SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

THE RELATIONSHIP BETWEEN CONTRACEPTION AND ABORTION IN GHANA AMONG WOMEN OF REPRODUCTIVE AGE; TREND ANALYSIS OF THE 2007 AND 2017 MATERNAL HEALTH SURVEYS

BY

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THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE MASTER OF PUBLIC HEALTH (MPH) DEGREE.

JULY, 2019.

DECLARATION

I, Nana Ama Asi Danso, declare that except for other works which have been duly acknowledged, this work is the result of my own original research, and that as far as I am aware, this dissertation, either in whole or in part, has not been presented elsewhere for another degree.

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(STUDENT)

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DR. DUAH-DWOMOH DATE

(ACADEMIC SUPERVISOR)

DEDICATION

First of all, I dedicate this work to the Lord Almighty who does wondrous things right in His time. I am equally grateful to my amazing husband, Boamah, for his immense support and motivation in times when I wanted to give up, my wonderful son Adepa and to my family for their support.

ACKNOWLEDGEMENTS

I wish to express my gratitude to Dr. Duah-Dwomoh for his patient supervision and vital support to the accomplishment of this study. I also thank the staff of the Biostatistics Department and the Population Family and Reproductive Health Department (PFRH), School of Public Health for their diverse support throughout this study.

ABSTRACT

Induced abortions continually contribute to the issue of maternal mortality in Ghana. The use of contraceptives by women of reproductive age is thought to aid in reducing the prevalence of abortion in the country. With these facts, this study seeks to establish the relationship between contraceptive use and abortion and determine how the two influence each other. Factors that have been influencing the prevalence of contraceptive use and abortion were also assessed in this study.

Gaining insight into the relationship between induced abortion, contraceptive use and the background characteristics of women of reproductive age will help in the introduction of feasible interventions targeting identified groups in the country.

The study was a trend analysis using data from the 2007 and 2017 Ghana Maternal Health Survey (GMHS). Statistical methods used in analyzing data were the modified Poisson with robust SE and Rao-Scot Chi-square of independence to determine risk factors.

Results from the study indicated that women who used some form of contraceptive were approximately 0.6 times less likely to engage in abortion procedures as compared to women who used no form of contraception over the past ten years (prevalence rate 0.58, 95% CI 0.52 to 0.64, $p<0.001$).

The study revealed that contraceptive use reduces prevalence of abortion, however, there was a significant decline in contraceptive use over the decade. Other factors such as marital status, educational level and age equally influenced the prevalence of contraceptive use and induced abortion over the decade.

The Ministry of Health together with the Ghana Health Services and stakeholders (NGO's) should continue with interventions aimed at reducing the prevalence of induced abortion.

Also more work need to be done to increase the prevalence of contraceptive use amongst women of reproductive age by the Ministry of Health and stakeholders.

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LIST OF ABBREVIATIONS

CPR-	Contraceptive Prevalence Rate
EAs-	Enumeration area
ECP-	Emergency Contraceptive Pill
GDHS-	Ghana Demographic Health Survey
GMHS-	Ghana Maternal Health Survey
IUD-	Intra Uterine Device
MDG-	Millennium Development Goal
MVA -	Manual Vacuum Aspiration
NPP-	National Population Policy
PHC-	Population and Housing Census
POPs-	Progestin-only pills
SSA -	Sub-Saharan Africa
STDs-	Sexually Transmitted Diseases
TFR –	Total Fertility Rate
UNFPA-	United Nations Population Fund
UNICEF-	United Nations Children's Fund
W.H.O-	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

For over decades abortions have existed in the cultures of every group or community worldwide with the aim of eliminating unwanted or unintended pregnancies which could bring shame or disgrace upon the woman in question. Abortion can be termed as a fetal termination been it spontaneous or induced, such that it does not undergo a full term pregnancy. However the availability and accessibility to safe practices for abortive procedures in Africa as a whole remains a grave health issue as some abortions lead to death making it one of the leading factor for maternal deaths.

Maternal mortality in developing country has continually remained a major problem. Records indicated by World Health Organization (WHO), the United Nations Children's Fund (UNICEF), World Bank and the UNFPA estimate about Two Hundred and Eighty Seven thousand (287,000) women worldwide do not survive conditions related to pregnancy (WHO,2012). Sub-Saharan Africa has the highest maternal mortality ratio in the world of 500 per 100,000 births.

Globally, an estimate of 47,000 of deaths yearly are due to abortions that are not safe making abortion a major contributor maternal mortality (World Health Organization, 2011). It is however important to note that not all disability, death or complication are from unsafe abortions. The mortality and morbidity resulting from unsafe abortion is dependent on the mode of use, the experience of the health professional, the health and safety of the environment and instrument, the health of the woman and the phase of pregnancy (WHO,

2004). In the developing countries an estimate of about 5 million women yearly are hospitalized because of problems associated as a result of unsafe abortions. This also results in long and short-term health complication (Singh, 2006) .

WHO defines unsafe abortion as a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards or both.(WHO,1997). Almost 21.2 million unsafe abortions take place yearly in some regions of the world that are still developing (Shah & Ahman ,2004; WHO, 2012), also stated that over 99% of all death that are related to abortion takes place in developing countries. In the sub-Saharan region of Africa, it has been estimated that one in every 150 women will die from unsafe procedure (WHO, 1996).

In spite of the fact that only 24% of worldwide abortions are done in sub-Saharan Africa, about half of deaths associated to this method occur in the region (Singh, 2006; WHO, 2007). In almost all the countries in the sub region, women's right to safe abortion and post-abortion care are limited by socio-cultural barriers, restrictive laws, and also deficient resources to cater for safe abortion.

The objective number 5 of the Millennium Development Goal (MDG) sought to cut down three quarters of maternal deaths in developing world without dealing with complications from unsafe abortion or putting necessary measures in place to prevent maternal deaths. (Hu , Grossman , Levin , Blanchard , Adanu ,& Goldie, 2010).

Complication in abortion are a massive contributor to maternal mortality and morbidity in Ghana. The Ghana Medical Association stated that, abortions are the principal cause of maternal mortality and accounts for about 15–30% of maternal deaths (Asamoah , Moussa

, Stafstrom & Musinguzi ,2011;Billings, Ankrah , Baird , Taylor , Ababio & Ntow .,1999). Furthermore, with each woman that does not survive from an unsafe abortion practice, it is estimated that about fifteen (15) women suffer long and short-term morbidities (Eades, Brace, Osei & LaGuardia, 1993).

Abortion is a criminal offense in Ghana and its regulated by Act 29, section 58 of the Criminal code of 1960 which was amended by PNDCL 102 of 1985("Consolidation of Criminal Code of Ghana", 1960). In this law, the section 2 however states that, abortion may be performed by a registered medical practitioner specializing in Gynecology or any other registered medical practitioner in a government hospital or a private hospital or clinic registered under the Private Hospital and Maternity Home Act, 1985 in instances where the pregnancy is as an outcome of a rape issue or incest, when there is a malformation of the fetus or to protect the physical and mental health of the mother. ("Consolidation of Criminal Code of Ghana", 1960).

The training of midwives and their services proved to effectively and safely contribute to post-abortion care in South Africa (Sibuyi, 2004) .In Ghana, a policy reform in 1996 allowed midlevel practitioners with midwifery certification and skills to perform abortion in Ghana(Clark, Mitchell & Aboagye .,2010). In order to see to it that these practitioners have the knowledge and skills necessary to execute the service, the Manual Vacuum Aspiration (MVA) in 2009 was added to the national curriculum for midwifery education to train midwives with this technique of saving lives (Rominski & Lori, 2014).

Even with the establishment of the National Population Policy (1969), which was revised in 1994, the population growth of Ghana still remains high at 2.9% to 3.1%. Some targets set be the policy include the decline in Total Fertility Rate (TFR) by 3.0 by the year 2020.

This policy equally seeks to accomplish a 50% Contraceptive Prevalence Rate (CPR) for modern methods by 2020 (National Population Policy, 1994).

The Multiple Cluster Survey report (2011) indicates that, use of contraception is necessary to the well-being of children and women, to avoid early, late, unwanted pregnancies and regulate the number and spacing of giving birth. With the up rise in unplanned sexual activities, sexually active individuals are at risk of infections, unplanned pregnancies, unsafe abortions, and maternal deaths making the realization of good reproductive health almost unachievable.(Hagan & Buxton, 2012; Eliason et al., 2014).

In 2014, the Ghana Demographic Health Survey (GDHS) estimated that about 96.5% of adolescent females have knowledge of current family planning methods, yet, there is a low recorded use of contraceptive of about 8.7% in all women (GDHS, 2014). In spite of the extensive information of contraceptives, the patronage remains minimal; which results in unwanted pregnancies leading to abortions and in some instances death.

Some researchers have proposed that factors such as income and education might have an effect on family planning methods. For instance, Asiimwe and others in 2014, reported that wealth index and educational level were considerably related to the use of contraceptives; results from the study revealed, women with high educational background were more likely to use a family planning method. Other researchers have also revealed that another important factor in the usage of family planning services is religion which affect how women will accept and use family planning services. (Srikanthan & Reid, 2008).

This study however seeks to find out if over the ten years contraceptive use has indeed reduced the rate of abortions in Ghana using data from the Ghana Maternal Health Survey for 2007 and 2017.

1.2 Problem statement

Over the past twenty years, the world has strived some attempt in addressing the issue of poor maternal health care via the support and provision of safe motherhood services including safe abortion and contraceptive. World Health Organization (WHO) led several policies and protocols that was discussed and considered to curtail abortion issues (Grimes & Creinin, 2004). Some of these policies include enforcing laws and policies on abortion which should protect women's health and their human rights, the removal of programmatic barriers that hinder access to and timely provision of safe abortion care and access to safe abortion services in early pregnancy performed by certified health workers as a primary-care-level procedures (WHO,2017).

