception) portion of the questionnaire.

The third column has information on the variables as they have been coded in the data sets. These variables were extracted from the three data sets; 1998, 2003 and 2008 using the recode manuals and the contraceptive table. The fourth column has information on the newly generated variables that were used for data analysis. These variables were generated, labeled and saved next to where they appear in the original data sets for easy identification and access. Only variables of interest were retained. The variables were then measured as follows;

1. Current contraceptive use was measured and coded as:

- a. All women who are **currently using** any modern contraceptive method =1
- b. All women who are **currently not** using any modern contraceptive method = 2

2. Age was measured in age groups and coded as:

- a. 15-19 years = 1

- b. 20-24 years = 2
- c. 25-29 years = 3
- d. 30-34 years = 4
- e. 35-39 years = 5
- f. 40-44years = 6

3. Marital Status was measured as Never Married, Married, Divorced, Living together,

Widowed, Not living together and coded

All respondents who were coded as :

Never married+ Divorced+ Living together+ Widowed+ Not living together were classified as

- a. Married = 1
- b. **Not** Married = 2

4. Fertility Preference: This was measured as: Have Another, Undecided, No more, Sterilized,

Declared infecund, never had sex

- a. Undecided was coded as =1
- b. Undecided was coded as =2
- c. No more was coded as =3

5. Parity (Number of children ever had) **was measured as women with 0 to 3 children and women with four or more children. This was coded as:**

- a. Women with 0- 3 children = 1
- b. women with 4 or more children = 2

6. Place of residence. This was measured as Rural and Urban and was coded as

- a. Urban = 1
- b. Rural = 2

7. Husband's approval of Family Planning was measured as Disapproves, Approves and was coded as:

- a. Approves = 1
- b. Disapproves = 2

**8. Discussion of Family planning with partner was measured in terms of frequency of discussion.**

- a. More Often = 1
- b. Once Or Twice = 2
- c. . Never Discussed = 3

9. **Educational level was measured as primary, secondary, higher.**

- a. No education = 1
- b. Primary = 2
- c. Secondary = 3
- d. Higher = 4

10. **Wealth index.** This was measured how rich or poor the respondent was and coded as

- Poorest, = 1
- Poorer = 2
- Middle = 3
- Richer =4
- Richest = 5

**TABLE 1: VARIABLES IN THE STUDY**

Description of Variables <i>Independent Variables</i>	DHS Questionnaire	Variables and Codes In Data Set	Newly Generated Variables
<b>Demographic Factors</b>			
1. <b>Age Groups:</b> Current age of respondents in 5- year groups	<b>107:</b> How old were you at your last birthday?	<b>V013:</b> 15-19 years, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, 45-49 years	15-19=1, 20-24=2 25-29 =3 30-34 =4 35-39 =5 40-44 =6 45-49 =7
2. <b>Marital status:</b> Current marital status of the respondent.	<b>601:</b> Are you currently married or living with a man same if married? <b>603:</b> What is your marital status now: are you widowed, divorced, or separated? and <b>604:</b> Is your husband/partner living with you now or is he staying elsewhere?	<b>V601:</b> Never Married, Married, Divorced, Living together, Widowed, Not living together	Never married+ Divorced+ Living together+ Widowed+ Not living together = <b>Not Married =1</b> Married = 2
3. <b>Fertility Preference:</b> Number of children respondent will want to have in her life time	<b>602:</b> Now I have some questions about the future (a/another) child, or would you prefer not to have any (more) children?	<b>V602:</b> Have Another, Undecided, No more, Sterilized, Declared in fecund and never had sex	Have another = 1 Undecided = 2 No more = 3
4. <b>Parity:</b> Total Number of children respondent has ever had	<b>201:</b> Now I would like to ask about all the births you have had during your life. Have you ever given birth?	<b>V201:</b> 0 to 14	0-3children = 1 4And Above = 2
5. <b>Place of residence:</b> Type of place of residence where respondents was interviewed	<b>103:</b> How long have you been living continuously in (name of current place of residence)?	<b>V103:</b> Urban Rural,	Urban = 1 Rural = 2

<p><b>Socio-Cultural Factors</b>  <b>6.Husband’s approval of Family Planning:</b>                  Whether respondent thinks her husband approves of using a method to avoid Pregnancy</p>	<p><b>624:</b> Do you think that your husband/partner approves or disapproves of couples using a Contraceptive method to avoid pregnancy?</p>	<p><b>V610:</b> Disapproves, Approves, Don’t Know</p>	<p>Approves = 1                  Disapproves = 2</p>
<p><b>7. Discusses Family planning with partner:</b> Number of times respondents discussed family planning with husband/partner</p>	<p><b>625:</b> How often have you talked to your husband or partner about family Planning in the past year?</p>	<p><b>V611:</b> More Often, Once Or Twice, Never Discussed,</p>	<p>More Often = 1                  Once Or Twice = 2                  Never Discussed = 3</p>
<p><b>Socio-economic Factors</b>  <b>8.Educational Level:</b> Variable Providing level of educational respondent attended</p>	<p><b>109:</b> What is the highest level of school you attended: primary, middle/JSS, secondary/SSS, or higher</p>	<p><b>V106:</b> No education Primary, secondary, higher</p>	<p>No Education = 1                  Primary = 2                  Secondary = 3                  Higher = 4</p>
<p><b>9. Wealth Index:</b> Measures how wealthy respondent is</p>	<p>A combination of TV, bicycle, type of housing material, access to potable water and sanitation</p>	<p><b>V109:</b> Poorest, Poorer, Middle, Richer, Riches</p>	<p>Poorest =1, Poorer = 2 Middle=3, Richer = 4 , Richest =5</p>
<p><b>Dependent variable</b>                  Current contraceptive use                  Currently non use = 1                  Currently Using = 2</p>	<p><b>310:</b> Are you currently doing something or using any method to delay or avoid getting pregnant?</p>	<p><b>V312:</b> Current contraceptive method. No method, Folkloric, Traditional, Modern method</p>	<p>No method+ Folkloric+ Traditional = <b>Current non use</b>=1                  Modern Method=<b>current use</b> =2</p>

### 3.7 Data Analysis

For each set of data, contraceptive use was analyzed as:

1. All women currently using any modern contraceptive method.
2. All women currently **not** using a modern contraceptive method.

The dependent variable is a dichotomous response variable that was assigned the value 2 if the respondent was using any contraceptive method and 1 if not using any method (NO =1, YES =2).

Three separate analyses were performed. The first was univariate analysis. Simple frequencies of both the dependent and independent variables were run to find out the various distributions of these variables. Range was used to describe data for continuous variables.

The second was bivariate analysis. A cross tabulation of each demographic, socio-economic and socio-cultural variable by contraceptive use was done. Chi-square was used to test for associations between each variable and current contraceptive use. Contraceptive users and non users were compared based on demographic factors, socio-cultural and socio-economic factors.

The third was multivariate analysis. Simple logistic regression analysis was first done to obtain unadjusted odds ratios of contraceptive use for each variable. This was done by using odds ratios and their associated 95% confidence intervals (95% CI) were used to assess the strength of these associations. At the multivariate level, multiple-variate logistic regression models were used to obtain adjusted odds ratios at 95% confidence level so as to determine the variables that best predict use of contraceptives. The significant predictors of modern contraceptive use were compared across the three waves of data to establish trends.

A p-value of  $<0.05$  was used to determine statistical significance in each of the statistical tests performed. All analyses were done using Statistical Package for Social Scientist (SPSS) version 16.0.

Chi square test was used to determine whether there is a significant difference across the two groups. That is contraceptive users and non users. Odds ratio was used to determine how exposure by women to the various independent variables affects their use of modern contraception. Since the dependent and independent variables were categorical i.e. current use of modern contraceptives versus current non use of modern contraceptives, binary logistic regression was used. Simple regression was used to obtain unadjusted odds ratio for each variable. This was done to ensure that there was no contribution (effect) from any other variable.

Multiple regressions were used to obtain adjusted odds ratios.

Since the variables were many, adjusted odds ratios were used to determine the variables that best predicted contraceptive use over the years. This was done by controlling for other possible contributions from other variables in the model.

### **3.8 Limitations of the study**

Some of the variables that were compared were not in all the three sets of data. For instance, partner communication about contraceptive use and husband's approval of contraception were not in the 2008 data set. Also wealth index was absent in the 1998 data set. This did not allow for comparison of these variables for the period studied.

## **CHAPTER FOUR**

### **4.0 RESULTS**

This chapter presents the results of the study which is organized into five sections. Sections 4.1.0 describe the background characteristics of the respondents using the three sets of data: 1998, 2003 and 2008. Section 4.2.0 describes the results for the socio-demographic and socio-cultural characteristics by current contraceptive use. Section 4.3.0 compares crude odds ratios of the three data sets together. Section 4.4 compares the adjusted odds ratios across the years, while section 4.5.0 summarizes the trends across the years. The same variables were used to analyze the data for each year except where a particular variable was not available in the data set. For instance in 1998, wealth index was not analyzed because it was not available in the dataset and could not be calculated. Similarly, in 2008, husband's approval of contraceptives and discussion of family

planning among partners was also not available to be analyzed. There was one dependent variable, current use of modern contraceptives. The independent variables which were mainly socio-demographic variables are: age, marital status, place of residence, fertility preference, parity, educational level, wealth index husband's approval of family planning, and discussion about family planning with partner.

#### **4.1.1 FINDINGS FROM 1998-2008 GDHS.**

##### **4.1.1 Background characteristics of Respondents.**

In 1998, the total number of respondents (all women) was 4843 with mean age of 29.31 years ( $SD = 9.6$ ). Their median and age range was 28 years and 15 to 49 years respectively. For the year 2003, the total number of women (all women) was 5,691 with mean age of 29.3 years ( $SD = 9.6$ ). Their median and age range was 28 years and 15 to 49 years respectively. The total number of all women in 2008 was 4,916 with mean age of 29 years ( $SD=9.6$ ). They ranged in age from 15-49 years with median age of 29 years.

From table 2, it can be observed that from 1998-2008, respondents who were married were more than those who were not married. Respondents with primary and higher education were a little less 2293(47.3%) than those with primary and no education 2551(52.7%). On the other hand,

those with secondary and higher education became more than those with primary and no education. For 1998 women with secondary and higher education were 2293(52 %) while those with primary and no education were 2551(47.3%). More than half 2978 (61.5%) of the women were married while 1865(38.5) were not married. Likewise in 2008, women with secondary and higher education were 2670 (54.3%) while those with primary and no education were 2,242 (45.6%).

In 1998, 490(10.4%) of the respondents who were current users of modern contraceptive methods and in 2003, 842(14.8%) of respondents were currently using modern contraceptives. In 2008, 633(13.5%) of respondents were current users of modern contraceptive methods.

**TABLE: 2 PERCENTAGES OF ALL WOMEN CURRENTLY USING ANY**

DEMOGRAPHIC CHARACTERISTICS	CURRENT USE	CURRENT NON-USE	p value	CURRENT USE	CURRENT NON-USE	p value	CURRENT USE	CURRENT NON-USE	p value
<b>YEAR</b>	<b>1998</b>			<b>2003</b>			<b>2008</b>		
<b>TOTAL NUMBER</b>	<b>N= 4843</b>			<b>N= 5691</b>			<b>N= 4916</b>		
<b>N (%)</b>	<b>490(10.4)</b>	<b>4353(89.6)</b>		<b>842(14.8)</b>	<b>4849(85.2)</b>		<b>663(13.5)</b>	<b>4253 (86.5)</b>	
<b>AGE</b>									
15-19	39(8.0)	850(19.5)	< 0.001	72(8.6)	1041(21.5)	< 0.001	56(8.4)	981(23.1)	< 0.001
20-24	85(17.3)	802(18.4)		151(17.9)	846(17.4)		132(19.9)	737(17.3)	
25-29	99(20.2)	758(17.4)		170(20.2)	796(16.4)		124(18.7)	693(16.3)	
30-34	81(16.5)	580(13.3)		155(18.4)	663(13.7)		115(17.3)	521(12.3)	
35-39	88(18.0)	539(12.4)		137(16.3)	587(12.1)		113(17.0)	524(12.3)	
40-44	63(12.9)	421(9.7)		102(12.1)	470(9.7)		78(11.8)	407(9.6)	
45-49	35(7.1)	403(9.3)		55(6.5)	446(9.2)		45(6.8)	390(9.2)	
<b>EDUCATIONAL LEVEL</b>									
NO EDUCATION	123(25.0)	1614(37.1)	< 0.001	195(23.2)	1722(35.5)	< 0.001	135(20.4)	1108(26.1)	< 0.001
PRIMARY	82(16.7)	731(16.8)		173(20.5)	939(19.4)		137(20.7)	862(20.3)	
SECONDARY	265(54.1)	1923(44.2)		439(52.1)	2079(42.9)		362(54.8)	2127(50.0)	
HIGHER	20(4.1)	85(2.0)		35(4.2)	109(2.2)		27(4.1)	154(3.6)	
<b>MARITAL STATUS</b>									
NOT MARRIED	336(11.3)	1711(91.7)	< 0.001	244(29.0)	1890(39.0)	< 0.001	377(56.9)	1984(46.6)	< 0.001
MARRIED	2642(88.7)	154(8.3)		598(71.0)	2959(61.0)		286(43.1)	2269(53.4)	
<b>PLACE OF RESIDENCE</b>									
URBAN	206(42.0)	1379(31.7)	< 0.001	411(48.8)	1963(40.5)	< 0.001	301(45.5)	1861(43.8)	0.428
RURAL	284(58.0)	2974(68.3)		431(51.2)	2886(59.5)		362(54.6)	2392(56.2)	

<b>WEALTH INDEX (%)</b>									
POOREST				126(15.0)	1213(25.0)		112(16.9)	977(23.0)	
POORER	-----	-----	-----	152(18.1)	847(17.5)		122(18.4)	799(18.8)	
MIDDLE				146(17.3)	844(17.4)	< 0.001	127(19.2)	770(20.3)	0.006
RICHER				175(20.8)	905(18.7)		159(24.0)	865(19.8)	
RICHEST				243(28.9)	1040(21.4)		143(21.6)	842(19.9)	
<b>PARITY</b>									
0-3CHILDREN	259(52.9)	2942(67.6)		484(57.5)	3328(68.6)		407(61.4)	3051(71.7)	
4 AND ABOVE	231(47.1)	1411(32.4)	< 0.001	358(42.5)	1521(31.4)	< 0.001	256(38.6)	1202(28.3)	< 0.001
<b>HUSBAND'S APPROVAL OF FAMILY PLANNING</b>									
APPROVES	341(93.2)	1272(70.8)		592(93.7)	1741(72.0)				
DISAPPROVES	25(6.8)	527(29.3)	<0.001	40(6.3)	677(28.0)	< 0.001	-----	-----	-----
<b>DISCUSSED FAMILY PLANNING WITH PARTNER</b>									
NEVER DISCUSSED	55(13.9)	513(18.1)		98(15.0)	447(14.8)				
ONCE OR TWICE	119(30.0)	678(24.0)	< 0.001	270(41.3)	1050(34.8)	<0.001	-----	-----	-----
MORE OFTEN	223(56.2)	1638(57.9)		285(43.6)	1518(50.3)				
<b>FERTILITY PREFERENCE</b>									
NO MORE	210(42.9)	1211(27.8)		323(38.4)	1314(27.1)		248(37.5)	1080(25.2)	
UNDECIDED	16 (3.3)	305(7.0)		24(2.9)	178(3.7)	< 0.001	18(2.7)	310(7.6)	
HAVE ANOTHER	264(53.9)	2834(65.2)	< 0.001	495(58.8)	3356(69.2)		396(59.8)	2853(67.2)	< 0.001

**CONTRACEPTIVE METHOD BY SELECTED DEMOGRAPHIC, SOCIO-CULTURAL AND SOCIO-ECONOMIC CHARACTERISTICS GDHS. 1998-2008**

#### **4.2 Current Use of Modern Contraceptives, 1998-2008.**

Table 2 shows the results for selected socio-demographic characteristics by current contraceptive use. Chi-square test, showed a positive association between all the selected socio-demographic characteristics and current contraceptive use except place of residence.