Bongaarts and Westoff, in (2008) argued that, if contraceptives were readily available and correctly and consistently used by women who wants to avoid pregnancy, maternal deaths would decline by an estimated 25–35%. They further stated that, fifty-five (55) million unintended pregnancies in developing countries happens every year to women who do not use any contraceptive method whiles 25 million occur as a result of incorrect use of a contraceptive method and method failure.

However, the issue of abortion over the years still remain the same with more methods and effort put in place to reduce the practice. The use of contraceptives have proven to be very effective in preventing unintended pregnancies. This study seeks to establish a relationship

between contraception and abortion examining how these two affect each other and if indeed over the years there have been either an increase or decrease in abortion rate and contraception rate. It also goes further to determine the factors associated with changes in contraception and abortion rates over the years.

1.3 Justification of study

Incomplete abortion and abortion-related conditions contributes to the high incidence of maternal mortality in Ghana. The rate of the death amongst mothers was estimated at 540 deaths per 100,000 live births. (WHO, 2007).The 2007 GMHS report states that about 11% of pregnancy-related mortalities are as a result of abortion in Ghana. Despite the leniency in the laws of Ghana regarding abortion and accessibility to healthcare centers, some women still find it difficult accessing safe abortion due to many factors .Even though contraceptive use is readily available both modern and traditional methods, to help prevent unwanted or unintended pregnancy levels of abortions are still very high. Several studies have shown increase in contraceptive use reduces the risk of abortion since it helps prevent unintended pregnancies.(Westoff, Charles & Florina, 2008;Miller & Valantine,2006). With increasing evidence on the complications related to abortion, the need for interventions to boost contraceptive use is very necessary. This study seeks to reveal if there is an association between contraceptive use and abortion. This is to aid revise or strengthen existing interventions and to help policy makers make appropriate informed decision on the affecting factors and on how to implement change based on identified factors. Scholastically, the findings from this research will contribute to the information on reproductive health in Ghana especially on abortion and contraception.

1.4 Conceptual framework

The decision to abort a pregnancy depends on various factors including one's religion, ethnicity, marital status, educational level, legality of method and the person's wealth index. These same factors equally affect the use of contraceptives by women including source of family planning. However women who have abortions usually adopt some form of contraception after the procedure to avoid another incidence, also failure of contraceptives can also lead to abortion.

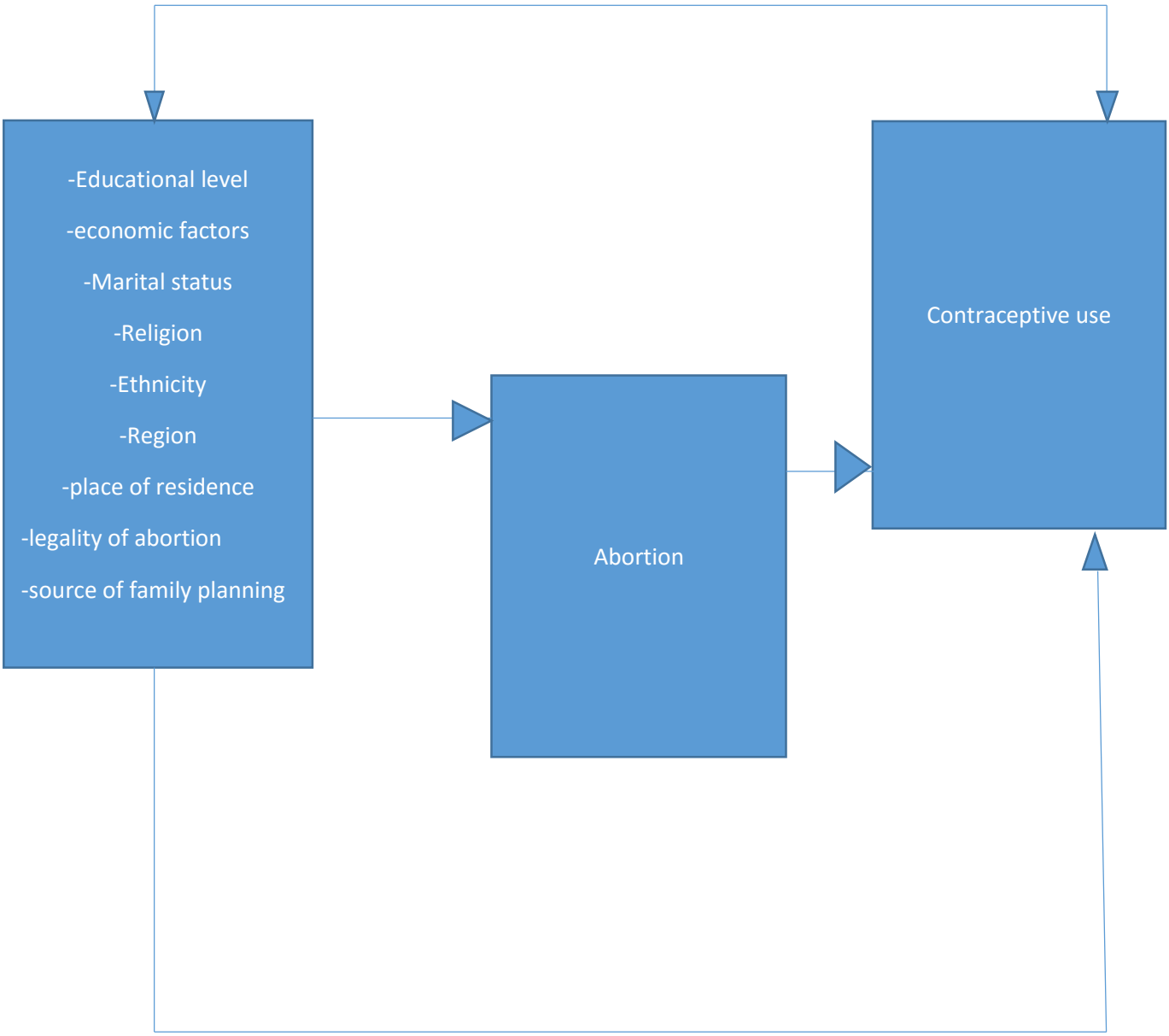

Figure 1: Conceptual Framework

1.5 Objectives

The principal focus of this study is to assess the relationship between abortion and contraception amongst women of reproductive age in Ghana.

Specifically, the study seeks to:

i. Determine the change in abortion rate among women in Ghana between 2007 and 2017.

ii. Determine the change in contraception rate among women in Ghana between 2007 and 2017.

iii. Determine the factors that have been consistent in influencing the prevalence in contraceptive use in 2007, 2017 and 2007-2017

iv. Determine the factors been consistent in influencing the prevalence in abortion in 2007, 2017 and 2007-2017.

1.6 Research questions

In attempt to realize the above, the following questions will be addressed;

i. Has the percentage of women of reproductive age (15-49) years who had an abortion in the last 10 years (2007-2017) changed? What is the estimate of this change?

ii. Has the percentage of women of reproductive age (15-49) years who used contraceptive in the last 10 years changed (2007-2017)? What is the estimate of this change?

iii. What are the factors that have been consistent in influencing the prevalence in abortion rate between 2007 and 2017?

iv. What are factors that have been consistent in influencing the prevalence in contraceptive use between 2007 and 2017?

CHAPTER TWO

LITERATURE REVIEW

2.1 Abortion Worldwide

WHO estimates that, within 2010 and 2014, 55.9 million abortions were performed with 49.3 million in less developed countries and 6.6 million in developed countries. Generally, 35 abortions per 1,000 women within the ages of 15-44 takes place each year over the world; this means a woman would have at least an abortion in her life.

Research done by WHO and the Guttmacher Institute revealed that over, 25 million of abortions performed are highly risky which is about 45% of all abortions within 2010 and 2014 with a high percentage taking place in underdeveloped countries. Worldwide, the approximated percentage of abortions rose by 11% between 1990–1994 and 2010–2014, from 50.2 million to 55.9 million. Over the years, the proportion of women within reproductive age (40%) have risen steadily indicating an increase in abortion rate. Automatically, the contraceptive use equally increased, however the demand gap by the increasing number of women who needed some form of family planning method were not met leading to increased abortions worldwide.

Unsafe abortion is a global issue since it leads to and is a high contributor to maternal deaths worldwide. The termination of any pregnancy by unskilled persons and or in a setting that lacks adequate medical standards and equipment is termed unsafe abortion.

Regions in the world have different legal reasons for addressing abortion. In the developed countries, abortions are completely legal and most often safe however for the developing

countries access to safe abortion is restrained and at times inaccessible leading to its increased incidence of unsafe abortions.

Motives behind having abortion are usually due to age and marital status in addition to health and socioeconomic factors. A study conducted by Chae and others showed that the principal motives for abortion by women across over 13 countries (note these countries have different socioeconomic factors and abortion-related laws) were social and economic concerns, high parity and spacing of pregnancies respectively. Additional related reasons included partner's acceptance and the health status of the woman. However for three countries from Africa included in the study their main motives seem to differ; women gave concern to being young and raised concerns about early pregnancy, education and parent's reaction. Furthermore for these countries regulating size of the family was the least reason for abortions where the need for large families is dominant by both sexes.

The involvement of part of the other counterpart (men) equally affects a woman's decision to have an abortion and its safety. To clarify this, a research in Nigeria revealed that the absence of the partner's backing for the procedure has been associated with late abortions and the services of unqualified personnel. Consequently other studies in Uganda and Ghana showed that the support of the partners actually led to safe abortion reason being the partner paying for the procedure.

2.2 Abortion in Africa

The issue of unsafe abortion continues to remain a life-threatening issue in the health of women. Abortion when done in the right environment with appropriate qualified personnel is considered harmless among most medical procedures. In other parts of the world where

accessibility to safe abortion is within reach there is less risk of complications and death however in Africa the issue is quite different with unsafe abortions claiming lives of women.

Abortion still remains one of the largest contributing factor of maternal deaths with no exception of Africa. Any woman in Africa of reproducible age after surviving many childhood health-related hurdles has to deal with risks associated with their reproductive health. The WHO estimates, one out of 11 females will die or have a complication from a pregnancy as to 1 out of 4000 in the West of Europe.

Estimating from the years 2010–2014 over 8.2 million of women induced abortions every year within Africa. Rate of abortion per annum for the continent was recorded as 34 per 1,000 women of child-bearing age (15–44). The rate of abortion in women who are married is approximately 26 per 1,000 and the rate for women who are not married is 36 per 1,000. The yearly rate of abortion is quite different for sub-regions in Africa with the of 2010–2014 31 per 1,000 women in Western Africa to 38 per 1,000 in Northern Africa, the rates in Eastern, Middle and Southern parts of Africa are almost equivalent 'to the regional average of 34 per 1,000. The percentage of pregnancies that result in abortions for regions in Africa are 12% for Western , 24% for Southern, 13% for Middle,14% for Eastern and 23% for Northern Africa.

About 93% of women in Africa are bounded by abortion-restricted laws and in countries where abortion is legal, are under special conditions with a handful of women accessing safe and legal abortion.

Only four countries in Africa have somewhat lenient abortion laws with Zambia permitting abortion for health, social and economic reasons, with Cape Verde, South Africa and Tunisia permitting abortion without restraint as to motive but with gestational limits.

2.3 Abortion in Sub-Saharan Africa

Facts have shown that abortion in Sub-Saharan Africa (SSA) is seen as a contraceptive practice for spacing births with both the older and younger women practicing. For areas within the SSA where abortion is accessible, the use of contraceptives are minimal and abortion looks to be the ultimate option to spacing and limiting childbirths. Women living in rural areas are no exception, engaging in very harmful procedures rather than contraception. Studies conducted though few revealed that increased abortions can be associated with less accessibility to modern contraceptives, societal negative influence on pregnancy out of wedlock, low socio-economic status of women, access to novel abortion practices and traditional acceptance of abortion. In spite of the ideology that wider use of contraceptives will reduce rates of abortion, the study disagrees and insinuates abortion will still serve as an option for planning families and spacing births within the SSA region.

The notion that data on abortion remains "spectacularly under-measured and under-researched" (Caldwell & Caldwell, 2003) around the world is no different for SSA .On the other side, data remain available on contraceptive use in SSA countries through trend analysis while those on abortion are almost unavailable. Some countries in the world made abortion legal to deal with contraceptive failures, for the health of the woman and fetus as well as a reproductive right yet in SSA abortions and even attempts to abort was a criminal act. Guttmacher Institute in 2009 reported that "Abortion is not permitted for any reason in 14 African countries (and) in nine countries, abortion is generally allowed only to save the

life of the woman". So far only South Africa has made abortion legal in SSA with other countries like Ethiopia relaxing its restrictions. Other countries like Benin, Chad, Guinea, Mali, Niger, Swaziland, and Togo have equally amended their abortion laws and policies under given situations (Boland & Katzive , 2008). Studies conducted in Nigeria in relation to its high incidence of induced abortion in SSA revealed that 760,000 abortions occur every year with one in seven women attempting an abortion. Other surveys in Uganda revealed over 297,000 induced abortions are done each year.

2.4 Abortion in Ghana

In Ghana abortion is permitted by law when pregnancy results from incest, rape, defilement, if the pregnancy jeopardizes the health of the woman and when there is a chance of fetal anomaly. The authorities responsible for healthcare in Ghana which are the Ministry of Health and Ghana Health Service served out the necessary guidelines for the effectiveness and safety of abortion practices in the country. The protocol which was approved in 2006, states clearly the required elements of complete abortive care and still advocate for the procedure to be done in the first three months from conception. The 2007 Maternal Health Survey report indicates about 14.5% of Ghanaian women have an induced abortion (15 abortions per 1,000 women) giving a rate of 0.4 abortions per woman. Also the 2017 Maternal Health Survey reports over 19.6% of women of reproductive age having an induced abortion (20 abortions per 1,000 women). The main contributing factor for most abortion is accidental pregnancies as a result of unprotected sex within a woman’s fertile period.

Several studies conducted in Ghana revealed similar characteristics of women who engage in abortion, they include: being single, women in their twenties, women of high economic

status and women who reside in urban regions. Findings from these studies also proved that the most reason most women cited for committing abortions was insufficient funds to cater for the child, desire to postpone childbirth, space pregnancies, have a desirable family size and to continue schooling or work. Findings from the GMHS reports revealed the chances of having an abortion is prominent in women of higher economic status than those of lower economic status as well as those living in urban areas to rural areas.

Unsafe abortions still remains a national threat accounting for 11% of all maternal deaths (GMHS, 2007) meaning in every 1,000 women of reproductive age, 110 will die from an abortion procedure gone wrong. Ideally abortions are considered safe when performed in the right environment (accredited health center) with the required appropriate equipment or procedure and with a well-trained health service provider (midwife, doctor or nurse). Patronage of unsafe abortion in high due to number of reasons include the stigma and shame attached to abortion and neglect from loved ones and society.

Various methods have been adopted for performing abortion which are both safe and unsafe. Unsafe abortions may be performed by inserting objects such as twigs, roots or catheters into the uterus; non-prescribed medications or pills; ingestion of dangerous substances; unskilled persons performing curettage and dilatation (Ahman & Shah, 2004). According to the 2017 GMHS report about 27% of abortions performed were induced by means of non-medical methods while 24% used dilation and curettage (D&C) or dilation and extraction (D&E), 20% patronizing mifepristone and misoprostol (Medabon), and 18% with misoprostol only (Cytotec).

2.5 Factors influencing abortion rate in Ghana

Studies conducted by researchers in the Ashanti region of Ghana have shown that factors which influence abortion include lack of knowledge of safe abortion services; poor socio-economic conditions; religious and cultural perception; societal humiliation associated with unintended pregnancy; having children out of wedlock; evading parental displeasure and anger; dreams to further education. The study included 111 participants using key informant interviews and focus group discussions. Participants revealed they would have patronized safe abortion services only if they knew was legal in Ghana. Health officials included in the study (midwives and doctors) equally revealed their lack of knowledge in reformed policies making abortion somewhat legal in the country. Also participants stated their reason for aborting their pregnancies was to further their education, avoid parental displeasure and societal stigmatization. They also raised concern on religious and traditional disapproval on abortion.(Atakro et.al,2019). Another study conducted by in the Tema Metropolis had similar findings which include economic instability, plans to further education, neglect by family, wrecking family name, neglect from male partner and failing of contraceptive.(Acquah ,2006) . The 2007 GMHS equally reports on the factors that influence abortions with economic instability been the highest , that is one out of five women terminating pregnancies due to financial constraints and insufficient funds to cater for the infant. About 13% of the respondents indicated they want to delay child birth , 11% revealed it was because they wanted to further their education and 9% mentioned they did not want to lose their jobs as reasons for aborting their pregnancies. A number of women (9%) also gave reason as not in love with the father,6% said their partner's denied fathering the child and less than 5% of women gave reason to health complications.

2.6 Contraception

2.6.1 Definition of Contraceptives

The Merriam-Webster dictionary defines contraceptive as the deliberate prevention of conception or impregnation using drug, object or method. Contraception methods can be grouped into two which are traditional and modern methods

2.6.2. Modern methods

2.6.2.1 Barrier method

Barriers used to prevent pregnancies include male and female condoms and diaphragms. The male condom is rolled unto an erect penis and is made up of thin rubber sheath with some lubricant. It is worn before intercourse and semen ejaculated is collected at tip of the sheath. On the other hand the female type is a loosely-fitted polyurethane sheath which is also lubricated with a pliable ring at both sides. Before intercourse, the female condom is inserted into the vagina to accumulate seminal secretions preventing them from entering the womb. Another device used is the diaphragm; a dome-like shaped silicone with a pliable rim which is put into the vagina to prevent seminal fluids from entering the womb by covering the cervix. (Stewart et al, 2013)

2.6.2.2. Hormonal methods

This modern method uses hormones in its quest to prevent pregnancies. They include the oral contraceptive pill, emergency contraceptive pill, progestin-only pills, injectable birth control and implantable rods. Oral contraceptive consists of man-made hormones that prevents ovulation by elevating levels of estrogen which prevents the releasing of eggs. Women take pills daily at the same time frame and stops only when she desires to be

pregnant. The pill taken to prevent conception after intercourse and which proves most effective when taken earlier than later after sex is the Emergency Contraceptive Pill (ECP). Progestin-only pills (POPs) equally prevent conception by thickening mucus in the cervix hindering the entry of sperms into the uterus and fallopian tubes. The injectable birth control contains progestin administered through an injection in the arm or buttocks once every 3 months. (NCBI, 2010) The implantable rods made up of plastic and are matchstick-sized implanted into the upper arm of a woman to slowly release progestin hormone and can stay for up to 5 years before removal. (FDA, 2011).

2.6.2.3 Intra Uterine Device

The IUD is a small T-shaped flexible device inserted into the uterus to prevent implantation and hence avoiding pregnancy. Even though IUD's come in several forms the one commonly used is the nylon plastic coil. It can stay in the uterus for as long as possible and can be removed after the duration of effectiveness. Some different types of IUD include copper IUD and hormonal IUD. (FDA, 2011).

2.6.2.4 Sterilization method

There are two types of sterilization; male sterilization called vasectomy and female sterilization called tubal ligation. Tubal ligation is a surgical procedure where the fallopian tubes are cut and then tied to prevent the sperm from reaching the egg for fertilization (Stewart et.al, 2013). For vasectomy the vas deferens are cut and tied preventing sperms from moving into the penis from the testicles during intercourse.