As women attain higher educational level, use of modern contraception increased among them. Women with secondary education had the highest prevalence of modern contraceptive use. Similarly, as frequency of discussion of family planning among partners increased, use of modern contraception increased across the years; 1998-2008 (Table 2). As wealth index increased from poorest women to richest women, current contraceptive use generally increased from 2003-2008. However, in 2003, poorer women who were current users of modern contraceptives where a little more (18.1% and 17.3%) than richer women who were using

contraception. Likewise, in 2008, richer women using modern contraceptive methods were more than richest women (Table 2).

The percentage of current users whose husband's approved of family planning was more than those whose husbands did not approve from 1998-2003. Percentage of rural women who were not current users was more than urban women who were not doing the same across the years.

Similarly, percentage of women with no or up to three children who were using contraception were more than those with children four and above who current users.

DEMOGRAPHIC CHARACTERISTICS	CRUDE ODDS RATIO (95% CI)	P VALUE	CRUDE ODDS RATIO (95% CI)	P VALUE	CRUDE ODDS RATIO (95% CI)	P VALUE
<b>YEAR</b>	<b>1998</b>		<b>2003</b>		<b>2008</b>	
<b>AGE</b>						
15-19	1.00		1.00		1.00	
20-24	*2.31(1.56-3.42)	<0.001	*2.581(1.92-3.47)	<0.001	*3.14 (2.26-4.35)	<0.001
25-29	*2.85(1.94-4.18)	<0.001	*3.088(2.31-4.13)	<0.001	*3.13(2.25-4.36)	<0.001
30-34	*3.04(2.05-4.52)	<0.001	*3.380(2.51-4.55)	<0.001	*3.87(2.76-5.41)	<0.001
35-39	*3.56(2.40-5.27)	<0.001	*3.374(2.49-4.57)	<0.001	*3.78(2.70-5.29)	<0.001
40-44	*3.26(2.15-4.94)	<0.001	*3.138(2.28-4.32)	<0.001	*3.36(2.34-4.82)	<0.001
45-49	*1.89(1.18-3.03)	0.008	*1.783(1.23-2.58)	0.002	*2.02(1.34-3.04)	<0.001
<b>EDUCATIONAL LEVEL</b>						
NO EDUCATION	1.00		1.00		1.00	
PRIMARY	*1.50(1.098-1.973)	<0.001	*1.63(1.31-2.03)	<0.001	*1.30(1.01-1.68)	0.040
SECONDARY	*1.81(1.446-2.262)	<0.001	*1.91(1.56-2.23)	<0.001	*1.41(1.13-1.72)	0.002
HIGHER	*3.09(1.835-5.196)	<0.001	*2.84(1.91-4.37)	<0.001	*1.44(1.16-2.25)	0.010
<b>MARITAL STATUS</b>						
NOT MARRIED	1.00		1.00		1.00	
MARRIED	*1.41(1.157-1.73)	<0.001	*1.61(1.33-1.84)	<0.001	*1.51(1.31-1.81)	<0.001

<b>PLACE OF RESIDENCE</b>						
RURAL	1.00		1.00		1.00	
URBAN	<b>*1.56(1.293-1.892)</b>	<0.001	<b>*1.402 (1.21-1.62)</b>	<0.001	<b>1.07 (0.91-1.42)</b>	0.31
<b>PARITY</b>						
0-3 CHILDREN	1.00		1.00		1.00	
4 AND ABOVE	<b>*1.86(1.540-2.245)</b>	<0.001	<b>*1.62(1.39-1.88)</b>	<0.001	<b>*1.60 (1.35-1.89)</b>	<0.001
<b>HUSBAND'S APPROVAL OF FAMILY PLANNING</b>						
DISAPPROVES	1.00		1.00		-----	-----
APPROVES	<b>*5.65(3.72-8.61)</b>	<0.001	<b>*5.80(4.13-8.02)</b>	<0.001		
<b>WEALTH INDEX (%)</b>						
POOREST			1.00		1.00	
POORER			<b>*1.73(1.34-2.22)</b>	<0.001	<b>*1.33(1.01-1.75)</b>	0.040
MIDDLE	-----	-----	<b>*1.67(1.29-2.15)</b>	<0.001	<b>*1.44(1.10-1.89)</b>	0.009
RICHER			<b>*1.86(1.46-2.38)</b>	<0.001	<b>*1.60(1.24-2.08)</b>	<0.001
RICHEST			<b>*2.25(1.79-2.83)</b>	<0.001	<b>*1.48(1.14-1.93)</b>	0.004
<b>DISCUSSED FAMILY PLANNING WITH PARTNER</b>						
NEVER	1.0		1.0		-----	-----
ONCE OR TWICE	<b>*5.20 (3.75-7.28)</b>	<0.001	<b>*4.20(3.30-5.36)</b>	<0.001		
MORE OFTEN	<b>*12.56 (9.48-7.67)</b>	<0.001	<b>*9.41(7.26-12.06)</b>	<0.001		
<b>FERTILITY PREFERENCE</b>						
NO MORE	1.00		1.00		1.00	
UNDECIDED	<b>*0.33(0.19-0.56)</b>	<0.001	<b>*0.62(0.39-.96)</b>	0.034	<b>*0.29(0.18-0.48)</b>	<0.001
HAVE ANOTHER	<b>*0.58(0.47-0.71)</b>	<0.001	<b>*0.67(0.57-0.80)</b>	0.001	<b>*0.70(0.58-0.84)</b>	<0.001

**TABLE 3: CHARACTERISTICS RELATED TO CURRENT CONTRACEPTIVE USE  
AMONG ALL WOMEN, GDHS, 1998-2008**

### 4.3 Analysis for Current Contraceptive Use 1998-2008

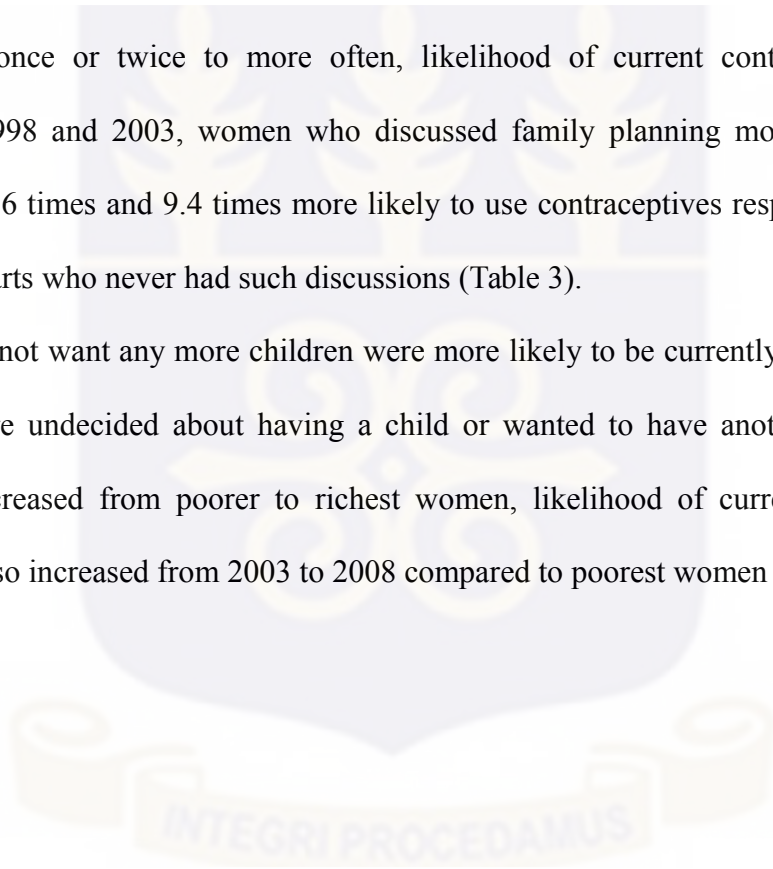
Table 3 has the results for the bivariate analysis for current contraceptive use among women from 1998-2008. Simple regression for current contraceptive use showed a significant increase in odds of use of modern contraception for all age groups compared to age group 15-19 years. Thereafter, there was a decline in odds of use for women in the age groups 40-44years and 45-49 years. The women in age group 30-34 years had the highest odds of being currently on modern methods. There was a significant decline in odds of use for age group 45-49 years (Table 3).

As level of education goes higher for Ghanaian women from primary through secondary to higher education, there was consistent increase in likelihood of contraceptive use for the period studied. This was also statistically significant from the year 1998 to 2008 (Table 3). Women who were not married and did not want any more children were more likely to be currently on modern

method(s) compared to unmarried women who were undecided about having a child or wanted to have another child. Urban women were more likely to use contraception compared to rural women (Table 3). Women with four or more children were more likely to use contraceptives compared to those with no children or up to three children.

From 1998-2003, women whose husbands approved of family planning were 5.7 times and 5.8 times more likely to use contraceptives compared to their counterparts whose husbands did not approve of use. Likewise, from 1998-2003, as frequency of discussion of family planning increased from once or twice to more often, likelihood of current contraceptive use also increased. In 1998 and 2003, women who discussed family planning more often with their partners were 12.6 times and 9.4 times more likely to use contraceptives respectively compared to their counterparts who never had such discussions (Table 3).

Women who did not want any more children were more likely to be currently on method(s) than women who were undecided about having a child or wanted to have another child. Also, as wealth index increased from poorer to richest women, likelihood of current use of modern contraceptives also increased from 2003 to 2008 compared to poorest women (table 3).



**TABLE 4: PREDICTORS OF CURRENT USE OF ANY MODERN CONTRACEPTIVE METHOD AMONG ALL WOMEN GDHS, 1998-2008**

DEMOGRAPHIC CHARACTERISTICS	ADJUSTED ODDS RATIO (95% CI)	P VALUE	ADJUSTED ODDS RATIO (95% CI)	P VALUE	ADJUSTED ODDSRATIO (95% CI)	P VALUE
<b>YEAR</b>	<b>1998</b>		<b>2003</b>		<b>2008</b>	
<b>AGE</b>						
15-19	1.00		1.00		1.00	
20-24	1.02(0.49-2.15)	0.952	1.26(0.65-2.42)	0.498	<b>*2.46(2.11-4.10)</b>	<0.001
25-29	1.06(0.53-2.25)	0.754	1.27(0.67-2.44)	0.464	<b>*2.56(2.19-4.16)</b>	<0.001
30-34	1.12(0.61-2.45)	0.757	1.35(0.69-2.62)	0.380	<b>*2.74(1.87-4.67)</b>	<0.001
35-39	1.10(0.58-2.31)	0.899	1.22(0.61-2.43)	0.571	<b>*2.42(1.62-3.60)</b>	<0.001
40-44	0.74(0.32-1.70)	0.473	1.08(0.53-2.22)	0.829	<b>*1.35(1.11-2.68)</b>	0.015
45-49	0.44(0.18-1.10)	0.080	0.52(0.24-1.13)	0.098	0.79(0.47-1.32)	0.362
<b>EDUCATIONAL LEVEL</b>						
NO EDUCATION	1.00		1.00		1.00	
PRIMARY	1.200( 0.827- 1.742)	0.338	<b>*1.350(1.022-1.783)</b>	0.035	<b>*1.505(1.15-1.98)</b>	0.003
SECONDARY	1.236(0.907- 1.684)	0.179	<b>*1.349(1.044-1.743)</b>	0.022	<b>*1.786(1.38-2.32)</b>	<.001
HIGHER	2.067(0.998- 4.278)	0.050	<b>*2.067(1.113-3.840)</b>	0.022	<b>*1.630(1.41-2.71)</b>	0.036
<b>MARITAL STATUS</b>						
NOT MARRIED	1.00		1.00		1.00	
MARRIED	<b>*0.71 (0.52-0.98)</b>	0.035	0.82(0.61-1.10)	<0.19	0.88(0.72-1.11)	0.211

<b>PLACE OF RESIDENCE</b>						
RURAL	1.00		1.00		1.00	
URBAN	<b>*1.4(1.075-1.82)</b>	0.012	1.31(0.98-1.75)	<0.065	0.89 (0.71-1.17)	0.311
<b>WEALTH INDEX (%)</b>						
POOREST			1.00		1.00	
POORER	-----	-----	1.31(0.95-1.76)	0.101	1.21 (0.90-1.62)	0.202
MIDDLE			1.12(0.80-1.57)	0.513	1.36 (1.10-1.90)	0.051
RICHER			1.11(0.74-1.64)	0.611	<b>*1.50 (1.07-2.11)</b>	0.019
RICHEST			1.45(0.96-2.23)	0.074	1.41 (0.98-2.02)	0.064
<b>PARITY</b>						
0-3 CHILDREN	1.00		1.00		<b>1.00</b>	
4 AND ABOVE	<b>*2.241 (1.58-3.17)</b>	<0.001	<b>*1.67(1.28-2.20)</b>	<0.001	<b>*1.70(1.30-2.17)</b>	<0.001
<b>HUSBAND'S APPROVAL OF FAMILY PLANNING</b>						
DISAPPROVES	1.00		1.00		-----	-----
APPROVES	<b>*2.84(1.80-4.48)</b>	<0.001	<b>*3.41(2.38-4.84)</b>	<0.001		
<b>DISCUSSED FAMILY PLANNING WITH PARTNER</b>						
NEVER	1.00		1.00		-----	-----
ONCE OR TWICE	<b>*2.39(3.12-3.12)</b>	0.001	<b>*2.45(1.8-3.26)</b>	<0.001		
MORE OFTEN	<b>*6.72(4.42 -10.22)</b>	<0.001	<b>*4.81(3.60-6.47)</b>	<0.001		
<b>FERTILITY PREFERENCE</b>						
NO MORE	1.00		1.00		1.00	
UNDECIDED	0.77(0.361-1.64)	0.500	0.83(0.45-1.53)	0.553	<b>*0.36(0.21-0.87)</b>	<0.001
HAVE ANOTHER	1.18 (0.86- 1.62)	0.313	0.95(0.74-1.21)	0.676	<b>*0.83(0.41-0.82)</b>	0.013

\* = Predictors

#### 4.4 Multivariate Analysis for current use of modern contraception, 1998-2008

Table 4 shows the results for multivariate analysis. From 1998 to 2003, multiple regression analysis for current contraceptive use showed an increase in odds of current use of modern contraception for all age groups compared to age group 15-19 years. Conversely, age group 45-49 years had reduction in odds of use of modern contraceptives. The women in age group 30-34 years had the highest odds of being currently on modern methods. This was not statistically significant across the years with the exception of the year 2008 where age group 20- 44 years was statistically significant (Table 4).

There was also significant difference across the groups from 1998-2008 such that women who were currently using modern methods were better educated, lived in urban areas and had more children than those who were not currently using contraceptives (Table 4). In 1998, marital

status, place of residence, parity, husband's approval of family planning and discussion of family planning among partners were significant predictors of modern contraceptive use. However from 2003 to 2008, marital status and place of residence, no longer significantly predicted current contraceptive use. In 1998, formal education was not a significant predictor of current contraceptive use but significantly predicted use of contraception in 2003 and 2008. Richer women who were married and did not want any more children were more likely to be currently using modern method(s) than poorer married women who were undecided about having children or wanted another.

Multivariate analysis also showed that parity, husband's approval of family planning, and discussion of family planning among partners were significant predictors across the years when the variables were compared. Formal education was a significant predictor from 2003 to 2008. Age, marital status, wealth index and fertility preference were not significant predictors of current contraceptive use across the years. Wealth index was a significant predictor of contraception for women in the richer quintile only compared to women in the poorest quintile = (OR=1.5; CL=1.7-2.11). Marital status and place of residence were also not significant predictors of current contraceptive use from 2003 to 2008 (Table 4).