2.6.3 Traditional methods

Withdrawal of the penis during intercourse (coitus interruptus), entreats the man to have full consciousness and control before he ejaculates. It is a method that has a very low dependence rate since some men have sperm in their pre-ejaculation fluid. (Kilick et. al., 2011). During exclusive breastfeeding the mother is considered safe as breastfeeding delays ovulation, however it differs from woman to woman. Some ovulate some months or weeks after delivery while others ovulate only when they start complementary feeding. This condition serves as a form of contraception for breastfeeding helping them avoid unwanted pregnancies (Kennedy, Rivera & McNeilly, 1989). The other method is the periodic abstinence method which require the female to assess her fertile and infertile days before engaging in unprotected sex. Ejaculated seminal fluids can stay in the womb for up to five days hence having unprotected sex during the unsafe periods can result in pregnancy.

2.7 Contraception worldwide

Use of some form of contraception is patronized by majority of women especially those married or in some sort of union. In 2015, a study done by the United Nations on trends in contraceptive use worldwide revealed about 64 % of married or women in relationships used some type of contraceptive. Yet, use of contraception was relatively small in developing countries (40%) especially in Africa (33%). Contraceptive use was actually higher in other parts of the continent with Oceania having 59% and North America with 75%. Due to the low use of contraceptives, one in 10 married or in-relationship women in the world have an unmet need for family planning. Over the world as at 2015, 12% of women were found to have an unmet need for family planning; desire to space or stop

giving birth yet not on any form of contraception. Unmet need in developing countries stand at 22% with SSA having the highest level of 24% (twice the world mean in 2015).amongst the types of contraceptives, modern contraceptives are the most opted. In 2015 worldwide, about 57% of married women of reproductive age use some sort of modern contraception, making about 90% of contraceptive consumers. There still remain gaps amongst couples who want to avoid conception in countries where modern contraceptives are rather low as traditional contraception are the most used.

Some regions in Asia have very high levels of contraception patronage especially in the Easter and South-Eastern sectors. China alone has an estimate of about 83% with about 10 other Asian countries with an overall prevalence of 70% and above. Countries with the least prevalence were Afghanistan and Timor-Leste with 29%. The prevalence in about 13 European countries, Canada and the United States of America as at 2015 was above 70% yet some three countries in Europe have low prevalence at 50% and below (Bosnia and Herzegovina, Montenegro and the former Yugoslav Republic of Macedonia). The Caribbean and Latin American countries have a fair moderate use of Guyana and Haiti (below 50 per cent in 2015) with the most populated countries (Brazil, Colombia, Mexico and Peru) with levels at 70% and more.

2.8 Contraception in Africa and Sub-Sahara Africa

The areas with prevalence of 50% or more in Africa are chiefly islands (Cabo Verde, Mauritius and Réunion), or found in the northern parts of (Algeria, Egypt, Morocco and Tunisia), South of Africa (Botswana, Lesotho, Namibia, South Africa and Swaziland) and 5 countries in East Africa (Kenya, Malawi, Rwanda, Zambia and Zimbabwe).

Alternatively, about 27 countries have a contraceptive prevalence less than 20% with Nigeria taking the lead with just 16% and Ethiopia at 36 %.(UN, 2015).

Patronage of the various forms of contraception has been minimal in SSA despite evidence of some increase. Quest to find the reasons for the poor patronage of contraceptives led researchers to find influences of family planning in various regions and countries across Africa. Okezie ,Ogbe and Okezie in 2010 investigated the social and economic factors of family planning methods among rural women in Ikwuano Local Government Area (LGA) of Abia State in Nigeria. Data from the study was analysed using descriptive statistics and results indicated education had a role in the use of contraceptives in women .The study also proved education limited fertility since it delayed early marriages and increased the women chances of working for themselves. Besides education, the research also revealed an important relation with mass media (radio, TV's) and family planning methods. A similar study done in Uganda by Asiimwe ,Ndugga,Mushomi and Ntozi in 2014 also dived into the socio-economic and demographic factors related to modern family planning patronage among women aged 15-24 and 25-34 . Significant factors associated with contraceptive use were proximity to facility and geographical location according to the study. Another study by Palamuleni (2014) in Malawi revealed age, participant's and partner's approval of contraceptive use , talk on contraception with partner, parity , working status, educational level and proximity to a health facility were amongst the major elements of contraception patronage. The practice of contraceptives among women aged 15-19 years was minimal since females within that category were possibly newly engaged and saw marriage as a tradition to bear children. Nevertheless as they matured, the use of

contraceptives rose due to their quest to space children and usage fell when they got older possibly due to sexual inactivity.

2.9 Contraception in Ghana

The level of modern contraceptive use in Ghana in 2015 was 28.60% by women of reproductive age (15-49. The prevalence of contraceptive in Ghana over the years at its highest value of 34.70 as at 2011 and its lowest at 9.50 in 1980. Recently, research persons estimated prevalence at 17% in both public and private health centers in a Ghanaian community (Adjei et al., 2015) recently. In a recent effort, researchers found a prevalence of use at 17% in public and private health facilities in a peri-urban community in Ghana, lower than the expected national mark of 23.3%. Also, the general prevalence estimated was 21% almost analogous to the prevalence by the GDHS yet below the national goal of 23.3% (MOH, 2012). The 2014 Demographic and Housing Survey (DHS) reported the prevalence of modern contraceptive use stands at 22%. It also revealed contraceptive use was lower among women aged 15–19 (19%) and women age 45–49 (18%).

According to the 2007 GMHS report, one in five women aged 15-49 use some form of contraception that is 21%. The report also indicated that modern contraceptives (14%) are now a more preferred choice compared to traditional contraception (7%). Furthermore the prevalence of contraceptive has risen for the past 20 years from 12% to 21% indicating a 70% growth. Contributing to this increase was between 1988 and 1993 when usage rose by 46% over a 5 year period. However between 1993 and 1998 prevalence receded from 18.9% to 18.0%.

Some factors in Ghana that affect contraceptive use include religion, culture, beliefs, socio-economic status and the media. The wealth status and work of the woman also determines her ability to afford and access contraceptives. Also the marital status of the woman has an impact on them accepting and using contraception.

Amongst the types of modern contraception injectables in the form of hormones, pill and male condom are the most popular and is patronized by 3-4% of women. The other methods which include intra-uterine device (IUD), tubal ligation, implants and lactational amenorrhea used by 1%. Periodic abstinence remains the most patronized contraception method used by 5% of women between the ages of 30-34. The survey also revealed a significant correlation between contraceptive use and children alive, that is 9% for women with no children and 19% for women with 3-4 offspring. The educational level or status of the women also has a positive influence on contraceptive use that is 10% for no educational background to 17% for women with secondary education as their lowest level of education. Similarly, wealth index in women follow the same trend as educational level.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This study is a secondary data analysis of the 2007 and 2017 Maternal Health Survey (MHS) data on women and households. The MHS 2007 report states the study sample was mapped out to represent the whole country with a sample of about 1600 primary sampling consists of all the ten regions in Ghana. The second phase of the interview included 400 clusters selected randomly from the 1600 cluster in the first phase. Over 10,858 households were successfully interviewed of women ranging from 15-49 years of age. Out of 10,627 who were eligible for the interviews, 10,370 of them were interviewed yielding a 97.6% response rate.

The MHS 2017 report also included all ten regions in the country sampling over 900 enumeration areas. Over 27,000 households were mapped out with 26,324 interviewed, also out of 25,304 eligible women 25,062 were successfully examined resulting in a 99% response rate.

The paramount methods used in analysing the data were descriptive analysis, Rao-Scott Chi-square of independence and Poisson with robust standard errors.

3.2 Sources of Data

The data for this study was acquired from the MHS 2007 and 2017 surveys. The data specific to this study was drawn from responses to the independent questionnaire filled by the women for 2007 and 2017. The raw datasets was obtained from the DHS Programs. Permission was granted for use of this data after a request indicating the title, objectives

and proposed analysis was submitted. The dataset was studied by a principal investigator and appropriate variables relevant for the study were identified, extracted and analysed using STATA version 15.0

3.2.1 Sample Size and Description

Ghana at the time of the survey had ten regions (Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong-Ahafo, Northern, Upper East, and Upper West) and the 2017 GMHS was intended to give estimations of the reproductive health status of the country. It also took into account the rural and urban regions for the three zonal levels which are the Northern, Middle and Coastal belts. The 2010 Population and Housing Census (PHC) frame was used as the sampling frame for the survey. The frame consists of records of census enumeration areas (EAs); an area that covers over 161 households designed for the PHC. It must be noted that the mean size of rural enumeration areas is lower than urban enumeration areas that is 114 households and 185 households respectively. Components of the sampling frame includes data of the EA's site, category of residence that is whether urban or rural and the approximated figure of residential houses.

The 2017 GMHS model was stratified and designated from the sampling frame in two stages. The initial stage consisted of 900 EAs with 466 EAs in urban areas and 434 EAs in rural areas. A task was then done involving households in all selected EA's with the resulting lists serving as a frame for selection in the subsequent stage. The register was piloted by 20 teams including an overseer, 3 mappers, and a driver. A total number of 30 houses were chosen from each group to sum up to 27,000 for the sample size. Non-respondent households were not admitted and the women's questionnaire consisting of women between the ages 15-49 was used.

Over 27,000 households were mapped out with 26,324 interviewed, also out of 25,304 eligible women 25,062 were successfully examined resulting in a 99% response rate. Data collected on women's knowledge and use of contraception and induced abortion.

For the 2007 data, the ten regions of Ghana were included in the study with 1600 principal sampling units (2001 Population Census) through rural and urban zones as well. The approximated sample size was calculated from the 2003 Ghana DHS survey and projected a yield of 150 households per unit.

Ghana Statistical Service and Ghana Health Service officials were engaged in the mapping and listing of the 1600 selected clusters. The initial phase of the collected data involved 227,715 households with questionnaire given to identify mortalities that happened in the 5 years before the survey involving women aged 12-49. The subsequent phase consisted of a verbal autopsy questionnaire to houses selected in the initial phase with death of a woman between ages 12-49 serving as a marker.

Women aged 15-49 were chosen from 400 clusters and categorized into region and rural-urban residence giving 10,858 successfully household interviews and 10,370 individual interviews. It is key to note that women formal populations (those in hospitals, army barracks, etc.) and households residing in refugee camps were not included in the GMHS sample.

3.2.2 Questionnaire Design

The 2007 survey consisted of four different questionnaires which were pre-tested for one week with 30 women and translated into three different Ghanaian languages (Twi, Ga, and Ewe).

The 2017 GMHS survey used 3 different questionnaires which are the Household Questionnaire, the Woman's Questionnaire, and the Verbal Autopsy Questionnaire. The survey procedure was reviewed and was given approval by the ICF Institutional Review Board.

The questionnaires were translated into three main Ghanaian languages (Twi, Ga and Ewe)

3.2.3 Data Collection

For the collection of the 2007 MHS data, work on the field took about ten months, from April 2007 to January 2008 to be completed by 35 interviewing teams with over 30 supervisors. Team members were recruited and trained by the Ghana Statistical Service and Ghana Health Service. Criteria used for the selection of individuals for the survey included level of education, previous field exposure, maturity, sociability, and been multilingual or bilingual.

The 2017 MHS data collection spanned over four months from 15 June to 12 October, 2017. Information collected was done by 25 field teams, comprising of 1 supervisor (male or female), 4 interviewers (all female), and 1 driver. Criteria for selection of interviewers also included their multi or bilingual ability and participation in previous surveys. . Team members were recruited and trained by the Ghana Statistical Service, Ghana Health Service and ICF.

3.2.4 Quality Control

Supervising and monitoring of teams during the survey led to the authenticity of data collected. Leaders of the various teams were held liable for their team's performance. The field coordinators from GHS and GSS also regulated teams with some Macros staff joining

in the surveillance. Every fortnight, data quality tables were run on data that had been transferred into the system for systematic errors. Also a Computer-Assisted Personal Interviewing system was used by team supervisors to help curb the menace of duplicated cases and error messages.

In this study data used were from only participants who responded to all variables. All error entries and missing values for at least an observation were dropped. The final sample sizes used for the analysis were; 10,370 and 25,062 respectively for 2007 and 2017.

3.3 Data Analysis

For this research some of the study variables were recoded and others calculated to ease analysis and to help make interpreting data concise and precise.

3.4 Study variables

To achieve the objectives for this paper, the dependent variables include knowledge on the legality of abortion, source of family planning, abortions since 5 years preceding the survey and current contraceptive use. Independent variables include; level of education, work status, wealth index, marital status, religion, ethnicity, type of place of residence and region of residence.

3.4.1 Description of variables

Induced abortions 5 years preceding the survey: to know women who had had an induced abortions 5 years before the survey. It was a binary variable with yes and no responses.

Current Contraceptive use: This represents respondents using any form of contraceptive method, that is, use or non-use. It is a binary variable that is yes or no. The kind or type of family planning method that is modern or traditional method was not used.

Level of education: this represents the educational level of the participants in the study in the following groupings; No education, Primary, Secondary, and Higher.

Wealth index: The wealth index segregated the respondents into 5 wealth quintiles namely: lowest, second, middle, fourth and highest.

Marital status: this represents women who have been married before or not and women who were in a union at that time, and sections women into five different categories; married, never married living together, divorced/separated, widowed or missing.

Religion: this represents the religious associations of the participant; Christianity, Islam, Traditional, other religion or has no religion.

Ethnicity: This variable describes the ethnic background of the respondent, it was categorized as Akan, Ga/Dangme, Ewe, Mole-Dagbani and others.

Type of place of residence: This categorizes the participant's area of residence into urban or rural.

Region: It represents the respondent's region of residence; Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong-Ahafo, Northern, Upper East and Upper West regions.

Source of family planning; Respondents were asked if they knew where to obtain family planning services and was categorized into yes and no.

Abortion Legal; Respondents were asked if they had knowledge on the legal status of abortion in this country. Responses were categorized into three; yes, no and don't know.

3.5 Data analysis

The statistical software used for the analysis of data was STATA IC 15. Data was analysed using the appropriate statistical methods which included descriptive, Rao-Scott Chi-square of independence and Poisson with robust standard errors. All analysis adjusted for complex survey design features (stratification, clustering and weighting) to reduce bias and increase the precision of the estimates

3.5.1 Descriptive Analysis

Univariable analysis for key outcome measures of interest were based on frequency, percentage frequency distribution and 95% confidence interval estimation of prevalence

3.5.2. Percentage Change Estimate

After the rates for abortion and contraception had been estimated for the years 2007 and 2017, their percentage change were estimated over the ten year period. This was done to give an estimation on whether there had been an increase or decrease in abortion rate and contraception rate over the years.

3.5.3 Poisson with Robust Standard Errors

This test is used to determine which independent variables have both negative and positive effects on the outcome variables and to assess risk factors that are associated with influencing the prevalence of abortion and contraception.

3.5.4 Rao-Scot Chi-square

The bivariate analysis of factors associated with abortion and contraceptive use were conducted using Rao-Scot Chi-square test of independence. This method was used instead

of Pearson Chi-square because it accounts for violations of equal probability across likert responses in survey data making it more robust.

CHAPTER FOUR

RESULTS

4.1. Introduction

The chapter brings to light the detailed analysis of the extracted data from both surveys. This chapter is divided into four parts based on the objectives of the study. They include; background characteristics of the respondents, prevalence of abortion for 2007 and 2017, prevalence of contraceptive use for 2007 and 2017, factors influencing contraceptive use and finally factors influencing induced abortion.

Table 1: Background characteristics of women aged 15-49 from 2007 and 2017: Ghana Maternal Health Survey

Background Characteristics	2007	2017	2007 and 2017
	Percentage (%)	Percentage (%)	Percentage (%)
Age(Years)			
<20	20.0	19.2	19.5
20-34	47.6	48.4	48.1
35-49	32.4	32.4	32.4
Marital status			
Married	17.2	12.3	14.4
Co-habiting	6.4	9.3	8.0
Neither married nor co-habiting	76.3	78.5	77.6
Other	0.8	0.0	0.0
Religion			
Christian	76.7	80.4	78.8
Muslim	16.1	15.4	15.7
Other	7.2	4.1	5.5
Educational Level			
Primary	28.7	19.2	23.2
Middle	67.0	49.2	56.7
Secondary	4.3	22.2	14.7
Secondary+	0.0	9.3	5.4

Factors	2007	2017	2007-2017
	Percentage (%)	Percentage (%)	Percentage (%)
Ethnicity			
Akan	48.9	48.6	48.8
Ga/Dangme	7.5	8.1	7.8
Ewe	13.5	13.9	13.7
Guan	2.3	3.3	2.9
Mole-Dagbani	9.4	15.1	12.6
Other	18.5	11.0	14.3
Wealth Index			
Lowest	15.4	14.4	14.8
Second	16.7	17.9	17.3
Middle	20.3	20.4	20.3
Fourth	23.1	23.2	23.2
Highest	24.5	24.1	24.3
Residence			
Urban	43.1	54.9	49.6
Rural	56.9	45.1	50.4
Region			
Western	9.0	12.9	11.2
Central	10.1	8.9	9.4
Greater Accra	13.5	18.7	16.4
Volta	9.4	8.0	8.6
Eastern	12.2	10.0	11.0
Ashanti	18.2	19.1	18.7
Brong-Ahafo	10.4	9.4	9.9
Northern	10.5	7.1	8.7
Upper East	4.1	3.4	3.7
Upper West	2.6	2.5	2.6

4.2 Background Characteristics of Respondents

The ages of female respondents who participated in the study saw a slight increase in the 20-34 category which was 47.6% in 2007 to 48.4% in 2017. Women aged <20 also recorded a slight decrease (20.0 in 2007 to 19.2 in 2017) and those from the ages of 35-49 remained the same. From the data obtained it can be seen women within the 20-34 age category made up the majority of women of reproductive age.

The proportion of women married saw a decline over the years from 17.2%(2007) to 12.3%(2017) with an increase in the number of those co-habiting (living with a man but not married) from 6.4%(2007) to 9.3% (2017). The number of women who are neither married nor co-habiting also saw an increase from 76.3% to 78.5%.

The percentage of women who were Christians increased from 76.7% to 80.4% with a decline in the percentage of Muslims (16.1% to 15.4%) and other religious bodies (7.2%-4.1%).

For educational level the proportion of women whose highest level of education was at the primary level declined from 28.7% to 19.2%.equally those whose highest level was at the middle school or Junior High School saw a decrease from 67.0% to 49.2% with a very high increase in the secondary school levels from 4.3% to 22.2%. Women whose limit was tertiary education recorded 4.1% in 2017 but showed not record in 2007.

For the ethnic groups there have been a high increase in the Mole-Dagbani group from 9.4% to 15.1% with the others showing slight decrease.

Wealth index amongst women ranked in the second quintile increased from 16.7% to 17.9% within the years with those in the lowest quintile showing a decrease from 15.4% to 14.4%.

The type of residence of the women were categorized into urban and rural areas. Women representing the urban centers saw an increase from 43.1 to 54.9 over the years affecting the rural areas which recorded a decrease from 56.9 to 45.1.

Regions in the country were also considered in the factors with the Western (9.0% to 12.9%), Ashanti (18.2% to 19.1%) and Greater Accra (13.5% to 18.7%) showing an increase in the proportion as compared to the other regions. The region with the highest number was the Ashanti region and the region with the least was Upper West region in both 2007 and 2017. The region showing fast growing numbers over the decade is the Greater Accra region. This percentages refers to women who partook in the study and not the total percentage of women in the regions.