#### **4.4.1 Trends and Relative Strength of Predictors (Current Contraceptive Use), 1998-2008.**

For the period studied, women in the oldest age group, 40 -49 years were consistently less likely to be currently using modern contraceptives (table 4). The results showed that, from 1998 -2008, contraceptive prevalence was high among women between the ages of 20-39 years compared to age group 15-19 years. Women in age group 30-34 years had the highest likelihood of currently

using modern contraceptives (Table 4). In 2008, age group 20-39 years significantly predicted current use of modern methods among Ghanaian women compared to age group 15-19 years apart from age group 40-49 years (table 4).

Compared to women with no formal education, formally educated women had increase in odds of currently using modern contraceptive methods from primary level to tertiary level. For women who have attained tertiary level of education, their odds decreased from 2003-2008 ; { 2.067(CI= 0 .998- 4.278)} to {1.630(CI 0.97-2.71)} respectively. For women with secondary level of education there was increase in odds of current use of modern contraception and this was consistent from 2003 to 2008 ;1.349( CI= 1.044-1.743) to 1.786(CI= 1.38-2.32) respectively. This was also consistently becoming more significant (Table 4).

Similarly, the odds of current use by women whose husbands approved of family planning increased from 2.84 (CI= 1.80-4.48) in 1998 to 3.38 (CI= 2.37-4.82) in 2003 (table 4). In 1998, women who discussed family planning with partners were 6.72 (CI= 4.42 -10.22) more likely to be using modern contraceptives compared to those who had no discussions with their partners. However, their odds ratio reduced to 4.82(CI= 3.59-6.47) in 2003 but was still statistically significant (table 4).

From table 4, the study showed that place of residence was a significant predictor of current contraceptive use only in 1998 for women who dwell in urban areas compared to their counterparts in rural areas (OR= 1.41; CI=0.075-1.82). Wealth index was a significant predictor in 2008 for women in the richer quintile only.

Though parity was a significant predictor of current contraceptive use by Ghanaian women with children four and above compared to women with none or up to three children, the odds ratio

reduced from 2.241 (CI= 1.58-3.17) in 1998 to 1.66 (CI= 1.27-2.16) in 2003 with slight increase 1.70 (CI= 1.30-2.17) in 2008. This was still highly significant (Table 4).

Likewise, husband's approval of family planning was associated with contraception in 1998 and 2003; also educational status increased the likelihood of contraceptive use among Ghanaian women from 2003 and 2008. Parity of four or more children increased the likelihood of contraceptive use in all surveys.

There were changes in the predictors of modern contraception between 1998 and 2008. Age and fertility preference which were not predictors in 1998 and 2003 predicted modern contraception in 2008 except for age group 45-49 years. Place of residence and marital statuses which were predictors in 1998 no longer predicted modern contraceptive use in 2003 and 2008. Educational status which was not a predictor in 1998 predicted modern contraception in 2003 and 2008 (Table 4).

Parity, husband's approval of family planning and discussion of family planning among partners predicted modern contraception in all the surveys. Wealth index did not predict contraception except women in richer quintile in 2008 only. The strongest predictor was discussion of family planning among partners followed by husband's approval of family planning, parity and educational status (Table 4).



## **CHAPTER FIVE**

### **5.0 DISCUSSION**

This chapter is devoted to discussions, conclusion and recommendations made based on the findings of the study. It discusses and relates the findings of this study to results obtained from other authors. The results from multiple regression analysis of selected socio-demographic characteristics of data from Ghana Demographic and Health Survey, 1998 - 2008 have been discussed under the following headings; current contraceptive use, discussion of family planning

among partners, husband's approval of family planning, level of education, number of children ever had as well as trends and relative strength of predictors.

### **5.1 Current Contraceptive Use**

In 1998, 490(10.4%) of the respondents who were current users of modern contraceptive methods and in 2003, 842(14.8%) of respondents were currently using modern contraceptives. In 2008, 633(13.5%) of respondents were current users of modern contraceptive methods. Compared to currently married women the prevalence of current use across the years was slightly lower; 13.3%, 18.7% and 16.7% respectively. Likewise, compared to sexually active unmarried women the prevalence for 2003 and 2008 is much lower; 31.3% and 33.88% respectively. This is because the denominators for each survey for this study were all women which are higher than that for currently married women and much higher than that of sexually active unmarried women across the years.

### **5.2 Communication among couples (Discussion about Family Planning)**

The present study found that discussion of family planning among partners was a significant predictor of modern contraceptive use in Ghana. For instance, compared with couples who had never discussed family planning, those who discussed often were almost seven times (1998) and five times (2003) more likely to be current users of contraception (Tables 4). This finding is consistent with a previous study in Northern Ghana and Tanzania which revealed that husband-wife communication about family planning strongly predicted modern contraceptive use (Bawa,

2002 and Mosha et al., 2014). The author in Ghana found that the prevalence of modern contraceptive use was 16.4% among couples who discussed family planning while those who did not discuss had a prevalence of 7.8% while the author in Tanzania observed that discussion among partners always improved family planning use. Similarly, Cox et al., (2013) studied the effect of quality of relationship and constructive communication on contraceptive use in Kumasi, Ghana.

Data from the 2010 Family Health and Wealth Survey was used for the analysis and the results showed that couples who experienced good quality relationship and engaged in constructive communication reported higher prevalence of contraceptive use compared to their counterparts whose communication was not effective. Ogunjuyigbe et al. (2009) in Nigeria also reported that couples who took joint decisions concerning child bearing were more likely to use contraceptives than those who took individual decisions. Among adolescents in Kintampo, Ghana communication was found to be significantly associated with contraceptive use. Also adolescents who discussed contraceptive use prior to their first sexual experience were likely to use family planning methods compared to those who did not discuss (Boamah et al., 2014). Among high school students in Tanzania and South Africa, similar results were obtained in a study by Namisi et al., (2013) who analyzed the effect of high school students who communicated with adults about sexuality and condom use. Those who communicated well consistently used condoms.

When partners communicate, they are able to arrive at a decision concerning the number of children they want to have. Before discussion, fertility preference may be high but knowledge and attitude concerning universal desire for small family size will be transferred after discussion. They will also be able to seek assistance together from a service provider or access more information on modern methods and arrive at a decision concerning their preferred method.

Women will also find it easier to seek approval from their husbands after discussion (Link et al., 2009). Partners who have discussion about family planning are also more likely to talk about risky sexual behaviours and negotiate for safe sex (FHI, 1996 and Adu –Mireku, 2003). These strong positive effects of partner communication can increase the couple's likelihood of using modern contraceptives more than those who do not discuss.

### **5.3 Husband's Approval and Contraceptive Use**

In many African countries including Ghana, men wield considerable power and influence, particularly in household decision-making (Schuler et al., 2011). Thus in marital affairs, men exercise their dominance and critical decisions emanate from or need their approval, including decision on family planning. Though men involvement in family planning programmes is a challenge; not as significant as female involvement Adelakan et al., (2014), decision making concerning number of children a couple will have, spacing, contraception and payment of reproductive health services is highly dependent on men among couples in Ghana and other parts of Sub-Saharan Africa (Mosha et al., 2013 and Derose et al., 2004). This has been confirmed in this study. Husband's approval of family planning significantly predicted current use of modern contraceptives such that women whose husbands approved of family planning were about 3 times more likely to be current users of contraception in 1998; AOR = 2.8, 95% CI = 1.80-4.48 and 2003; AOR = 3.4, 95% CI = 2.37-4.82 (Tables 4 ). This shows that husbands' approval of modern contraceptive use is very crucial for the success of family planning interventions. This finding is similar to results obtained from a study in the northern part of Volta region, Ghana. This was a case control study on determinants of contraceptive use in the Nkwanta District

which showed that; women whose husbands approve of family planning were almost five times more likely to use modern contraceptives compared to their counterparts whose husband's did not approve (Eliason et al., 2014). This finding is also consistent with other studies by (Kulczycki, 2008) who reported husbands' approval was a strong predictor of modern contraceptive use. This suggest that women whose husbands are in agreement with their wives usage of modern contraceptives are likely to use than their counter parts whose husbands do not approve contraceptive use. The intention of pregnant women to use postpartum family planning was studied in a rural district in Ghana. More than 80% found postpartum family planning acceptable; however their intention to adopt postpartum family planning was highly dependent on their husband's acceptance (Eliason et al., 2013).

In another study, Stephenson et al., (2007) assessed the role of community level factors on modern contraceptive use in six African countries including Ghana, and reported that respondents whose husbands approved of contraceptive use were about 4 times more likely to use contraception compared those whose husbands did not allow them. In the Northern region of Ghana, Adongo et al., (2014) also observed that Community-Based Health Planning and Services (CHPS) that involved men in family planning programmes had improvement in contraceptive use and fertility decline. Similar studies in other African country like Kenya conducted by Asharaf et al., 1997 and Ankoma et al., 2014), found that a wife's perception of her husband's approval of family planning increases her chances of using contraception (odds ratio of 4.2) compared to those whose husband's disapproved or respondents who perceived that their spouse will disapprove of their usage. The possible underlying reason for this finding is that men are usually the heads of families and studies have shown that men want more children than females and they take the final decision concerning the number of children the couple must have

(GSS et al., 2009). When husbands approve of family planning, their wives would be encouraged to visit family planning clinics. Clandestine usages by women which arise when their husbands do not approve of contraception will also reduce. It is also possible that when husbands approve of contraceptive use, women who are not in the position to purchase a commodity can easily get financial assistance from their husbands to buy a product. Husbands will also support their wives when they experience side effects and even help them to adhere to regimen (FHI, 2009). The above mentioned ways through which women can be assisted to practice contraception by their husbands contribute to making husbands approval a very strong predictor.

#### **5.4 Formal Education and Contraceptive Use**

In this study, female education was found to significantly promote modern contraceptive use from 2003 to 2008. This was confirmed in the Accra Women's Health Survey conducted in 2003. This survey looked at the predictors of modern contraceptive use in Accra, Ghana. The result showed that respondents with no formal education had 66% reduction in the odds currently using contraception and 48% reduction in the odds of ever using modern contraception compared with their counterparts with formal education (Adanu et al., 2009).

In Nigeria, a survey by Okezie et al., (2010) conducted to find the determinants of modern contraceptive use also showed that women with formal education were 3.2 times more likely to use contraception than those with no education. Women with higher education appreciate more the advantages of having fewer and well educated children than those without education. They will also want to spend quality time with their children.

Educated women also have career opportunities which they will want to seize and develop to the highest level. Moreover, they are more likely to be formally employed and hence have maternity

leave restrictions and will therefore want to use modern contraceptives to space and limit children. Improved socio-economic status of women due to formal education makes them want to spend quality time on social events and leisure which large family size will not permit them to do (Ayoub, 2004 and Gordon, 2011). Their social and economic empowerment will make them less dependent on their husband concerning making healthy decisions about fertility preferences. Additionally, educated women have increased access to information on modern methods as well as increased geographical and financial access to family planning services (Kamla-Raj, 2010; Ali et al., 2004; and Khan, 1997).

Furthermore, educated women are also able to pick methods with fewer side effects because they have higher knowledge about the methods and are in a better position to manage side effects when they are on a method (Gordon et al., 2011). Women with no formal education may not appreciate the opportunity cost of large family size over career progression, the benefits of quality child rearing and improved social life and hence will not be bothered about using modern methods to both limit and space children. These are some of the reasons why educated women have increased odds of modern contraceptive use compared to those with no formal education.

### **5.5 Number of Children Ever Had and Contraceptive Use**

The present study revealed that women with four or more children were more likely to use contraceptives than those with fewer children (up to a maximum of three). This finding is consistent with a survey by Shehaa et al., (2010) in Saudi Arabia in which the relationship between parity and modern contraceptive use was examined. It was found that women with seven or more children use more contraceptives than those with three or four children. Similarly, in Palestine Madi et al., (1997) reported that the higher the number of children, the higher the prevalence of contraceptive use.

Taking into consideration the total fertility rate of 4.0, women with four or more children might have reached their ideal family size and will want to limit children (GSS et al., 2004 and 2009). They may also have had complications related to pregnancies and deliveries which will make them visit reproductive and child health facilities during pregnancy, delivery and postpartum (Hogue et al., 2008). This will give them the opportunity of being educated on the dangers associated with unregulated childbearing, the advantages of family planning, and exclusive breast feeding (lactational amenorrhea) which also has another benefit as a modern method of contraception (Agho et al., 2011). Additionally some women may also be introduced to other modern family planning methods and those who have complications during delivery may even be provided with long term methods like bilateral tubal ligation, intrauterine device, implants etc before leaving the health facility after delivery. This may in part explain why higher parity women are more likely to use contraceptives. Moreover, women who already have large family sizes and who are bearing the brunt of the social consequences of unregulated childbearing are more likely to accept family planning as a remedy to their predicament. By comparing themselves to women with small family sizes who are better able to care for and educate their children, such women will easily appreciate the benefits of family planning and might want to have no more children. All these are factors contributing to higher contraceptive use among women with more children (Okafor and Akinwale, 2005).

### **5.6 Trends and Relative Strength of the Predictors, 1998- 2008**

Parity was consistently a significant predictor of current contraceptive use for women with children four and above from 1998-2008. This finding is also confirmed in a study by (Okafor

and Akinwale, 2005) in Nigeria and the Ghana Maternal Health Survey 2009. This may be because these when women attain the normative family size of four they tend to stop child bearing because they believe that the number of children they have were necessary to ensure continuation of the lineage (Cadwell, 1999). Some also think that they have had as many children as they believed they could provide for adequately as well as health reasons and partner interactions with fertility preferences ( Kodzi and Johnson,2009; Parr, 2003). Similarly when they are confident about the survival chances of their children (Cleland, 2001 and Bass, 2012) it motivates them to stop having children.

An interesting finding was that place of residence significantly predicted contraceptive use in 1998 only. On the contrary, the same variable was not significant between 2003 and 2008. This may be due to the fact that health education programmes might have reached rural communities. This is an indication that Ghana has progressed very well in reducing rural–urban inequalities in modern contraceptive use to almost zero (Asamoah, 2013). Also increased urbanism could have improved access to family planning messages through mass media may have contributed to bridging the gap between rural and urban dwellers (GSS, et al., 2004 and 2009). Family planning centers might also have increased in rural communities to reduce difficulty in access (Hong et al., 2005 and ICF Macro, 2010). Another similar finding was that from 2003 to 2008, marital status was no longer a significant predictor but was a significant predictor in 1998. However, from 1998 to 2008, married women consistently had reduction in odds of use of modern contraception. This is consistent with the findings of the Ghana Demographic and Health Survey 1998 to 2008 where current contraceptive use among unmarried women was higher than married women. The reason may be that married women may have to discontinue use in order to have children or their husbands may influence them (Do and Kurimoto, 2012).

Formal education was also not a predictor in 1998 but consistently remained a predictor of current use of modern contraceptives from 2003 to 2008. The strength of the predictor increased for women with secondary education from 2003 to 2008 (table 4). This could be attributed to the fact that from 1998 to 2008, the percentage of women who received formal education had increased from 2003 to 2008. This was also true for the number of women with secondary and higher education (GSS, et al., 2004 and 2009). This finding is consistent with the Ghana Maternal Health Survey (2009), which showed that current use of a modern method rises from 10 percent among women with no education to 17 percent among those with at least secondary education.