Table 2: Prevalence of induced abortion in the years preceding the survey amongst women of reproductive age from 2007 and 2017 GMHS

Characteristics	2007[95% C.I]	2017[95% C.I]	2007 – 2017 Estimated change [95% C.I]
	Percentage (%)	**Percentage (%)**	**Percentage (%)**
All	**31.9[30.4-33.4]**	**7.5[7.0-8.1]**	**-24.4***[-25.9- -22.8]**
Age			
<20	87.6[85.9-89.4]	3.1[2.4-3.7]	-84.6***[-86.5- -82.7]
20-34	27.2[25.0-30.0]	11.7[10.8-12.5]	-15.6***[-18.0- -13.2]
35-49	4.3[3.5-5.2]	3.9[3.3-4.5]	0.41[-1.4,0.6]
Marital status			
Married	7.6[5.4-9.9]	4.9[3.4-6.4]	-2.8 *[-5.5,-0.03]
Co-habiting	17.2[12.0-22.5]	13.0[10.0-15.7]	-4.3[-10.4,1.7]
Neither married nor co-habiting	85.2[83.7-86.6]	6.8[6.0-7.6]	-78.4***[-80.0,-76.8]
Religion			
Christian	34.4[32.8-36.0]	8.5[7.9-9.0]	-26.0***[-27.6,-24.3]
Muslim	28.5[24.8-32.1]	3.3[2.6-4.0]	-25.2***[-29.0,-21.6]
Other	12.6[9.9-15.3]	4.6[2.8-6.4]	-8.2***[-14.3-4.0]
Educational Level			
Primary	29.6[27.3-31.9]	7.6[6.4-8.7]	-22.0***[-24.5,-19.5]
Middle	37.3[35.3-39.2]	8.7[7.9-9.5]	-33.3***[-35.4,-31.3]
Secondary	60.5[57.4-63.6]	9.0[7.9-10.1]	-46.5***[-51.7,-41.2]
Secondary+	55.5[50.2-60.8]	7.1[5.3-9.0]	-48.4***[-58.4,-43.5]

Characteristics	2007[95% C.I]	2017[95% C.I]	2007 – 2017 Estimated change [95% C.I]
	Percentage (%)	Percentage (%)	Percentage (%)
Ethnicity			
Akan	33.6[31.5-35.6]	9.3[8.6-10.0]	-24.2***[-26.4,22.2]
Ga/Dangme	36.6[33.1-40.1]	8.4[6.7-10.1]	-28.2***[-32.3,-24.1]
Ewe	33.8[30.7-36.8]	8.2[6.7-9.7]	-26.4***[-34.2,-18.7]
Mole-Dagbani	21.8[16.9-26.7]	3.8[3.1-4.5]	-18.0***[-23.4,-12.7]
Other	29.4[26.9-32.0]	4.1[3.3-5.0]	-25.5***[-28.1,-22.9]
Wealth Index			
Lowest	31.1[27.8-34.4]	5.3[4.4-6.1]	-22.7***[-26.9,-18.4]
Second	30.1[26.4-33.8]	7.1[6.0-8.2]	-23.0***[-26.0,-20.0]
Middle	32.3[29.5-35.2]	8.3[7.1-9.4]	-23.3***[-26.1,-20.5]
Fourth	32.7[30.3-35.0]	7.8[6.8-8.8]	-25.0***[-27.6,-22.4]
Highest	32.0[30.0-34.0]	8.2[7.2-9.2]	-26.7***[-29.4,-24.1]
Residence			
Urban	41.2[39.4-43.1]	8.9[8.2-9.6]	-32.3*** [-34.3,-30.3]
Rural	24.8[23.2-26.4]	5.8[5.1-6.4]	-19.0***[-20.8,-17.3]
Region			
Western	33.3[28.8-37.8]	9.8[8.3-11.3]	-23.5***[-28.1,-19.0]
Central	29.3[23.3-35.2]	7.1[5.7-8.4]	-22.2***[-28.0,-16.5]
Greater Accra	44.7[41.8-47.6]	9.3[8.0-10.7]	-35.4***[-38.6,-32.1]
Volta	31.0[27.4-34.5]	6.2[4.7-7.6]	-24.8*** [-28.5,-21.1]
Eastern	33.5[30.9-36.2]	6.2[4.7-7.7]	-27.2***[-30.4,-24.2]
Ashanti	34.8[31.1-38.4]	9.4[8.2-10.7]	-25.3***[-29.2,-21.4]
Brong-Ahafo	26.2[22.0-30.3]	7.9[6.5-9.2]	-18.3***[-22.4,-14.2]
Northern	22.9[17.2-28.6]	1.2[0.09-1.6]	-21.7***[-27.8,-15.7]
Upper East	21.6[18.2-25.0]	1.5[1.1-1.9]	-20.1***[-23.5,-16.6]
Upper West	20.5[16.3-24.6]	2.9[2.2-3.6]	-17.6***[-21.4,-13.7]

Characteristics	2007[95% C.I]	2017[95% C.I]	2007 - 2017 Estimated change [95% C.I]
	Percentage (%)	Percentage (%)	Percentage (%)
Abortion Legal			
Legal	47.8[42.0-53.3]	7.4[5.9-8.9]	-40.3***[-46.1,-34.5]
Illegal	31.9[30.3-33.4]	7.8[7.2-8.4]	-24.1***[-25.7,-22.4]
Don't know	34.8[31.2-37.5]	9.1[7.5-10.7]	-25.2***[-28.7,-21.8]
Source of Family Planning			
Yes	28.0[26.2-29.8]	7.1[6.5-7.7]	-20.9***[-22.8,-19.0]
No	42.1[39.0-45.4]	3.5[2.8-4.3]	-38.6***[-41.9,-35.2]

P-value notation; (***,p<0.001 **,p<0.01 *p<0.05)

4.3 Prevalence of Abortion for 2007 and 2017

The overall prevalence of induced abortion for five years preceding the survey by women of reproductive age in 2007 was 31.9% [30.4-33.4] and 7.5% [7.0-8.1] in 2017. There was a decline in the prevalence of abortion by 24.4% over the years, with the change been highly significant at p<0.001. The decline was also seen within the age categories especially within under 20 and 20-34 year groups. The under 20 year group showed a very high and significant change at a reduction rate of 84.6%.

Amongst the married respondents, induced abortions reduced by 2.8% with significance at p<0.05. It equally reduced in co-habiting respondents by 4.3% at a p<0.01 significant level and in single women reduced by 78.4%.

Women belonging to different faiths also showed significance in the prevalence of abortion with a decline in all levels of religious bodies .(table 2). Christian women had a reduced rate of 26.0%, Muslims at 25.2% and other religions at 8.2%.

Prevalence of abortion decreased significantly amongst all women with some form of education. Induced abortion decreased from 55.5% to 7.1% amongst women whose highest level of education was secondary+(tertiary) which is by 48.4% followed by those whose highest was secondary or senior high school level from 60.5% to 9.0% resulting in a 46.5% decrease. Women with junior high level as their highest level followed at 37.3% to 8.7% giving a 33.3% decrease and the least were women whose highest educational level was at the primary level with a 22.0% decrease that is from 29.6% to 7.6%.

There was a significant decrease in the prevalence of induced abortion amongst women of all ethnic groups in the country over the past decade. The Ga/Dangme group showed a reduction by 28.2%, Ewe by 26.4%, other ethnic groups by 25.5%, Akan by 24.2% and the Mole-Dagbani by 18.8%.

In relation to wealth index of the respondents, prevalence reduced with higher wealth index. Prevalence saw a significant decline by 26.7% in the highest, 25.0% in the fourth, 23.3% for the middle, 23.0% for the second and 22.7% for the lowest.

Respondents living in the urban areas recorded a significant decline by 32.3% which is higher than those in rural areas who recorded 19.0% decline also significant over the decade. All the ten regions showed significant decrease in prevalence of induced abortion with Greater Accra showing the highest decline of 35.4% and Upper West the least decline of 17.6% over the ten year period.

Amongst respondents who knew abortion was legal under special circumstances showed a significant decline by 40.3% as compared to those who thought it was illegal (24.1%) and reduced by 25.2% amongst those who had no idea as to whether abortion was legal or not.

Abortion also decreased amongst respondents who knew sources of family planning by 20.9% but equally showed decrease in respondents who did not know source by 38.6%.

Table 3: Prevalence of contraceptive use in the years preceding the survey amongst women of reproductive age from 2007 and 2017 GMHS

Characteristics	**2007**	**2017**	**(2007-2017)Estimated change (%)**
	Percentage (%)	**Percentage (%)**	**[95% C.I]**
All	**43.1[41.3-44.8]**	**26.4[25.5-27.4]**	**-16.7***[-18.62- -14.7]**
Age			
<20	54.9[49.9-60.0]	10.1[8.7-11.5]	-44.8***[-50.0,-39.5]
20-34	45.5[43.2-47.8]	34.0[32.7-35.4]	-11.4***[-14.1,-8.8]
35-49	36.1[33.5-38.7]	25.3[24.0-26.7]	-10.8**[-13.7.-7.8]
Marital status			
Married	23.3[18.6-28.0]	15.2[12.7-17.7]	-8.0[-13.4,-2.7]
Co-habiting	33.5[26.3-40.8]	28.7[24.8-32.5]	-4.8***[-13.1,-3.4]
Neither married nor co-habiting	51.1[47.7-54.5]	15.7[14.5-16.9]	35.5***[-39.0,-31.9]
Religion			
Christian	42.7[40.9-44.6]	27.5[26.3-28.5]	-15.3***[-17.4,-13.1]
Muslim	45.9[41.0-50.7]	21.3[19.5-23.0]	-24.6***[-29.7,-19.4]
Other	37.1[26.0-48.2]	20.4[16.0-24.8]	-16.7***[-28.6,-4.7}
Educational Level			
Primary	46.2[37.3-55.1]	27.8[22.4-33.3]	-18.4**[-28.8,-8.0]
Middle	44.3[42.4-46.4]	28.6[27.2-30.0]	-15.7***[-18.2,-13.2]
Secondary	41.4[35.1-47.6]	22.6[19.2-26.0]	-18.8***[-25.8,-11.7]
Secondary+	34.8[29.8-39.7]	25.2[22.8-27.6]	-9.6***[-15.0,-4,1]