The likelihood of a woman currently using contraceptives was also significant for women who discussed family planning with their partners and whose husbands approved of contraceptive use. This was also consistent from 1998 to 2003 (Table 4). Since there is a strong association between formal education of men and attitude towards family planning, (Isiugo-Abanih., 1994; Adewuyi and Ogunjuyigbe, 2003). Men's knowledge about modern family planning methods, family planning communication and advantages of having smaller family size which had increased through male centered family planning programmes (GSS and MI, 1999; GSS et al., 2004 and 2009) might have contributed to this.

Furthermore, wealth index was not a predictor for all the quintiles except in 2008 when women in the richer quintile had significant increase on odds of current contraceptive use. Women in the richer quintile had higher education compared to the poorer women (GSS et al., 2004 and 2009). The effect of female education on contraception might have contributed to their increased odds. Also richer women have more power in household decision making and can also afford the cost of contraceptives and other reproductive health services (Do and Kurimoto, 2012).

## **CHAPTER SIX**

### **6.0 CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Conclusion**

The objective of the study was to determine the predictors of modern contraceptive use in Ghana from 1998-2008 among women aged 15-49 years, the changes in the predictors over time and the relative strength of the predictors.

The results showed that, the predictors of modern contraceptive use for the period studied were discussion of family planning among partners, husband's approval of family planning, formal education and parity. The significant predictors of contraceptive use changed with time such that place of residence and marital statuses which were predictors in 1998 did not predict contraceptive use in 2003 and 2008. Similarly, formal education which was not a predictor in

1998 predicted modern contraceptive use in 2003 and 2008. Husband's approval of family planning, communication among couples and parity consistently remained predictors in 1998, 2003 and 2008 respectively. The strongest predictor was communication among partners followed by husband's approval of contraceptives, parity and formal education.

Compared to age group 15-19 years women in older age groups were more likely to use modern methods except from age group 40-45 years where there was a decline in use. A rise in level of education of women increased their likelihood of modern contraceptive use. Richer women who lived in urban areas with children four and above were more likely to use modern methods compared to poorer women living in rural areas with no or up to three children. Women who communicated with their husbands often about family planning and received approval to use modern methods were more likely to use compared to their counterparts who neither had such discussions nor received approval.

Prevalence of modern contraceptive use is low. With increased knowledge of predictors emanating from this study, the following recommendations are being suggested:

## **6.2 Recommendations**

- 1.** Communication skills on how partners initiate and sustain discussions about modern contraceptive use should be included in family planning education programmes.
- 2.** Family planning service providers should address the challenges involved in increasing husband's approval by involving men and adolescents males and females at all levels of family planning programmes such that the culture of men encouraging females to use modern contraceptives is developed from the onset.

3. Family planning service providers should collaborate with Government to integrate in school curricula education on the benefits of family planning.
4. Female education at least up to high school level should be given priority by the Government.

### 6.3 REFERENCES

- [ABDUL-RAHMAN, L.](#), [MARRONE, G.](#) & [JOHANSSON, A.](#) 2011. Trends in Contraceptive Use among Female Adolescents in Ghana. *African Journal of Reproductive Health*, 15, 45-55.
- x [ACHARYA, R.](#) & [SUREENDER, S.](#) 1996. Inter-Spouse Communication, Contraceptive Use And Family Size: Relationship Examined In Bihar And Tamil Nadu. *Journal Of Family Welfare*, 42, 5-11.
- [ACHER, L.](#) 2014. Using Geographic Information System (Gis) Mapping Of Better Health Planing In Binduri District. Accessed On 10/06/2014 from: [arches.columbia.edu/using-geographic-information-system-gis-mapping-..](http://arches.columbia.edu/using-geographic-information-system-gis-mapping-..)
- [ACHEAMPONG, K., D.](#) 2014 Ghana Mineworkers Lose Jobs Along With Falling Gold Price Accessed On 10/06/2014 from [m.silverbirdghana.com/.../701-ghana-mineworkers-lose-jobs-along-with-...](http://m.silverbirdghana.com/.../701-ghana-mineworkers-lose-jobs-along-with-...)

- ADANU, R. M., SEFFAH, J. D., HILL, A. G., DARKO, R., DUDA, R., B. & ANARFI, J., K. 2009. Contraceptive use by women in Accra, Ghana: results from the 2003 Accra. Women's Health Survey. *African Journal of Reproductive Health*, 13, 123-33.
- ADANU, R., M., K., NTUMY, M., N. & TWENEBOAH, E. 2005. Profile Of Women With Abortion Complications In Ghana. *Tropical Doctor*, 35, 139-142.
- ADANU, R., M., HILL, A., G, SEFFAH., J., D, DARKO, R., ANARFI, J., K&DUDA,R., B.2008. Sexually Transmitted Infections And Health Seeking Behaviour Among Ghanaian Women In Accra. *African Journal Of Reproductive Health*. 12, 151-8
- ADEBOWALE, A., S & PALAMULENI, M., E. 2014. Modern Contraceptive Use, Sex Refusal and Spousal Difference in Level of Education among Married Women in Nigeria: Are They Interrelated? *International Journal of Humanities and Social Science*. 4,6
- ADEWUYI, A & OGUNJUYIGBE, P. 2003. The Role Of Men In Family Planning: An Examination of Men's Knowledge and Attitude to Contraceptive Use among The Yorubas. *African Population Studies* 18, 35-49.
- ADELEKAN, A., OMOREGIE, P & EDONI, E. 2014. Male Involvement in Family Planning: Challenges and Way Forward. *International Journal of Population Research*. 9
- ADIBI, M., D., G. 2011. Adolescents' Knowledge And Use Of Contraceptives: A Case Study In Three Selected Senior High Schools In Sekondi-Takoradi Metropolis.
- ADJEI, D., OWUSU, J., SARFO, M & SARFO, I., A (2014). Psychosocial Factors Affecting Contraceptive Usage: A Case of Unmet Needs In Ghana. *European Scientific Journal* May 2014 edition, 10, 15.
- ADONGO, P., B., PHILIPS, J., H. & BINKA, F., N. 1998. The influence of Traditional religion on fertility Regulation on the Kasena Nankana of Northern Ghana. *Studies in family* 29, 23- 24.

- ADONGO, P., B., PHILIPS, J., H., FARYOSEY, C., DEPURR, C. & BINKA, F., N.1997.  
“Cultural Factors Constraining the Introduction of Family Planning Among the Kassena-Nankana of Northern Ghana,” *Social Science and Medicine*. 45, 1789-804.
- ADONGO,P., B., TAPSOBA,P., PHILLIPS,F.,J., TABONG, T.,N.,F.,STONE, A &  
AWENGO,E.,P.2014 " If you do vasectomy and come back here weak, I will divorce you"  
a qualitative study of community perceptions about vasectomy in Southern Ghana." *BM International Health and Human Rights* 14,1.44
- ADU –MIREKU, S. 2003 Family Communication About HIV/AIDS And Sexual Behaviour  
Among Senior Secondary School Students in Accra, Ghana. *African Health Science*. 3, 1.
- AGHA, S., 2000. Is Low Income A Constraint To Contraceptive Use Among The Pakistani
- AGHO K. E.,DIBLEY M. J., ODIASE J., I. & M OGBONMWAN, S. 2011. Determinants  
of Exclusive Breastfeeding In Nigeria.*BMC Pregnancy and Childbirth* 2011, 11-2.
- AJEI, W., K., A. & MIGADDE, M.1995.Demographic and Socio-Cultural Factors  
Influencing Contraceptive Use in Uganda. *Journal Of Biosocial Science*, 1, 47-60.
- AJAO, K., O, OJOFEITIMI1, E.,O, ADEBAYO, A., A, FATUSI1, A., O & AFOLABI, O., T.  
2000. Influence of Family Size, Household Food Security Status, and Child Care Practices  
on the Nutritional Status of Under- five Children in Ile-Ife, Nigeria.*African Journal of  
Reproductive Health* 14, 123-132
- AKAFUAH, R., A.& SOSSOU, M-A. 2008. Attitudes toward and use of knowledge about  
family planning among Ghanaian men.*International Journal of Men's Health*.  
Accessed on 01/ 27 /2013 From: [http://www.thefreelibrary.com/Attitudes toward and use of  
kn...](http://www.thefreelibrary.com/Attitudes_toward_and_use_of_kn...)
- AKWARA, A.,F, AKWARA, N., F, ENWUCHOLA, J, A, M & UDAW, J.,E. 2013.

Unemployment And Poverty: Implications For National Security And Good Governance In Nigeria. *International Journal Of Public Administration And Management Research* ,2,1,

ALI, S., ROZI, S.& MAHMOOD, M., A. 2004. Prevalence and Factors associated practice of modern Contraceptive Methods among currently Married Women in District Naushahro Feroze. *Journal of Pakistan Medical Association*.62,8.

AL SHEEHA, M. 2010. Awareness and use of contraceptives among saudi women attending primary care centers in Al-qassim, saudi arabia. *International Journal Health Science (Qassim)*,4, 11-21.

AMU, N.J.,2006. The Role Of Women In Ghana's Economy.[online]  
Accessed on 01/ 27 /2013 From: <http://library.fes.de/pdf-files/bueros/ghana/02990.pdf>.

ANDERSON,G.,F, FROGNER, B., K, JOHNS R.,A & REINHARDT, W., E.2006. Health Care Spending And Use Of Information Technology In OECD Countries. *Health Affairs* , 25,.3

ANDRZEJ, K. 2008. Husband Wife Aggrement, Power Relations And Contraceptive Uise In Turkey. *International Family Planning Perspectives*, 34, 3.

AGLAH, O., BONKU, E AND WOHLFAHRT, D 2005. Integrating Family Planning Counseling and Services into HIV Care and Treatment Services in Ghana. Accessed On From.28/04/2012 from:[www.popline.org/node/265728](http://www.popline.org/node/265728)

ANKOMAH, A., ANYATI, J., & OLADOSU, M. 2011, Myths, Misinformation And Communication About Family Planning. *Open Access Journal*. Accessed on 01/ 27 /2013 From:[www.doverpress.com/myths-misinforma](http://www.doverpress.com/myths-misinforma).

ANKOMAH, A., ANYANTI J. ADEBAYO,S & GIWA, A. 2014. Barriers to Contraceptive Use among Married Young Adults in Nigeria: A Qualitative Study.*International Journal Of*

*Tropical Disease & Health, 3, 2278 – 1005.*

ANYANWU, J., C. 2013 Marital Status, Household Size and Poverty in Nigeria: Evidence from the 2009/2010 Survey Data. Accessed on 02/103/2014 from: [www.afdb.org/.../Working%20Paper%20180%20-%20Marital%20Status](http://www.afdb.org/.../Working%20Paper%20180%20-%20Marital%20Status).

AREMU, O. 2013. The Influence of Socioeconomic Status on Women's Preferences for Modern Contraceptive Providers in Nigeria: A Multilevel Choice Modeling. *Patient Preference and Adherence, 3*

ARID, S., C. 1999. Ghanas Slave To The god's. The Custom Of Trokosi. Accessed on 01/27/2013 from: [www.wlc.america.edu//ghana.htm](http://www.wlc.america.edu//ghana.htm)

AHMED, S., NORTON, M., WILLIAMS, E., AHMED, S., SHAH, S., BEGUM, N., MUNGIA, J., LEFEVRE, A., AL-KABIR, A., WINCH, P., J., MCKAIG, C & BAQUI, A., H. 2013. Operations Research To Add Postpartum Family Planning To Maternal And Neonatal Health To Improve Birth Spacing In Sylhet District, Bangladesh *Global Health: Science and Practice, 1, 2.*

ARMIN, R. 1998. Contraceptive Use and Desire For More Children In two Rural Districts In Sierra Leon. *Journal of Biosocial Science, 3, 287-296.*

ARTHUR, J., L. 2010. Family Size and Quality of Life Nexus- Case of the Sunyani Municipality, Ghana. Lap Lambert Academic Publishing AG & Co. KG, Germany. Accessed on 20/27/2012 from: <http://www.earthsystemgovernance.org/people/person/jones-lew...>

ARYEETEY, R., KOTOH, A.M., & HINDIN, M. J., 2010. Knowledge, Perceptions and Ever Use of Modern Contraception among Women in the Ga East District, Ghana. *African Journal of Reproductive Health, 14, 27-32.*

- ASAMOAH, B. O., MOUSSA, K. M., STAFSTROM, M., & MUSINGUZI, G. 2011. Distribution Of Causes Of Maternal Mortality Among Different Socio-Demographic Groups In Ghana; A Descriptive Study. *BMC Public Health*, 11, 159.
- ASANTE, A., N. 2014. Obuasi Mine Faces Closure Over 1000 Workers To Be Laid-Off Negotiations Underway To Avert Calamity. Accessed On 20/06/2014  
**From: [hechronicle.com.gh/obuasi-mine-faces-closure-over-1000-workers-to-b...](http://hechronicle.com.gh/obuasi-mine-faces-closure-over-1000-workers-to-b...)**
- ASARE, G., J., Q. 2013. Addressing the Health Needs Of Children And Youths In Ghana. Reproductive and Child Health Unit, Ghana Health Service. Accessed on 01/01/2014 from: **[cepa.org.gh/researchpapers/Addressing70.pd](http://cepa.org.gh/researchpapers/Addressing70.pd)**.
- ASAMOAH, B., O., AGARDH, A & ÖSTERGREN, PER-OLOF. 2014. Inequality in fertility rate and modern contraceptive use among Ghanaian women from 1988–2008 *International Journal for Equity in Health*. 12, 37
- ASHARAF, L. & BECKER, L. (1997). Husband Wife Communicating About Family And Contraceptive Use In Kenya. *International Family Planning Perspectives*. 23, 1. (Asante, 2014). 87
- ATUYAMBE, F. MIREMBE, N., M., TUMWESIGYE, J., ANNIKA, K., K & KIRUMIRA, E., F. AWUSABO-ASARE, K., ABANE, A., M. & KUMI-KYEREME, A. 2004. Adolescent Sexual and Reproductive Health in Ghana: A Synthesis of Research Evidence: Occasional Report, 13. Accessed on 20/ 27 /2012: **From: [www.gutmacher.org](http://www.gutmacher.org)**.
- AYOKUNLE, M. A. 2004. The Effect of Inter-spousal Communication on Contraceptive use among married couples in Lagos State Nigeria. Accessed on 20/ 12/2001  
From: **[paa2011.princeton.edu/download.aspx?submissionId=111703](http://paa2011.princeton.edu/download.aspx?submissionId=111703)**

- AYOUB, S., 2004. Effects of Women's Schooling on Contraceptive Use and Fertility in Tanzania. *African Population Studies* 19, 2.
- BABALOLA, S. & VONDRASEK, C. 2005. Communication Ideation and Contraceptive Use In Burkina Faso: An Application of The Propensity Score Matching Method. *Journal Of Family Planning And Reproductive Health Care*, 3, 207-312
- BADU K., 2002. The Effect of Contraceptive Practice on Fertility in Ghana: A Decade of Experience. *Canadian Studies in Population*, 29, 265-295.
- BAILEY, C., F. 2014 Hormonal Contraceptives, Duration of Use and the Experience of Side Effects in Southern Ghana. Accessed on 20/12/2013 from : [www.http://ncbi.nlm.gov/pubmed/21967158](http://ncbi.nlm.gov/pubmed/21967158).
- BARNET, B. 2007 Home Visiting For Adolescent Mothers: Effects On Parenting, Maternal Life Course, And Primary Care Linkage. *Ann Fam Med*, 5, 224-32
- BANKOLE, A. & SINGH, 1998. "Couples' Fertility And Contraceptive Decision Making In Developing Countries: Hearing The Man's Voice. *International family planning perspective* 24, 15.
- BANKOLE, A. 1995. Desired Fertility and Fertility Behaviour among the Yoruba of Nigeria. *Population Studies*, 49, 319-328.
- BARROSO, C. 2010. International Planned Parenthood Federation/Western Hemisphere Region, "The Benefits of Investing in Family Planning: New Evidence and Regional Experiences," presentation to panel discussion sponsored by the Guttmacher Institute, New York.
- BAWAH, A., A. 2002. Spousal Communication And Family Planning Behavior Navrongo: A Longitudinal Assessment. *Studies Family Planning*, 33, 185-94.

- BAWAH, A., A., AKWENGO, P., SIMSONS, R. & PHILIPS J., F. 1998. Womens's Fears And Men's Anxieties: The Impact Of Family Planning On Gender Relations In Northern Ghana. *Studies in family planning*:30,54-66.
- BASS, F. 2012. What is Associated with Married Women's Contraceptive Behavior in Ghana? *Population Association of America Meeting, San Francisco*,
- BENEDICT, O., A, AGARDH, A AND OSTERGREN, P. 2013. *Int. J Equity Health*. 12, 37.
- BENEFO, K., D. 2006. The Community-Level Effects Of Women's Education On Reproductive Behavior In Rural Ghana. *Demographic Research*: 14, 2[online] Accessed on 09/07/2012 from : [www.demographic-research.org](http://www.demographic-research.org).
- BENEFO, K., D.& PILLAI, V., K. 2003, The Reproductive Effects Of Family Planning Programs In Rural Ghana: Analysis By Gender. *Journal of Asian and African Studies*.40,463-4774.
- BIDDLECOM, A., E. MUNTHALI,A., SINGH, S & WOOG, V.2008 Adolescents' Views Of And Preferences For Sexual And Reproductive Health Services In Burkina Faso, Ghana, Malawi And Uganda *Afr J Reprod Health*. 11, 3.
- BINEY, A., A. 2011. Exploring contraceptive knowledge and use among women experiencing induced abortion in the Greater Accra Region, Ghana. *African Journal of Reproductive Health*,15, 37-46.
- BLANC, A., K.2003.The Effect of Power In Sexual Relations on Sexual And Reproductive Health: An Examination Of The Evidence. *International family planning perspective* 32, 3.

- BLANCHET, N, J FINK, G & OSEI-AKOTO, I .2012 The Effect of Ghana's National Health Insurance Scheme on Health Care utilization. *Ghana Med J*,46,
- BOAKYE, I., DICKERSON, T. & CROOKSTON, D. 2011. Family Planning In a Sub-District near Kumasi, Ghana: Side Effect Fears, Unintended Pregnancies And Misuse of A Medication as Emergency Contraception. *African Journal Of Reproductive Health September.15, 121-132.*
- BOAKYE, E., K. 2014 Correlates and predictors of juvenile delinquency in Ghana *International Journal of Comparative and Applied Criminal, 10, 80.*
- BOAMAH, E., A, ASANTE, K., P, MAHAMA, E, MANU, G, AYIPAH, E.,K & ADENIJI E, OWUSU-AGYEI, S.2014. Use of Contraceptives Among Adolescents In Kintampo, Ghana: A Cross-Sectional Study. *Open Access Journal of Contraception.2014-7-7-15.*
- BOGALE, B., WONDAFRASH, M., TILAHUN, T.&GIRMA, E. 2011. Married Women's Decision Making Power On Modern Contraceptive Use In Urban And Rural Southern Ethopia. *BMC Public Health,11,342*
- BOYER, C.B., SHAFER, M., SHAFFER, R.A., BRODINE, S.K., POLLACK, L.M., BETSINGER, K., CHANG, Y.J., KRAFT, H.S., & SCHACHTER, J. 2005. Evaluation Of A Cognitive-Behavioral, Group Randomized Controlled Intervention Trial To Prevent Sexually Transmitted Infections And Unintended Pregnancies In Young Women. *Preventative Medicine, 40, 420-431.*
- BRADLEY, S.,E.,K &. CASTERLINE, J.,B. 2014. Understanding Unmet Need: History, Theory, and Measurement. *Studies in family planning.45,2*
- CADWELL, J., C. & CADWELL, P. 2002. The Fertility Transition in Sub-Saharan Africa. Conference on Fertility and the Current South African Issues of Poverty, HIV/AIDS and Youth, Pretoria, South Africa.

- CALDWELL, J., C, CALDWELL P. (1990). Cultural Forces Tending To Sustain High Fertility. Population Growth And Reproduction In Sub-Saharan Africa. Washington, DC:
- CANNING, D& SCHULTZ, T., P.2012.The Economic Consequences Of Reproductive Health And Family Planning.  
Accessed on 02/06/2012 from:[http://dx.doi.org/10.1016/S0140-6736\(12\)60827-7](http://dx.doi.org/10.1016/S0140-6736(12)60827-7)
- CASTERLINE J., B. Diffusion Processes and Fertility Transition: Selected Perspectives, ed Washington, DC: *National Academy Press*, pp. 39-65.
- CENTRAL STATISTICAL OFFICE (CSO), MINISTRY OF HEALTH (MOH), TROPICAL DISEASES RESEARCH CENTRE (TDRC) & UNIVERSITY OF ZAMBIA AND MACRO INTERNATIONAL 2009. *Zambia Demography and Health Survey 2007*, Calverton Maryland, USA., CSO and Macro International.  
Accessed on 30/05/2012from:[www.measuredhs.com/pubs/pdf/sr157/sr157.pdf](http://www.measuredhs.com/pubs/pdf/sr157/sr157.pdf).
- CHIMBINDI, N. Z., MCGRATH, N., HERBST, K., SAN TINT, K. & NEWELL, M. L. 2010. Socio-demographic determinants of condom use among sexually active young people.
- CHANDRA-MOULIEN, PHILLIPS, K., M, S., J., WILLIAMSON, N., E AND HAINSWORT, G. 2014. Contraception For Adolescents In Low And Middle Income Countries: Needs, Barriers, And Access *Reproductive Health 11, 1*
- CHANDRA-MOULI, V&BRAET K. 2014Progress Review: Contraception Use Among Adolescent Girls  
Accessed on 06/07/2014 from[www.theguardian.com](http://www.theguardian.com) ***Global Development Professionals Network***
- CLELAND, J., BERNSTEIN, S., EZEH, A., FAUNDES, A., GLASIER, A.&INNIS, J. 2006. Family Planning: The Unfinished Agenda. *The Lancet*, 1810 - 1827.

- Adults in rural KwaZulu-Natal, South Africa. *The open AIDS journal*, 4, 88.
- CLELAND, JOHN. 2001. "Potatoes And Pills: An Overview Of Innovation-Diffusion Contributions To Explanations Of Fertility Decline," in National Research Council
- CLELAND, J.,G, NDUGWA, R.,P,& ZULU, E., M. 2011.Family Planning In Sub-Saharan Africa: Progress Or Stagnation? *Bull World Health Organ*;89:137–143.
- CLELAND,J., HARBISON, S. & SHAH,I,Q.2014.Unmet Need for Contraception: Issues and Challenges. *Studies in family plannig*,45,2 *Biol Sci*.364,2985-2990. 37,4. Ethiopia. BMC Public Health, 11,342.
- BONAPARTE, S. 2009. The demographic and socioeconomic determinants of contraceptive use in Indonesia. A Thesis Submitted in partial fulfilment of requirements for the award of Master of Arts degree. *Unpublished work*. . University of Washington.  
Accessed on 11/12/ 2011 from:[paa2009.princeton.edu/download.aspx?submissionId=91411](http://paa2009.princeton.edu/download.aspx?submissionId=91411)
- BONGAARTS. J AND G.R. POTTER, (1983): Fertility, Biology and Behavior: An Analysis of the Proximate determinants, Academic press, New York.
- BONGAARTS, J. 2006. The Causes of Stalling Fertility Transitions. *Studies in Family Journal of Reproductive Health*,8, 124-36.
- BONGARRTS, J. 2009. Human Population Growth And The Demographic Transition. *Biol Sci*. 364,2985-2990.
- BONGAARTS, J.2011.Can Family Planning Programs Reduce High Desired Family Size in Sub-Saharan Africa?*International Perspectives On Sexual And Reproductive Health*.
- BOOTH, C., M. 2008. Encyclopedia of Public Health. pp; First Edition. pp. 695-705.
- CLEMENTS, S. & MADISE, N. 2004. Who Is Being Served Least By Family Planning Providers? A Study Of Modern Contraceptive Use In Ghana, Tanzania And Zimbab *African Planning*, 37, 1-16.

COUNTRY PROFILE, GHANA, 2013. Article IV Consultation.

Accessed on 1/04/2013 from ***Internet: <http://www.imf.org>***

COX, C. M., HINDIN, M. J., OTUPIRI, E. & LARSEN-REINDORF, R. 2013 Understanding Couples' Relationship Quality And Contraceptive Use in Kumasi, Ghana *International Perspectives on Sexual and Reproductive Health*, 39, 185-194

CREANGA, A., GILLESPIE, D., KARKLINS, S., TSUI, A., O. 2011. Low Use Of Contraception Among Women In Africa: An Equity Issue. *Bulletine Of World Health Organization*, 89, 248-266.

DANIEL, E. E., MASILAMANI, R., RAHMAN, M. 2008. The Effect Of Community Based Reproductive Health Communication Interventions on Contraceptive Use Among Young Married Couples in Bihar India. *International Family Planning Perspectives*, 34, 4.

DALTON, V. K., MULLAN, X. X. P. D., YAO, K. A. D., KWAKUKOME, K. G. & JOHNSON, T. R. B. 2013. Special report, International Family Planning Programme: Training in Family Planning to reduce Abortion. *International Family Planning Perspectives*, 39, 1

DARTEH, E. K., M. DOKU, D. T. & ESIA-DONKOH, K. Reproductive Health Decision Making Among Ghanaian Women. *Reproductive Health*. 11, 23

DAVANZO, A. L., HALE, B. A., BAZZAQUE, C. & RAHMAN, M. 2007. Effect of Interpregnancy Intervals And Outcome of The Preeceding Pregnancy On The Pregnancy Outcomes In Matlab, Bangladesh. *BJOG*, 114, 1079-1089.

DECKER, M. & CONSTANTINE, N., A. 2011. Factors Associated With Contraceptive Use In Angola. *African Journal of Reproductive Health*, 15, 68-77.

- DELAMATE R,P.,L.,MESSINA, J.P.,SHORTRIDGE, A.,M& GRADY ,S.,C.2012  
Measuring Geographic Access To Health Care: Raster And Network-Based Methods.  
*International Journal of Health Geographics*
- DELANO, E., G. 1990. Spectrum Books, Guide To Family Planning New Edition, Ibadan:  
Spectrum Books Ltd.
- DeRose, L., F., DOODO, N., F.,EZEH A.,C.&OWUR, T.,O. 2004. Does Discussion of  
Family Planning Improve Knowledge of Partner's Attitude Towards Contraceptive?  
*International family planning perspective.30,2.*
- DIBABA,Y.2010 Child Spacing and Fertility Planning Behavior Among Women in Mana  
District, Jimma Zone, South West Ethiopia.*Ethiop J Health Sci, 20, 83–90.*
- DOCTOR, H., V., PHILLIPS, J., F& SAKEAH, E. 2009. The Influence of Changes In  
Women's Religious Affiliation on Contraceptive Use and Fertility among the Kassena-  
Nankana of Northern Ghana.*Studies in Family Planning.40, 113–122.*
- DOODO F., N. 2011. Fertility Preferences and Contraceptive Use: A Profitable Nexus For  
Understanding the Fertility Decline in Sub-Saharan Africa. {*Online*}.  
Accessed on 30/05/2012 from: <http://www.un.org/esa/population/publications/prospectsde..>
- DO, M. & KURIMOTO, N. 2012 . Women's Empowerment And Choice Of Contraceptive  
Methods In Selected African Countries. *International Family Planning Perspective, 38,1.*
- EBEIGBE,P.,N.,IBGERASE,G.,O & EIGBEFOH 2011.Vasectomy: A Survey Of Attitudes,  
Counseling Patterns And Acceptance Among Nigeria Residents Gynecologists.  
*Ghana Medj,43,101-104*
- EATON, L., FLIHSERA, J.& AROB, L., E.2003. Unsafe Sexual Behaviour In South  
African Youth. *Social Science And Medicine,59, 1581-159.*

- ELFSTROM, K., M7 STEPHENSON, R. 2012. The Role Of Place In Shaping Contraceptive Use Among Women In Africa. *Plos One* 7,7.
- ELIASON, E., BAIDEN., F., QUANSAH-ASARE., G GRAHAM-HAYFRON., H., BONSU D., JAMES PHILLIPS., J & AWUSABO-ASARE 2013 K. Factors influencing the intention of women in rural Ghana to adopt postpartum family planning. *Reproductive Health* 10:34.
- ELIASON, E., K AWOONOR-WILLIAMS, J., K., ELIASON, C., NOVIGNON, J., NONVIGNON, J., & AIKINS, M. 2014. *Reprod Health*. 11, 65.
- ELKAN, E., D., REHKA, M. & MIZAN, R. 2008. The Effect Of Community- Based Reproductive Health Communication Interventions On Contraceptive Use Among Young Married Women In Bihar, India. *International Family Planning Perspective*. 34,4.
- EVANS, J. & DELVA, W. (2009). Age-Desperate Relationships and Condom use Among Young People in Swaziland. South African Centre for Epidemiological Modeling and Analysis. Accessed on 1/04/2012 from: [www.sacemaquarterly.com/.../Condom-use-young-people-Swaziland..](http://www.sacemaquarterly.com/.../Condom-use-young-people-Swaziland..)
- FAMILY HEALTH INTERNATIONAL, 1996. Methods Work Better When Couples Talk *Network*. 16,3. [online]  
Accessed on 23/06/2012 from: [www.un.org/popin/popis/journals/network/.../atalk163.html](http://www.un.org/popin/popis/journals/network/.../atalk163.html)
- FAMILY HEALTH INTERNATIONAL, 2009. Perspectives on Gender and Health Men's Involvement in Emergency Contraceptive Use in Ghana  
Accessed on 23/06/2012 from: [www.fhi360.org/en/Topics/gender.htm](http://www.fhi360.org/en/Topics/gender.htm).
- FAMILY HEALTH INTERNATIONAL, 2009. Men's Involvement in Emergency Contraceptive Use in Ghana.  
Accessed on 23/06/2012 from: <http://www.fhi.org/en/Topics/gender.htm>.

FAMILY HEALTH INTERNATIONAL, 1999. Gender Norms Affects Community Distribution of Contraceptives.

Accessed on 23/06/2012 from: [http://www.aed.org/en/RH/Pubs/Network/v19\\_3/CBDgender](http://www.aed.org/en/RH/Pubs/Network/v19_3/CBDgender).

FAMILY HEALTH INTERNATIONAL, 2006. Behind the Pleasure: Sexual Decision-Making among High-Risk Men in Urban Vietnam.

Accessed on 23/06/2014 from [www.comminit.com/.../behind-pleasure-sexual-decision-making-among-hi...](http://www.comminit.com/.../behind-pleasure-sexual-decision-making-among-hi...)

FOOD AND AGRIC ORGANIZATION, GHANA REPORT. 2013 Food Security In Ghana.

Women; Key To Food Security. Accessed on 23/06/2014 from [foodsecurityghana.com/tag/fao/](http://foodsecurityghana.com/tag/fao/)

FEINSTEIN, L., BUDGE, D., VORHAUS, J. & DUCKWORTH, K. 2008. The Social And Personal Benefits of Learning: Centre For Research On Wider Benefits Of Learning, London.

FEYISETAN, B. & CASTERLINE, J., B. 2000. Fertility Preferences and Contraceptive Change in Developing Countries. Policy Research Division, Working Paper No. 130. Population Council, New York

FISCHER, M. 2002. "Childbearing In Ghana" How Beliefs Affect Care: African Diaspora ISPs. Paper 76.

Accessed on 29/06/2012 from: <http://digitalcollections.sit.edu/african>

FROST, J., J. & DARROCH, J. 2008. Factors Associated with Contraceptive Choice and Inconsistent Method Use, United States. *Perspectives on Sexual and Reproductive Health*, 40, 94-104.