Characteristics	2007	2017	(2007-2017)Estimated change (%)
	Percentage (%)	Percentage (%)	[95% C.I]
Akan	41.8[25.8-58.0]	24.6[21.1-28.0]	-17.3***[33.7,-0.8]
Ga/Dangme	48.3[40.3-56.2]	24.2[22.3-26.1]	-24.1[-32.3,-16.0]
Ewe	45.6[41.5-49.7]	24.4[22.2-26.7]	-21.2**[-25.9,-16.5]
Mole-Dagbani	43.0[38.8-47.2]	26.6[24.7-28.4]	-16.4***[-21.0,-11.8]
Other	44.5[40.5-48.4]	26.0[24.2-27.7]	-18.5***[-22.9,-14.2]
Wealth Index			
Lowest	41.6[38.1-45.1]	27.3[25.6-29.0]	-14.3***[-18.2,-10.4]
Second	41.4[38.1-44.7]	26.1[24.4-27.7]	-15.3***[-19.0,-11.6]
Middle	44.8[41.7,47.8]	26.2[24.2-28.1]	-18.6***[-22.2,-15.0]
Fourth	43.0[40.6-45.4]	24.8[23.6-26.1]	-18.2***[-20.9,-15.5]
Highest	43.1[40.6-45.6]	28.3[27.0-29.7]	-14.8***[-17.6,-11.9]
Residence			
Urban	49.5[43.9-55.0]	28.0[25.6-30.3]	-21.5***[-27.5,-15.4]
Rural	39.6[34.7-44.6]	23.0[20.1-26.0]	-16.6***[-22.4,-10.8]
Region			
Western	41.9[38.1-45.7]	22.7[20.4-25.0]	-19.2***[-23.6,-14.7]
Central	31.3[26.0-36.6]	24.8[21.8-27.7]	-6.5*[-12.5,-0.5]
Greater Accra	40.5[35.8-45.1]	30.3[28.0-32.6]	-10.2***[-15.4,-5.0]
Volta	45.0[41.5-48.4]	29.8[27.2-32.5]	-15.1***[-19.5,-10.8]
Eastern	45.6[40.4-50.9]	29.8[27.1-32.5]	-15.8***[-21.7,-10.0]
Ashanti	48.9[40.8-57.1]	18.9[16.6-21.2]	-30.1***[-38.5,-21.6]
Brong-Ahafo	42.6[33.5-51.7]	27.6[24.6-30.6]	-15.0***[-24.6,-5.4]
Northern	50.1[38.8-61.5]	27.3[25.0-29.7]	-22.8***[-34.4,-11.2]
Upper East	42.5[38.6-44.3]	27.6[25.6-29.6]	-14.8***[-19.1,-10.6]
Upper West	43.8[41.4-46.1]	27.1[25.7-28.4]	-16.7***[-19.4,-13.9]

Characteristics	2007	2017	(2007-2017) Estimated change (%)
	Percentage (%)	Percentage (%)	[95% C.I]
Abortion Legal			
Legal	46.4[38.4-54.8]	25.0[23.0-26.9]	-21.4***[-30.0,-13.3]
Illegal	45.8[45.4-60.2]	30.5[28.2-32.6]	-15.3***[-19.2,11.4]
Don't know	48.3[46.8-49.2]	29.0[26.9-33.4]	-19.3***[-26.7,-14,7]

P-value notation ; (***,p<0.001 **,p<0.01 *p<0.05)

4.4 Prevalence of Contraceptive use for 2007 and 2017.

The overall prevalence of contraceptive users irrespective of the types of methods used was 43.1% in 2007, 26.4% in 2017 pooling an overall decrease at 16.7%, which is significant at $p<0.001$ over the ten year period.

Within the under 20 age category contraceptive use decreased from 54.9% in 2007 to 10.1% in 2017 resulting in a 44.8% decline over the ten year period at a high significance level ($p<0.001$). Similarly, respondents within the 20-34 category showed a decline over the years by 11.4% [-14.1,-8.8] at a significant level. For the 35-49 age group prevalence of non-use equally declined over the years by 10.8% and was highly significant.

Respondents who were single showed a high prevalence of contraceptive use from 51.1% in 2007 to 15.7% in 2017 resulting in an overall decline of 35.5% over the decade at a high level of significance. Women who were married and also co-habiting showed a decline over the decade .Refer to table 3 for figures.

Over the years, the prevalence of Muslim respondents declined from 45.9% to 21.3% resulting in a 24.6% decrease in non-use of contraceptives at a high significance level.

Women belonging to the Christian faith also had a decline in prevalence by 15.3% and other religions by 16.7%.

Prevalence of respondents in relation to their educational level saw a decline at all levels at significant levels with secondary school or senior high school leading with 18.8% and secondary+ level been the least at 9.6%.Refer to table 3 for figures.

Amongst the various ethnic groups' prevalence of contraceptives equally declined at high levels of significance. The Ga/Dangme had a high level at 24.1% followed by Ewe 21.2%, other ethnic groups at 18.8%, Akan at 17.3% and the Mole-Dagbani's at 16.4%.

The decline of contraceptive use was also high (18.6%) amongst women in the middle wealth index and lowest (14.3%) in the lowest wealth index. There was also a general decline in the category and all were significant at $p<0.001$.

Respondents living in urban areas also recorded a 21.5% decline and respondents in rural areas had a decline at 16.6% (table 3)

Equally there was a decline in all ten regions of Ghana at high significance levels $p<0.001$. The Ashanti region had the highest decline in respondents not using any form of contraception at 30.1% and the Central region having the lowest decline at 6.5%.

Respondents who knew abortion was legal under special circumstances had a prevalence of 46.4% in 2007, 25.0% in 2017 with a decline of 21.4% in contraceptive use over the decade. Women who thought abortion was illegal had a prevalence of 45.8% in 2007, 30.5% in 2017 with a decline of 15.3% from 2007-2017. For women who did not know whether abortion was legal or not had a prevalence of 48.3% in 2007, 29.0% in 2017 resulting in a decline by 19.3% over the years.

Table 4: Factors influencing the prevalence of Contraceptive use in 2007, 2017 and 2007-2017

Characteristics	2007	2017	2007-2017
	PR[95% C.I]	PR[95% C.I]	PR[95% C.I]
Age			
<20	Ref	Ref	ref
20-34	1.21* [1.04-1.41]	0.8*** [0.77-0.82]	0.83*** [0.8-0.86]
35-49	1.68*** [1.4-2.02]	0.99 [0.94-1.04]	1.03 [0.98-1.09]
Marital status			
Married	Ref	Ref	ref
Co-habiting	0.97 [0.84-1.13]	0.93* [0.86-1]	0.89** [0.82-0.95]
Neither married nor co-habiting	0.89 [0.77-1.02]	1.06 [1-1.13]	0.96 [0.9-1.02]
Other			
Religion			
Christian	ref	Ref	ref
Muslim	0.68* [0.5-0.94]	1 [0.96-1.04]	0.97 [0.92-1.02]
Traditionalist	0.88 [0.64-1.2]	0.94 [0.84-1.04]	0.92 [0.82-1.03]
Educational Level			
Primary	ref	Ref	ref
Middle	0.96 [0.85-1.09]	1 [0.96-1.03]	1 [0.96-1.04]
Secondary	0.84* [0.72-0.99]	0.97 [0.93-1.01]	0.96 [0.92-1.01]
Secondary+	0.78* [0.62-0.99]	1.03 [0.97-1.09]	0.98 [0.93-1.05]
Ethnicity			
Akan	ref	Ref	ref
Ga/Dangme	1.04 [0.89-1.21]	1.06** [1.01-1.11]	1.06* [1.01-1.11]
Ewe	1.06 [0.89-1.27]	1.02 [0.98-1.07]	1.04 [0.99-1.1]
Mole-Dagbani	1.15 [0.71-1.86]	1.03 [0.98-1.08]	1.05 [1-1.11]
Other	1.11 [0.9-1.38]	1.01 [0.96-1.06]	1.01 [0.96-1.06]

Characteristics	2007	2017	2007-2017
	PR[95% C.I]	PR[95% C.I]	PR[95% C.I]
Wealth Index			
Lowest	ref	Ref	ref
Second	1 [0.83-1.2]	1.01 [0.97-1.05]	1 [0.96-1.05]
Middle	1.06 [0.91-1.25]	1.02 [0.98-1.06]	1.03 [0.98-1.07]
Fourth	0.91 [0.76-1.08]	1 [0.96-1.04]	0.98 [0.94-1.03]
Highest	1.04 [0.87-1.23]	1.01 [0.97-1.06]	1.02 [0.97-1.07]
Residence			
Urban	Ref	Ref	ref
Rural	0.97 [0.87-1.09]	0.97 [0.87-1.09]	0.97 [0.87-1.09]
Region			
Western	Ref	Ref	ref
Central	1.19 [0.93-1.53]	1.09** [1.03-1.16]	1.12*** [1.05-1.19]
Greater Accra	1.28* [1.03-1.59]	1.04 [0.98-1.11]	1.08* [1.02-1.15]
Volta	1.4* [1.05-1.87]	1.01 [0.93-1.09]	1.06 [0.97-1.15]
Eastern	1.23 [0.98-1.55]	0.99 [0.93-1.04]	1.02 [0.96-1.09]
Ashanti	1.25* [1.01-1.55]	1 [0.94-1.05]	1.04 [0.98-1.1]
Brong-Ahafo	1.06 [0.82-1.36]	1.01 [0.96-1.07]	1.02 [0.95-1.09]
Northern	0.99 [0.69-1.41]	1 [0.94-1.07]	1.01 [0.94-1.09]
Upper East	1.11 [0.57-2.18]	1.08* [1.01-1.15]	1.1* [1.02-1.19]
Upper West	1.25 [0.48-3.22]	1.05 [0.98-1.12]	1.08 [1-1.16]
Abortion Legal			
Legal	Ref	Ref	ref
Illegal	0.91 [0.76-1.09]	1.01 [0.98-1.05]	1 [0.96-1.04]
Don't know	0.86 [0.68-1.08]	1.02 [0.97-1.08]	1.01 [0.96-1.07]

Characteristics	2007	2017	2007-2017
	PR[95% C.I]	PR[95% C.I]	PR[95% C.I]
Year			
2007			ref
2017			1.42*** [1.35-1.5]

P-value notation; (***,p<0.001 **,p<0.01 *p<0.05) ref; reference category PR; prevalence rate

4.5 Factors Influencing Contraceptive use.

Women within the age group of 20-34 showed a high significance over the years (2007-2017) with them less likely to use a form of contraceptive [0.83,PR<1] as compared to women under 20. Women within the ages of 35-39 had a higher rate for not using any form of contraception.[1.03,PR>1] as compared to women who are under 20.