GAGE, A., J. 1995. Women's Socioeconomic Position And Contraceptive Behavior In Togo. *Studies in Family Planning*, 26, 264-277.

GAKIDOU, E. & VAYENA, E. 2007. Use of modern contraception by the poor is falling behind. *PLoS Med*, 4, e31.

GEBRESELASSIE, TESHAYI. 2008. Spousal Agreement on Reproductive Preferences in Sub-Saharan Africa. Calverton, Maryland, USA: Macro International Inc. Accessed on 29/10/2012 from [dhsprogram.com/pubs/pdf/AS10/AS10.pdf](http://dhsprogram.com/pubs/pdf/AS10/AS10.pdf)

GATES, B., W. H. & GATES, M., A. 2012. Family Planning: Strategy Overview. Accessed on 29/10/2012 from: [www.gatesfoundation.org](http://www.gatesfoundation.org).

GHANA AIDS COMMISSION SENTINEL SURVEY REPORT 2011.

Accessed on 20/01/2013 from: <http://www.modernghana.com/news/385773/1/2011-hiv-sentinel-s..>

GHANA AIDS COMMISSION SUMMARY OF THE 2013 HIV SENTINEL SURVEY REPORT Accessed on 20/01/2013 from:

<http://www.modernghana.com/news/385773/1/2011-hiv-sentinel-s..>

GHANA HEALTH SERVICE, HEALTH SECTOR HALF YEAR REPORT 2010

Accessed on 02/01/2012 from: [www.ghanahealthservice.org](http://www.ghanahealthservice.org).

GHANA HEALTH SERVICE, HEALTH SECTOR HALF YEAR REPORT 2013

Accessed on 02/01/2014 from: [www.ghanahealthservice.org](http://www.ghanahealthservice.org).

GHANA POPULATION COUNCIL OVERVIEW, POPULATION COUNCIL 2013. Ideas.

Evidence. Impacts. accessed on 10/04/2014 from: [www.popcouncil.org/research/ghana](http://www.popcouncil.org/research/ghana)

GHANA STATISTICAL SERVICE 1999. Demographic and Health Survey 1998. Calverton Maryland, USA: Ghana Statistical Service and Macro International,

Accessed on 02/21/2012 from: <http://www.measuredhs.com/pubs/pdf/FR106/FR106.pdf>

GHANA STATISTICAL SERVICE 2004. Demographic and Health Survey 2003. Calverton Maryland, USA: Ghana Statistical Service, Nuguchi Memorial Institute for Medical Research Legon, Ghana., and Macro International,.  
Accessed on 24/02/2012 from: [www.measuredhs.com/pubs/pdf/FR152/FR152.pdf](http://www.measuredhs.com/pubs/pdf/FR152/FR152.pdf).

GHANA STATISTICAL SERVICE 2009. Demographic and Health Survey 2008. Calverton Maryland, USA: Ghana Statistical Service and Macro International,.  
Accessed on 21/02/2012 from: [www.measuredhs.com/pubs/pdf/GF14/GF14.pdf](http://www.measuredhs.com/pubs/pdf/GF14/GF14.pdf)

GHANA STATISTICAL SERVICE 2009. Ghana Maternal Health Survey 2007. Calverton, Maryland, USA: Ghana Statistical Service(GSS), Ghana Health Service (GHS) and Macro International.  
Accessed on 3/01/2012 from: <http://www.measuredhs.com/pubs/pdf/FR227/FR227.pdf>

GHANA STATISTICAL SERVICE, 2012 Multiple indicator cluster survey 2011. Calverton, Maryland, USA: Ghana Statistical Service(GSS),Ghana Health Service(GHS), ICF and International, Japan Official Development Assistance, UNFPA,UNICEF, USAID

GHANA STATISTICAL SERVICE 2011.Population and Housing Census 2010,.  
Accessed on 3/01/2012 from: [www.modernghana.com/GhanaHome/download.asp?id=177](http://www.modernghana.com/GhanaHome/download.asp?id=177)

GHANA NEWS AGENCY, 2011. "Northern region women are the most fertile in Ghana Population Officer", Accessed on 07/05/2012 from: <http://www.ghananewsagency.org>.

GIRGIS, S.2012. What is Marriage? *Harvard Journal Of Law And Public Policy*, 34,245-287  
Accessed on 07/05/2012 from [ssrn.com/abstract=1722155](http://ssrn.com/abstract=1722155)

GLOVER, E., K, BANNERMAN, A., PENCE, B., W., JONES, H., MILLER, R., WEISS, E. & NERQUAYE-TETTEH,J. 2003. Sexual Health Experiences of Adolescents in Three Ghanaian Towns. *International Family Planning Perspectives*.29,1

- GODSWILL, J. 2012. Education and Sexuality: Towards Addressing Adolescents' Reproductive Health Needs in Nigeria. *Current Research Journal of Social Sciences*.4, 285- 293
- GOLD, E., B., CRAWFOLD, S., SAMUELS, S., G., GREENDALE, S., D., SHURNICK, J. 2001. Factors Associated With Natural Age at Menopause in Multi-ethnic Sample of Middlelife Women. *American Journal of Epidemiology*, 153, 865-874.
- GORDON, C. SABATES, R.& BOND, T., W. 2011. Women's Education and Modern Contraceptive Use in Ethiopia. *International Journal of Education*.3,1.
- GRILLO, C. 2009. Archive for the 'Men's Roles in Family Planning' Category Ward Cates: What Now? International Conference on Family Planning. Accessed on 3/01/2012 from: <http://2009fpconference.wordpress.com/category/mens-roles-in...>
- GUSTAFSON, K. 2011. Girls Not Brides. Campaigns Aimed To End Child Bride In Generation Accessed on 01/01 2011 from: [www.icrw.org › Media › ICRW Media Coverage](http://www.icrw.org/Media/ICRW-Media-Coverage)
- GYIMAH, S., O., ADJEI, J. & COFFIE N. 2011. Ghana's Family Planning Policy A review and preview of the success story of Ghana's family planning policy. Accessed on 3/01/2013 from.
- GYEBI, E. 2011. Family Planning Should Be Part Of NHIS -NGO. The Chronicle.
- HACKER M, 2011. Merriam -Webster Online Dictionary. Accessed on 01/01 2011 from: [http://www.merriam-webster.com/dictionary.hacke](http://www.merriam-webster.com/dictionary/hacke)

- HALL, A., G., LEMAK, C., H., STEINGRABER, H. & SCHAFFER, S. 2008 Expanding The Definition Of Access: It Isn't Just About Health Insurance. *J Health Care Poor Underserved*. 19, 625-38.
- HATHER, R., TRUSSEL, J., NELSON, A. & CATES, W. 2010. *Contraceptive Technology*; Twentieth Edition pp 14-29.
- HESS, S. 2007. Assessing Facility Readiness Of Family Planning Services In Ghana Accessed on 10/09/2013 from: [www.ghanaghp.org/fileadmin/user.../Hess\\_Thesis\\_6May\\_QHP.pdf](http://www.ghanaghp.org/fileadmin/user_upload/Hess_Thesis_6May_QHP.pdf)
- HINDIN M., H. & FATUSE, A., O. 2009. Adolescent Sexual and Reproductive Health In Developing Countries: An Overview Of Trends And Interventions. *International Family Planning Perspective*, 35, 2.
- HINDIN, M., J, MCGOUGH, L., J. & ADANU, R., M. 2014. Misperceptions, Misinformation And Myths About Modern Contraceptive use in Ghana. *J Fam Plann Reprod Health Care*. 40, 30-35
- HILDEBRANDT, E & STEVENS, P. 2009. Impoverished Women With Children and No Welfare Benefits: The Urgency of Researching Failures of the Temporary Assistance for Needy Families Program. *Am J Public Health*. 99, 793-801.
- HIRSCH, E. D., JOSEPH, J., R. KETT, F., JAMES, S. & TREFIL. 2012. *The New Dictionary of Cultural Literacy*; Science Third Edition. pp 125.
- HONG, R., FRONCZAK, N., CHINBUAH, A. & MILLER, R. 2005. Ghana Trend Analysis for Family Planning Services, 1993, 1996 and 2002: Trends Analysis of Demographic and Health Survey Data. Calverton Maryland, USA: ORC Macro. WS
- HOGAN, D.P., BERHANU, B., & HALIEMARIAM, A. 1999. Household Organization, Women's Autonomy, And Contraceptive Behaviors In Southern Ethiopia. *Studies In Family Planning*, 30, 302-314.
- HOQUE, M., HOQUE, E. M., KADER, S., B. 2008. Pregnancy complications of

grandmultiparity at a rural setting of South Africa. *Iranian Journal of Reproductive Medicine* 6.25-3.

HUTCHINSON, P.,L, DO,M&AGHA,S2011. Measuring client satisfaction and the quality of family planning services: A comparative analysis of public and private health facilities in Tanzania, Kenya and Ghana. *BMC Health Serv Res.* 11,203

HYAM, L. 2002. Global Economic And Education Opportunities For Women. 16<sup>th</sup>

Australian International Education Conference

Accessed on 02/01/2012 from: [http://www.aiec.idp.com/pdf/Hyam\\_Access\\_p.pdf](http://www.aiec.idp.com/pdf/Hyam_Access_p.pdf)

ICF MACRO 2010. Ghana Trend Analysis Report 1960-2008: Trends Analysis of Demographic and Health Survey Data. Calverton Maryland, USA.: ICF Macro.WS

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IMBUKI K, TODD, C.,S, STIBICH, M.,A, SHAFFER, D.,N&SINEI, S.,K.2010. Factors Influencing Contraceptive Choice And Discontinuation Among HIV-Positive Women In Kericho, Kenya. *Afr J Reprod Health.* 14,98-109.

ISIUGO-ABANIHE, U., C. 1994. Reproductive Motivation and Family-Size Preferences Among Nigerian Men. *Studies in Family planning.* 25,3. 66.

JOHN, P., R., M. & SEVERINE, S., A. 2008:"Negotiating For Safe Sex Among Young Woman" The Fight Against HIV/AIDS In Tanzania Research Report 08.5 (Dar es Salaam, REPOA, 2008.

JONES, R., BIDLECOM, A.,HEBERT, L&MILNE,R.2011.Teens Reflect on Their Sources of Contraceptive Information.*Journal of Adolescent Research.*26, 423-44.

JUMA, J. Sub-Saharan Girls Held Back By child marriage and violence.

Accessed on 02/01/2012 from [www.actionaid.org/2011/.../sub-saharan-girls-held-back-](http://www.actionaid.org/2011/.../sub-saharan-girls-held-back-)

*child-marriage-...:*

- KABAGENYI, A., NDUKA, P., WANDER, S., O., O & KWAGAL, B . 2014. Modern Contraceptive Use Among Sexually Active Men In Uganda: Does Discussion With Health Worker Matter? *BMC Public Health*. 14, 286
- KAMLA-RAJ, 2010. Fertility Behaviour of Women and Their Household Characteristics: A Case Study of Punjab, Pakistan. *Journal of Human Ecology*. 3, 11-17.
- KANYOMSE, E. A. 2005. Enhancing Contraceptive Use: Assessment Of Determinants Of Contraceptive Use Among Rural Women In Northern Ghana. Kwame Nkrumah University of Science and Technology.  
Accessed on 02/01/2012 from: <http://paa2005.princeton.edu/papers/50978>
- KARIM, A., MAGNANI, R., WENDOLYN, M. & BOND, K 2003. "Reproductive Health Risk and Protective Factors among Unmarried Youth in Ghana." *International Family Planning Perspectives*, 29, 1-15
- KARRA, M. & LEE, K. 2012. The Economics of Reproductive Health in Accra, Ghana. *Ghana Medical Journal*, 46, 2.
- KAYONGO, S., B. 2013. Uptake Of Modern Contraception Among Youths (15-24) At Community Level In Busia District, Uganda.
- KHAN M. A., 1997. Factors Affecting Use of Contraception In Matlab, Bangladesh., *J Biosoc Sci* 28, 265-279.
- KHAN, M., A. SHANE, V., M., ARNOLD, M. & ABDERRAHIM, N. 2007. Contraceptive Trends in Developing Countries. Calverton, MD: Macro International Inc. DHS Comparative Reports No. 16. N  
Accessed on 20/07/2012 from: <http://www.measuredhs.com/pubs/pdf/CR16/CR16.pdf>.

KISAAKYE, P. Determinants Of Unmet Need For Contraception To Space And Limit Births Among Various Groups Of Currently Married Women In Uganda 1st Annual International Interdisciplinary Conference, *AIIC 2013*, 24-26 April, Azores, Portugal.

KISHOR, S. AND JOHNSON K. 2004. Profiling Domestic Violence: A Multi-Country Study, ORC Macro, Maryland.

Accessed on 20/07/2012 from [dhsprogram.com/pubs/pdf/OD31/OD31.pdf](http://dhsprogram.com/pubs/pdf/OD31/OD31.pdf)

KIRBY, M. 2011 Unemployment's Relationship With Poverty From Rich To Poor Countries

Accessed on 04/05/2013 from: [www.aidemocracy.org](http://www.aidemocracy.org) › *Blog*

KOLBILLA, D., Z. 2008. Determinants of family planning choices in the Tamale Metropolis of Northern Region, Ghana Accessed on 01/01 2014 from

<http://hdl.handle.net/123456789/182>

KODZI, I., A., CASTLE, J., ABLOBITSE , P. 2010 The Dynamics Of Individual Fertility Preferences among Rural Ghanaian Women. *Studies In Family Planning*. 41, 1.

KODZI, I., A. & D., R. JOHNSON 2009. Determinants of the Desire to Stop

Childbearing among Women in Southern Ghana: Parity Progression, Partner Effects and Situational Factors. Population Association of America.

Accessed on 01/01 20911 from: <http://paa2009.princeton.edu/papers/91027>

KOMNENEIC, A. 2014 Gold Mining Declining Fast In Ghana – Africa's Second Largest Gold

Producer. ACCESSED On 20/06/2014 From: [www.mining.com/gold-mining-declining-fast-in-africas-second-](http://www.mining.com/gold-mining-declining-fast-in-africas-second-)

KORRA, A. & MACRO, O. 2002. Attitudes toward family planning and reasons for nonuse among women with unmet need for family planning in Ethiopia. Calverton Maryland, USA: ORC Macro. ws.

Accessed on 20/7/2012 from: [www.measuredhs.com/pubs/pdf/FA40/ETFA40.pdf](http://www.measuredhs.com/pubs/pdf/FA40/ETFA40.pdf).

KRAKOWIAK-REDD, D., ANSONG, D., OTUPIRI, E., TRAN, S., KLANDERUD, D. BOAKYE, D., T. & CROOKSTON B. Family Planning In A Sub-District Near Kumasi, Ghana: Side Effect Fears, Unintended Pregnancies And Misuse Of A Medication As

KUHLMANN, A., S. 210. The Integration of Family Planning with Other Health Services: A Literature Review. *International Perspective on Sexual and Reproductive Health*. 36, 4.

KULCZYCKI, A. 2008. Husband-Wife Agreement, Power Relations and Contraceptive Use in Turkey. *International Family Planning Perspectives*. 34, 3.

KUNATEH, M., A. 2012. High Cost Of Living In Ghana Despite Single-Digit Inflation Accessed on 20/05/2013 From: [thechronicle.com.gh/high-cost-of-living-in-ghana-despite-single-digit-in..](http://thechronicle.com.gh/high-cost-of-living-in-ghana-despite-single-digit-in..)

KUSI, G., E, 2014 The Ghanaian Case Assessment Of Current Existing Legislation And Policies In Ghana. > Gaps And Opportunities. Accessed on 20/05/2014 from: [www.pgaction.org/pdf/Hon-Gifty-Kusi-MP-Ghana.pdf](http://www.pgaction.org/pdf/Hon-Gifty-Kusi-MP-Ghana.pdf)

KYEI-NIMAKOH, M., ARHIN, D. & AIKINS, M. 2012. Socio-economic Differentials in Health Care Seeking Behaviour and Out-Of-Pocket expenditure for OPD Services in Madina Township. *Journal of Biology, Agriculture and Healthcare*, 42

LAUREL, C. 2001, Global Evaluation Of USAIDS Post-Abortion Care Programme. USA. Accessed on 20/05/2014 from: [pdf.usaid.gov/pdf\\_docs/PNACN773.pdf](http://pdf.usaid.gov/pdf_docs/PNACN773.pdf)

LAZARUS, J., V., SIHVONEN-RIEMENSCHNEIDER, H., LAUKAMM-JOSTEN, U., WONG, F., LILJESTRAND, J. 2009. Systematic Review of Interventions to Prevent Spread of Sexually Transmitted Infections, Including HIV, Among Young People in Europe *Croatian Medical Journal*, 51, 74-84.

- LERAS-MUNEY, A. 2005. The Relationship Between Education and Adult Mortality in the United States. *Review of Economic Studies*, 72, 189-221.
- LINK, C. F. 2011. Spousal Communication And Contraceptive Use In Rural Nepal: An Event History Analysis. *Studies In Family Planning*, 42, 83-92.
- MACHELLE, G. The world we want: an end to child marriage. *The Lancet* 382, 1005 - 1006
- MADI, H., 1997. Current Practices of Contraceptive Use Mothers Of Children 0-3 Years Of Age Attending UNRWA MCH Clinics. Report on Agency- Wide Study: United Nations. Relief and Works Agency for Palestine Refugees in the Near East. Accessed on 03/03/2012 from: [www.hpcpromise.org.jo/node/159](http://www.hpcpromise.org.jo/node/159).
- MAGADI, M. A. & CURTIS, S. L. 2003. Trends and determinants of contraceptive method choice in Kenya. *Studies in Family Planning*, 34, 149-159.
- MAHARAJ, P., CLELAND, J. 2005. Integration of sexual and reproductive health service in KwaZulu-Nata, South Africa. *Oxford Journals*, 20, 310-318.
- MAJOKO, F., NYSTROM, N., MUNJANJA, S. P., MASON, E., LINDMARK, G. 2004. Relation Of Parity To Pregnancy Outcome In A Rural Community In Zimbabwe. *African Journal of Reproductive Health*. 8, 198-206.
- MAKINWA-ADEBUSOYE, P. 2001. Socio-Cultural Factors Affecting Fertility Transition In Sub-Saharan Africa Population. *Bulletin of the United Nations*, New York 46, 55-69.
- MANDELA, N., R. 2010. The Street Children Situation In Tamale, Ghana. Submitted Thesis. [Unpublished] Accessed on 10/10/2012 from: [publications.theseus.fi/bitstream/h](http://publications.theseus.fi/bitstream/h)

- MATHE JK, KASONIA KK, MALIRO AK. Barriers to adoption of family planning among women in Eastern Democratic Republic of Congo. *Afr J Reprod Health* 2011;15:69–77.
- MACQUARRIE, K., L., D. 2014 Demographic and Health Surveys, ICF International, USAID REPORT, Unmet Need For Family Planning Among Young Women: Levels And Trends. Accessed on 10/07/2014 from: [dhsprogram.com/pubs/pdf/CR34/CR34.pdf](http://dhsprogram.com/pubs/pdf/CR34/CR34.pdf)
- MEASUREDHS, 1984. Demographic and Health Surveys.  
Available at: <http://www.measuredhs.com/Who-We-Are/About-Us.cfm>.
- MILLER-KEANE, 2005 Encyclopedia And Dictionary Of Medicine, Nursing And Allied Health 7th Edition, Print Book.
- MILLAZO, A. 2014 Son Preference, Fertility and Family Structure Evidence from Reproductive Behavior among Nigerian Women. Policy Research Working Paper 6869
- MOHAMMED, A., WOLDEYOHANNES, D., FELEKE, A & MEGABIAB, B 2014. Determinants Of Modern Contraceptive Utilization Among Married Women Of Reproductive Age Group In North Shoa Zone, Amhara Region, Ethiopia *Reprod Health*. 11, 13.
- MOSHA, M., RUBEN, R & KAKOKO, I, 2013. Family Planning Decisions, Perceptions And Gender Dynamics Among Couples In Mwanza, Tanzania: A Qualitative Study. *BMC Public Health*. 13, 523
- MOTE, C., V., OTUPIRI, E., HINDIN, M., J. 2010. Factors Associated with Induced Abortion among Women in Hohoe, Ghana. *African Journal of Reproductive Health*, 14, 144-155.
- MUHOZA, D., N., BROEKHUIS, A., & HOOIMEIJE, M. 2014 Variations In Desired Family Size And Excess Fertility In East Africa *International Journal of Population Research*, 11
- MOYER, C., A., ADONGO, P., B. ABORIGO, R., A., HODGSON., A & ENGMANN, C., M 2014

They treat you like you are not a human being': maltreatment during labour and delivery in rural northern Ghana. *Midwifery*, 30, 262-8

MUENCHRATH, M. 2009. How Negative is the Influence of Men On Contraceptive Use in Ghana. Submitted thesis. [Unpublished].

NAGAT, J., NAGAT, M., ISABEL, M., HERNÁNDEZ-RAMOS, M., KURUP, M., S., ALBRECHT, D., VIVAS-TORREALBA, C. & FRANCO-PAREDES, C. Social determinants of health and seasonal vaccination in adults more than 65 years: a systematic review of qualitative and quantitative data *BMC Public Health* 2013, **13**:388

NAMISI, F., S., LEIF, E., A., KAAYA, S., ONYA, E., H., WUBS, A. & MATTHEW, K. 2013. Condom Use And Sexuality Communication With Adults: A Study Among High School Students In South Africa Tanzania. *BMC Public Health*, **37**, 874.

NATIONAL AIDS CONTROL PROGRAMME, GHANA, 2011. Country Progress Report. Accessed on 2/11/2011 from: [www.unaids.org/file.33663.fr.pdf](http://www.unaids.org/file.33663.fr.pdf).

NATIONAL AIDS CONTROL PROGRAMME, 2013 REPORT; HIV AND AIDS PREVALENCE RATE DROPS. Accessed on 2/11/2014 from: [www.unaids.org/file.33663.fr.pdf](http://www.unaids.org/file.33663.fr.pdf).

NATIONAL POPULATION POLICY AT A GLANCE, 1994. Revised Edition Accessed on 10/03/2012 from: [www.Npc.Gov.Gh/Assets/Nationalpopulationpolicyataglance.Pdf](http://www.Npc.Gov.Gh/Assets/Nationalpopulationpolicyataglance.Pdf).

NATIONAL RESEARCH COUNCIL 1993. *Factors Affecting Contraceptive Use in Sub-Saharan Africa*, Washington, USA, The National Academies Press. ws.

NATSAYI Z., NUALA, C., M., KOBUS, H., K., S., T. & MARIE-LOUS, N. 2012. Socio-Demographic Determinants of Condom Use Among Sexually Active Young Adults: Rural KwaZulu-Natal, South Africa. *The Open AIDS Journal*, **6**, 1874-6136.

- NGOM, P., DEBPUUR, C., AKWENGO, P. & BINKA, F., N.2003. Gate-Keeping and Women's Health Seeking Behaviour in Navrongo, Northern Ghana. *African Journal of Reproductive Health*, 7, 17-26.
- NKETIAH-AMPONSAH,, E., ARTHUR, E. & ABUOSI, A. 2012. Correlates of Contraceptive Use Among Ghanaian women of Reproductive Age (15-49 Years). *African Journal of Reproductive Health* 3, 154-169.
- NIELS-HUGO, BLUNCH. 2008.Human Capital, Religion and Contraceptive Use in Ghana. [online] Accessed on 11/09/2012 from:<http://www.csae.ox.ac.uk/conferences/2008/EDiA/papers/184>
- NORTON, M. 2005. New Evidence On Birth Spacing: Promising Findings For Improving Newborn, Infant, Child, and Maternal Health, *International Journal of Gynecology and Obstetrics* 89, S1—S6.
- NOUR, N., M. 2006. Health Consequences of Child Marriage in Africa. *Emerge Infec Dis.*12,1644-1649.
- OGUNJUYIGBE, P. O., OJOFEITIMI, E. O. & LIASU, A. 2009. Spousal communication, changes in partner attitude, and contraceptive use among the yorubas of southwest Nigeria,. *Indian Journal of Community Medicine*, 34, 112-6.
- OHENEBA-SAKYI, Y.1992. Determinants of Current Contraceptive Use among Ghanaian Women at the Highest Risk of Pregnancy. *J Biosoc Sci.*24, 463-475.
- OHENEBA-SAKYI, Y.2002 Contraceptive Usage Among Ghanaian Women,” *International Journal of Sociology of the Family*, 20,139-161.
- OHENE, S. & AKOTO, I., O.2008. Factors Associated With Sexually Transmitted

Infections among Ghanaian Women. *Ghana Medical Journal*, 42, 96-100.

OKAFOR, E., E.& AKINWALE, A., A. 2005. Educational attainment, formal employment and contraceptives practices among working women in Lagos State University. *African Journal for Psychological Study of Social Issues* 8, 189-209.

OKECH.,T.,C,WAWIRE,N.,W&MBURU,T.,K.2011 Contraceptive Use among Women of Reproductive Age in Kenya's City Slums *International Journal of Business and Social Science*, 21

OKEZIE, C., OGBE, A. & OKEZIE, C. 2010. Socio-economic determinants of contraceptive use among rural women in Ikwuano Local Government Area of Abia State, Nigeria, *International NGO Journal*, 5, 74-77.

OLALEKAN, A. 2003. A Multi Level Analysis Of Effect Of Household Wealth Inequality On Under-Five Child under -Nutrition: Evidence From 2003 Nigeria Demographic And Health Survey. *The International Journal Of Wellness And Nutrition*, 1937-8297

OSIAKWAN, R.,O2014Understanding The Implication Of Changing Levels Of Inflation On Standard Of Living In Ghana.

Accessed on 03/01/22014 from:[air.ashesi.edu.gh/handle/123456789/114](http://air.ashesi.edu.gh/handle/123456789/114)

OTOO-OYORTEY, N. & POBI S. 2003. Early Marriage and Poverty: Exploring Links For Policy and Program Development. The Forum on Marriage and The Rights Of Women and Girls In Collaboration With The International Planned Parenthood Federation.

Accessed on 11/09/2012 from:[www.jst.org/stable/4030639](http://www.jst.org/stable/4030639).

OPARE, J. 2013. Many Teenagers Die From Unsafe Abortion- Medical Practitioner.

Accessed on 11/09/2012 from[www.ghananewsagency.org/.../many-teenagers-die-from-unsafe-abortion..](http://www.ghananewsagency.org/.../many-teenagers-die-from-unsafe-abortion..)

OSTROW, N.2014 Marriage Is a Prescription for a Healthy Heart, Study Suggests

Accessed on 11/01/2014 from [www.bloomberg.com/2014.../marriage-is-a-prescription-for-a-healthy...](http://www.bloomberg.com/2014.../marriage-is-a-prescription-for-a-healthy...)

- OWUSU-ASUBONTENG, G., D., ODOI, E., T., FRIMPONG, P.& FRANK, K. 2012. Trend, Client Profile and Surgical Features Of Vasectomy In Ghana. *The European Journal of Contraception and Reproductive Care*. 16, 28.
- OWUSU, S., A., BLANKSON, J., A & ABANE, A., M. 2011. Sexual and reproductive health education among dressmakers and hairdressers in the Assin South district of Ghana. *African Journal of Reproductive Health*. ,15, 109-119
- OYEDIRAN, K. A., FEYISETAN, O. I. & AKPAN, T. 2011. Predictors of condom-use among young never-married males in Nigeria. *Journal of Health and Population Nutrition*. 29, 273-85.
- PARR, N. J., 2003. Discontinuation of Contraceptive Use in Ghana,. *Journal of Health Population Nutrition*. 2, 150-15.
- PADMADAS, S., S., AMAOKO, J., FLEON, T. & DAHAL, P., G. 2014. Do Mobile Family Planning Clinics Facilitate Vasectomy Use In Nepal? *Contraception*. 89, 557-63
- PELL, C., M., MEÑACA, A., WERE, F., AFRAH, N., A., CHATIO, S., MANDA-TAYLOR, L., HAMEL, M., HODGSON, A., TAGBOR, H., KALILANI, K., OUMA, P. & POOL, R. 2013 Factors Affecting Antenatal Care Attendance: Results from Qualitative Studies in Ghana, Kenya and Malawi. *PLoS ONE*, 8, 53747
- PENCE, L., VALRIE, C.R., GIL, K.M., REDDING-LALLINGER, R., & DAESCHNER, C. 2007. Optimism Predicting Daily Pain Medication Use in Adolescents with Sickle Cell Disease. *Journal of Pain and Symptom Management*, 33, 302-309.
- PEPRAH, J., A. 2012 Access To Micro-Credit And Well-Being Among Women Entrepreneurs In The Mfantseman Municipality Of Ghana *International Journal Of Finance & Banking Studies*.

- PETERS, E., BAKER, D.P., DIECKMANN.N.F., LEON J.& Collins, J. 2010.  
Explaining the Effect of Education On Health: A Field Study In Ghana.*Psychological Science,10,1369-1376.*
- PILLAI, V., K.& BENEFO, K., D. 2005. The Reproductive Preferences OF Family Planning Programmes in Rural Ghana:Analysis by Gender. *Journal of Asian and African Studies. 40, 463-477.*
- PILLSBURY, B., & MAYER, D. 2005. Women Connect! Strengthening Communications To Meet Sexual And Reproductive Health Challenges. *Journal of Health Communication, 10, 361-371.*
- POPICK,R, FRAZZANO,A& TRACHTENBERG,R 2009.Geographic Access To Care In Rhode Island Through the Use of GIS.*Medicine& Health, 92,7*
- PRATA, N. 2009. Making Family Planning Accessible In Resource -Poor Settings. *Phil. Trans. R. Soc. B, 36.* Accessed on 05/05/2012 from:  
**[www. http://rstb.royalsocietypublishing.org/content/364/1532/3093.full.html#ref-list-1](http://rstb.royalsocietypublishing.org/content/364/1532/3093.full.html#ref-list-1)**
- PRINSLOO, A. 2011. Fertile Poverty, Northern Ghana's High Birth Rates.  
Accesses on 07/05/2012 from: **[www.cunsultancy africa..com](http://www.cunsultancy africa..com)**
- PROGRESS PROFILE, 2011.United Nations Fund for Population Activites and Millenium Development Goals. Accessed on 05/05/2012 from:**[www.un.org/milleniumgoals](http://www.un.org/milleniumgoals)**.
- RAHAYU, R., UTOMO, I. & MCDONALD, P. 2009 Contraceptive Use Pattern among Married Women in Indonesia. International Conference on Family Planning: Research and Best Practices. 15-18, Kampala, Uganda.

Accessed on 30/12/2011 from: [www.fconference2009.org/media/DIR](http://www.fconference2009.org/media/DIR).

RAHMAN, L. 2000. Women's Social Participation and Contraceptive Use In Bangladesh. A Thesis Submitted In Partial Fulfillment of The Requirements For The Degree of Master Of Arts. Population and Reproductive Health Research Faculty Of Graduate Studies Mahidol. Accessed on 30/12/2011 from:  
[University.http://ipsr.healthrepository.org/bitstream/123456789/21/2/TH](http://ipsr.healthrepository.org/bitstream/123456789/21/2/TH).

RAUHALA, E. 2012. Melinda Gates Launches Global Crusade for Contraception  
Accesses on 07/05/2012 from: [world.time.com/2012/07/11/melindagates](http://world.time.com/2012/07/11/melindagates).

RAI, P., ISHWARI, S., P., ANUP, G., PARAS, P.,K., RAJU, R& SURYA, R., N.2014. Effect of gender preference on fertility: cross-sectional study among women of Tharu community from rural area of eastern region of Nepal. *Reproductive Health* 2014, **11**, 15

RAJ, A., SAGGURTI, N., WINTER, M., LABONTE, A., DECKER,M.,P., BALAIAH,D& SILVERMAN,JG.2010. The Effect Of Maternal Child Marriage On Morbidity And Mortality of Children Under 5 In India: Cross Sectional Study Of A Nationally Representative Sample. *BMJ*,340,258

READING F., B.2011. Education Leads to Lower Fertility and Increased Prosperity.  
Accessed on 29/06/2012 from: [www.earth-policy.org/data\\_highlights/2011/highlights13](http://www.earth-policy.org/data_highlights/2011/highlights13)

RIM, A., MAGNANI, R., GWENDOLYN, M. & BOND, K. 2003"Reproductive Health Risk and Protective Factors among Unmarried Youth in Ghana."  
*International Family Planning Perspectives*, 29, 1-15.

RINGEIM,K& GRIBBLE,J2009 Improving The Reproductive Health Of Sub-Saharan Africa's Youth A Route To Achieve The Millennium Development Goals

Accessed on 25/05/2014 from: [www.prb.org/pdf10/youthchartbook.pdf](http://www.prb.org/pdf10/youthchartbook.pdf)

RUSSEL, S. 2008 Demand-side Factors Affecting Health Seeking Behavior in Ghana. *The Georgetown Undergraduate Journal of Health Services*, 5.

TRUSSELL J, RAYMOND, E., G. Emergency Contraception: A Last Chance To Prevent Unintended Pregnancy Accessed On 25/05/2014

From <https://www.k4health.org/.../EmergencyContraception/Emergency-Contra...>

SABATES, R., FERNANDEZ, J., H. & LEWINL., M. 2011 The Role Of Maternal Education during Educational Expansion For Children In Sub-Saharan Africa. *Research Monograph No. 64*.

SAKEAH, E., DOCTOR-H., V., MCCLOSKEY-L., BERNSTEIN, J., YEBOAH-ANTWI-K & MILLS, S. 2014 Using the community-based health planning and services program to promote skilled delivery in rural Ghana: socio-demographic factors that influence women utilization of skilled attendants at birth in Northern Ghana. *BMC Public Health*, 14, 344

SALEEM, S., & BOBAK, M. 2005. Women's Autonomy, Education and Contraceptive Use in Pakistan: A national Study. *Reproductive Health*, 2, 1-8

SALWAY, S. 1994. How Attitudes Toward Family Planning And Discussion Between Wives And Husbands Affect Contraceptive Use In Ghana. *International Family Planning Perspectives* 20, 44 -47+74

SAMANDARI, G., SPEIZER, I. S. & O'CONNELL, K. 2010. The role of social support and parity in contraceptive use in Cambodia. *International Perspectives on Sexual Reproductive Health*, 36, 122-31.

SAKYI, A 2013. Is Rapid Population Growth In A Menace Or blessing For Ghana.

Accessed on 20/16/2014 from: [vibeghana.com/2013/.../is-rapidly-growing-population-](http://vibeghana.com/2013/.../is-rapidly-growing-population-)

**menace-or-blessi..**

- SAPPOR, N & ESENA, R., K. 2013 Utilization of Skilled Deliveries In Ghana. Quality Improvement Issues Of Maternal Health. *International Journal Of Innovative Research And Studies*.2, 5.
- SCHULER, R., S., ROTRACH, E., MUKIRI, P., DOI, M. 2011. Gender Norms And Family Planning Decision Making In Tanzania: A Qualitative Study. *Journal Of Public Health InAfrica*. [Online]. Accessed on from: **[public health in africa.org](http://publichealthin africa.org)**.
- SENNOTT, C.AND YEATMAN, S. 2012. “Stability and Change in Fertility Preferences Among Young Women in Malawi.” *International Perspectives on Sexual and reference Reproductive Health* 38, 34-42.
- SHAH, N., M., SHAH, M., A., RADOVANOVIC, Z.1998. Partterns Of Desired Fertility And Contraceptive Use In Kuwait. *International Family Planning Perspective* 24,3
- SHAPIRO, M., INGOLS, C. & BLAKE-BEARD, S. 2008. Confronting Career Double Binds. *Journal of Career Development*, 34, 309-333.
- SHAPIRO, D. 2011. Women’s Education and Fertility Transition in Sub-Saharan Africa Accessed on 02/01/2013 from: **[econ.ia.psu.edu/papers/women/27/25](http://econ.ia.psu.edu/papers/women/27/25)**
- SHARAN, M. & VALENTE, T.,W.2002. Communication And Family Planning Adoption:Effect Of Radio Drama Serial Nepal.*International family planning perspectives*, 28,1.

- SHEHAA M., A. 2010. Awareness and Use of Contraceptives Among Saudi Women Attending Primary Care Centers in Al-Qassim, Saudi Arabia. *International Journal of Health Science*. 1, 11–21.
- SHETTY, P. 2012. Grey matter: ageing in developing countries. *The Lancet*, 397,1285 - 1287,
- SINGH, S& AND DARROCH, J., E.2012  
Adding It Up: Costs and Benefits of Contraceptive Services Estimates for 2012  
[Accessed on 05/04/2014from:www.guttmacher.org/pubs/AIU-2012-estimates.pdf](http://www.guttmacher.org/pubs/AIU-2012-estimates.pdf)
- SMITH, K., LAWRENCE, G. & RICHARDS, C. 2001. Supermarkets' Governance of the Agri-food Supply Chain: Is the 'Corporate-Environmental' Food Regime Evident in Australia? *International Journal of Sociology of Agriculture and Food*.17,140-161.
- SOLO, J., ODONKOR, M., PILE, J.M., WICKSTROM, J. 2005. Ghana Case Study: Give Them the Power, A Repositioning of Family Planning Case Study: ACQUIRE Report.
- STEPHENSON, R., BASCHIERI, A., CLEMENTS, S., HENNINK, M. & MADISE, N. 2007. Contextual influences on modern contraceptive use in sub-Saharan Africa. *American Journal of Public Health*, 97, 1233-40.
- STICKY, T. 2006. The Art Of Listening In The Therapeutic Relationship. *Mental Health Practice*, 9, 5.
- TABONG, T,F& ADONGO,P.,B. 2014 Understanding The Social Meaning Of Infertility And Childbearing: A Qualitative Study Of The Perception Of Childbearing And Childlessness In Northern Ghana. *BMC Pregnancy and Childbirth*,13,72.
- TAWIAH, E. 1997. Factors affecting contraceptive use in Ghana. *Journal of Biosocial Science*, 29, 141-149.

- TAKYI, B., K. 2001. Aids-Related Knowledge and Risk And Contraceptive Practices In Ghana: The Early 1990s. *African Journal of Reproductive Health*, 4, 13-27.
- TENKORANG, T., Y. 2012. Negotiating Safer Sex Among Married Women In Ghana. *Arch Sexual Behaviour*, 41, 1353-1362.
- TESTA, M., R. 2012. Family Sizes in Europe: Evidence from the 2011 Eurobarometer Survey Accessed on 03/04/2014 from: [www.oeaw.ac.at/vid/download/edrp\\_2\\_2012.pdf](http://www.oeaw.ac.at/vid/download/edrp_2_2012.pdf)
- TEYE, J., K. 2013. Modern Contraceptive Use among Women in the Asuogyaman District of Ghana: Is Reliability more Important than Health Concerns? *African Journal of Reproductive Health*, 17, 2.
- THE ACQUIRE Project. 2005. Moving Family Planning Programs Forward: Learning From Success In Zambia, Malawi, And Ghana. New York: The ACQUIRE Project/EngenderHealth.
- THOMPSON, E. 2007. What is Demography? Accessed on 03/07/2014 from: [www.suda.su.se/docs/What%20is%20Demography.pdf](http://www.suda.su.se/docs/What%20is%20Demography.pdf)
- TILAHUN, T., GILY, C., TEMMERMAN, M & DEGOMME, O. 2014. Spousal Discordance On Fertility Preference And Its Effect On Contraceptive Practice Among Married Couples In Jimma Zone, Ethiopia. *Reproductive Health*, 11, 27
- TRUSSELL, J., RAYMOND, G., E & CLELAND, K., EMERGENCY CONTRACEPTION: A last chance to prevent unintended pregnancy.
- UDDIN, M. M., KABIR, M., CHOUDHURY, S. R., AHMED, T. & BHUYAN, M., R. 1985. Rural-urban differential in contraceptive use status in Bangladesh. *Rural Demography*.

UNDP REPORT, 2013. Human Development Report.

Accessed on from <http://hdr.undp.org/en/mediacentre/humandevlopmentreportpre>

UNESCO REPORT, 2002. EFA Global Monitoring Report: Education for All – Is the World on Track? Paris: Accessed on 20/02/2011 from:

<http://www.gwu.edu/~igis/assets/docs/whoruletheglobe/mun>

UNFPA REPORT, 2008.Reducing Risks by Offering Contraceptive Services: Population Issues:Safe Motherhood:Contraception<http://web.unfpa.org/mothers/contraceptive.htm>.

Accessed on 20/02/2011 from: <http://www.unfpa.org/gender/empowerment2.htm>.

UNFPA REPORT, 2011. Promoting Gender Equality. Accessed on 20/02/2011 from:

<http://www.unfpa.org/gender/empowerment2.htm>.

UNFPA REPORT.2012. Costs and Benefits of Investing in Contraceptive Services in the Developing World.Accessed on 20/02/2011 from:[www.unfpa.org](http://www.unfpa.org).

UNFPA REPORT, 2013State Of World Population Report. Motherhood In Childhood

Accessed on 20/02/2014from:[www.unfpa.org/swp](http://www.unfpa.org/swp)

UNICEF, 2001. "Early Marriage: Child Spouses", Innocenti Research Centre, Innocenti Digest,7, Florence.

UN/MDGS REPROT 2012.Millennium Development Goals Indicators.

Accessed On 20/02/2012 From: [http://www.un.org/millenniumgoals/pdf/MDG\\_Report\\_2012.pdf](http://www.un.org/millenniumgoals/pdf/MDG_Report_2012.pdf)

UN REPORT, 2011.World Contraceptive Use.

Accessed on 20/02/2011from:[www.un.org/contraceptivr2011.htm](http://www.un.org/contraceptivr2011.htm).

- UPADHYAY, U., D.& KARASEK, D. 2010. Women's Empowerment and Achievement of Desired Fertility in Sub-Saharan Africa. *Demographic and health research* , 8.
- WATSON, S.&CONGER, C.2014. Ho the male birth control pill works. *Accessed on 20/02/2014 from. health.how stuff works.*
- WELAGA, P., DEBPUUR, C.& AWINE T.2008.The Effect of Birth Spacing On Child Survival in Kassena-Nankana Districts of Northern Ghana. *Accessed on 20/02/2011 from: [www http://hdr.undp.org/](http://hdr.undp.org/) <http://uaps2011.princeton.edu/papers/110944>.*
- WENG, H., H., BASTIAN, L., A., TAYLOR, H.,D., MOSER, J.,B., K.& AND OSTBYE, T. 2004.Number of Children Associated with Obesity in Middle-Aged Women and Men: Results from the Health and Retirement Study, *Journal of Women's Health*, 13, 85-91.
- WESTOFF, C., F. 2012. Unmet Need for Modern Contraceptive Methods. DHS Analytical Studies No. 28. Calverton, Maryland, USA: ICF International. Accessed on 20/02/2011 from: [www.measuredhs.com//AS28.pdf](http://www.measuredhs.com//AS28.pdf).
- WILDAF GHANA, REPORT, 2014.Scoping study for Parliamentary Advocacy Programme on Combating Early and Forced Marriage in Ghana. Accessed on 20/03/2014 from:[www.pgaction.org/.../2014-03-05-Final-Report-Scoping-study-on-Early-](http://www.pgaction.org/.../2014-03-05-Final-Report-Scoping-study-on-Early-)
- WIDMAN, L., M., A., WELSH, D., P., MCNULTY, J., K., LITTLE, C., K. 2006. Sexual Communication and Contraceptive Use in Adolescent Dating Couples.*Journal of Adolescent Health*, 39, 893–899.
- WILLIAMSON, L., M. PARKES, A., WRIGHT, D., PETTICREW, M.& GRAHAM, J., H. 2009. Limits to Modern Contraceptive Use among Young Women In Developing Countries: A Systematic Review Of Qualitative Research. *Reproductive Health Journal* 6,3

WILLIAMSON, 2013. Mine Workers Cry For Gov't Support.

Accessed on 05/29/2014 from: [ghheadlines.com](http://ghheadlines.com) › *Daily Guide*

WILEY, A., R. 2007. Connecting As A Couple: Communication Skills For Healthy Relationships. The Forum For Family And Consumer Issues, 12, 1.

Accessed on 10/29/2012 from: <http://ncsu.edu/ffci/publications/2007/v12n12007spring/indexv12n1may2007.ph>

WINKVIST, A., RASMUSSEN, K., M. & HABICHT, J., P.1992. A New Definition of Maternal Depletion Syndrome. *American Journal of Public Health*, 82,5.

WHO REPORT, 2011. Family Planning.

Access on 20/02.2011 from :[www.who.int/topics/family\\_planning/en/](http://www.who.int/topics/family_planning/en/).

WHO REPORT,2012. PMNCH Knowledge Summary #22 Reaching Child Brides The Partnership for Maternal, Newborn and Child Health REF 28.

WHO REPORT,2013. Profile of Reproductive Health Situation In Ghana.

Accessed on 20/02.2011 from:[www.afro.who.int/en/downloads/.../1805-reproductive-health-profile](http://www.afro.who.int/en/downloads/.../1805-reproductive-health-profile).

WORLD BANK REPORT, 2011. World Development Indicators.

Accessed on 20/02/2011 From:<http://data.worldbank.org/indicator>.

WORLD DEVELOPMENT REPORT 2012: Gender Equality and Development

Accessed on 20/02.2012 from:[reliefweb.int/report/world/world-development-report-2012-gender-equal...](http://reliefweb.int/report/world/world-development-report-2012-gender-equal...)

WORLD BANK (2012) : EDUCATION AND DEVELOPMENT.

Accessed 7 May 2012. [from<http://web.worldbank.org](http://web.worldbank.org)

WORLD BANK REPORT, 2013 End Extreme Poverty. Promote Shared Prosperity.  
Accessed 7 May 2014. *from: [www.worldbank.org](http://www.worldbank.org) › **About Us** › **Annual Report***

YANKA, K. 1992. IV additional Lore in Population Communication: The Case of the Akan in Ghana. *Africa Media Review*, 6, 1

YEBOAH, E., OTUPIRI, E., NAKUA, E., K& OWUSU-DABO, E. 2013. Contraceptive Side Effects: The Experiences Of Contraceptive Users In Five Major Public Health Facilities In Kumasi, Ghana Accessed on 25/06/2014 from:  
*<https://www.xcdsystem.com/ICFP2013/program/index.cfm?aID...494>*

YEBOAH, A., J., K & OBIRI -YEBOAH D. 2008. Practical Social Studies For Senior High Schools. Kwadwoan Publishing. Accra.

YEETEY, E., MAHAMA, E., NETTEY, E., ADJEI, G., SULEMANA, A., ASANTE, K., P & OWUSU-AGYEI, S. 2014. Predictors Of Reported Side Effects From Contraceptive Use Among Females In Predominantly Rural Communities In Central Ghana. Extended Abstract from the Kintampo Health Research Centre.