Women who were co-habiting or staying with a man were less likely not to use any contraceptive method as compared to women who are married and showed some level of significance.[PR 0.89,C.I 0.82 to 0.95,p<0.01]. Women who were equally single were less likely to use any contraception but showed no level of significance.

The religious affiliation of the women showed no significance in their use of contraception however women belonging to the Islamic religion were 0.97 times less likely to use any form of contraception as compared to those belonging to the Christian religion. Women belonging to other religious bodies equally were 0.92 times less likely to use any form of contraception as compared to Christians.

Non-use of contraceptives was slightly significant amongst women who had secondary education and higher in the year 2007 as compared to women who had primary education. Over the decade, the non-use of contraceptives by women whose highest educational level was secondary education were 0.97 times less likely to use contraception as compared to those with primary education. Women whose highest educational level was secondary+ or tertiary were also 0.98 times less likely to use any form of contraception as compared to those at the primary level.

Respondents belonging to the Ga/Dangme groups were more likely not to use any form of contraception by 1.06 at a significant level ($p<0.05$). The ten year period (2007-2017) saw women belonging to the Ewe, Mole-Dagbani and other ethnic groups were more likely not to use any form of contraception as compared to women belonging to the Akan group at no level of significance.

The wealth index of respondents showed no significance level but indicated women in the second, middle and highest levels were more likely not to use any form of contraception as compared to women in the lowest level. Only women in the fourth level were less likely not to use any from contraception as compared to the women in the lowest quintile (table 5).

The type of residence of the respondent also influenced the prevalence of contraceptive use where women residing in rural areas are less likely not to use any method of contraception as compared to women residing in urban areas. (PR-0.97,C.I 0.87-1.09).

For the ten regions in Ghana only the Central, Greater Accra and Upper-East regions showed some level of significance at 95% confidence interval. All the regions showed the

respondents were more at risk of not using any method of contraception as compared to respondents in the Western region. The region with the highest prevalence rate was the Central region [PR-1.12, C.I, 1.05-1.19] and the least been the Northern region at 1.01[C.I,0.94-1.09] .

The respondents who did not know abortion was legal under special circumstances were more likely to refuse contraceptive use [PR-1.0, C.I 0.96-1.04] as compared to those who knew abortion was legal. Similarly, respondents who had no idea as to the legality of abortion were more likely to desist from using contraceptives [PR-1.01, C.I 0.96-1.07] as compared to respondents who knew. However their influence was not significant.

After adjusting for year it was seen the chance of not using contraceptives over the decade was 1.42 [1.35-1.5] and was highly significant.

Table 5: Factors influencing the prevalence of abortion in 2007, 2017 and 2007-2017

Characteristics	2007	2017	2007-2017
	PR[95% C.I]	PR[95% C.I]	PR[95% C.I]
Contraceptive use			
No	Ref	Ref	Ref
Yes	0.82*** [0.76-0.89]	0.44*** [0.35-0.53]	0.58*** [0.52-0.64]
Age			
<20	Ref	Ref	Ref
20-34	0.76*** [0.7-0.83]	4.47*** [3.27-6.11]	1.36*** [1.21-1.53]
35-49	0.31*** [0.2-0.47]	1.68* [1.05-2.67]	0.64** [0.48-0.87]
Marital status			
Married	Ref	Ref	Ref
Co-habiting	1.72* [1.06-2.78]	1.4 [0.92-2.12]	2.19*** [1.58-3.04]
Neither married nor co-habiting	3.85*** [2.65-5.61]	1.09 [0.74-1.62]	2.79*** [2.1-3.71]
Other			
Religion			
Christian	Ref	Ref	Ref
Muslim	0.92 [0.75-1.12]	0.57** [0.38-0.87]	0.75** [0.62-0.91]
Other	0.89 [0.65-1.21]	0.61 [0.32-1.17]	0.75* [0.57-1]
Educational Level			
Primary	Ref	Ref	Ref
Middle	1.03 [0.89-1.19]	1.03 [0.76-1.4]	1.02 [0.88-1.18]
Secondary	1.24** [1.08-1.42]	0.82 [0.59-1.15]	1.08 [0.93-1.25]
Secondary+	1.36*** [1.16-1.61]	0.43*** [0.27-0.68]	0.94 [0.78-1.14]
Ethnicity			
Akan	Ref	Ref	Ref
Ga/Dangme	0.99 [0.87-1.14]	0.87 [0.56-1.34]	0.93 [0.79-1.09]
Ewe	1.01 [0.88-1.16]	1.13 [0.79-1.64]	1.04 [0.88-1.22]
Mole-Dagbani	1.09 [0.81-1.47]	1.02 [0.69-1.51]	0.96 [0.72-1.28]
Other	1 [0.84-1.19]	0.83 [0.56-1.22]	0.95 [0.8-1.13]

Characteristics	2007	2017	2007-2017
	PR[95% C.I]	PR[95% C.I]	PR[95% C.I]
Wealth Index			
Lowest	Ref	Ref	Ref
Second	0.84 [0.7-1.01]	1.26 [0.87-1.83]	1.01 [0.85-1.2]
Middle	0.94 [0.8-1.11]	1.56* [1.1-2.21]	1.15 [0.98-1.36]
Fourth	1.08 [0.93-1.26]	1.24 [0.87-1.79]	1.12 [0.97-1.3]
Highest	0.99 [0.85-1.15]	1.36 [0.96-1.91]	1.15 [0.99-1.33]
Residence			
Urban	Ref	Ref	Ref
Rural	0.9* [0.81-1]	0.77* [0.61-0.96]	0.86** [0.77-0.96]
Region			
Western	Ref	Ref	Ref
Central	0.98 [0.78-1.22]	0.72 [0.48-1.1]	0.85 [0.68-1.05]
Greater Accra	1.08 [0.95-1.24]	0.68 [0.47-1.01]	0.88 [0.75-1.03]
Volta	1.18 [0.96-1.44]	0.69 [0.42-1.14]	0.94 [0.75-1.18]
Eastern	0.99 [0.86-1.14]	0.56** [0.37-0.84]	0.85* [0.72-0.99]
Ashanti	0.99 [0.86-1.15]	0.99 [0.73-1.33]	0.95 [0.82-1.1]
Brong-Ahafo	1.01 [0.85-1.21]	1.05 [0.74-1.49]	0.96 [0.82-1.14]
Northern	1.02 [0.76-1.36]	0.58* [0.34-0.98]	0.85 [0.66-1.1]
Upper East	0.72 [0.29-1.79]	0.25*** [0.12-0.5]	0.39* [0.17-0.92]
Upper West	1.08 [0.76-1.53]	0.62 [0.32-1.18]	0.63* [0.42-0.96]
Abortion Legal			
Legal	Ref	Ref	Ref
Illegal	0.88* [0.79-0.98]	1.07 [0.79-1.45]	0.99 [0.86-1.13]
Don't know	0.93 [0.8-1.07]	1.15 [0.76-1.73]	1.01 [0.85-1.21]
Year			
2007			Ref
2017			0.16*** [0.14-0.18]

P-value notation; (***,p<0.001 **,p<0.01 *p<0.05) ref; reference category PR; prevalence rate

4.6 Factors Influencing Induced Abortion

For factors influencing induced abortion, the use of contraceptive reduced the rate of abortion by 0.82(C.I 0.76-0.89) in 2007, 0.44 (C.I 0.35-0.53) in 2017 and 0.58(C.I. 0.52-0.64) over the decade at a high significance level ($p<0.001$).

For the age of the respondents, women who were between the ages of 20-34 were 0.76 times at less risk of having an abortion in 2007 as compared to women under 20 years of age and was highly significant. However in 2017, women between the ages of 20-34 were 4.47 times likely to engage in an abortion as compared to those under 20 years of age. This accounted for the 1.36 increased rate in the age group over the decade which was also highly significant. Women within the 35-49 age category also recorded a lesser rate of 0.3 in 2007 but recorded a 1.68 increased rate in 2017 resulting in a 0.64 reduced rate over the decade as compared to women under 20 at high levels of significance.

Women who were co-habiting were 2.19 [1.58-3.04] times more likely to have an abortion as compared to married women at a high significance level. In 2007 the rate of women who were single and were having abortions was 3.85[C.I 2.65-5.61] times as compared to those who were married and was highly significant. However the prevalence rate reduced to 1.09[C.I 0.74-1.62] in 2017 as compared to the married group and showed no significance. This amounted to a collective likely prevalence rate of 2.79[C.I 2.1-3.7] over the decade with a high significance levels as compared to the married category.

In relation to religion the pooled analysis (2007-2017) revealed that Muslims were at a less likely to have an abortion by 0.75 at a significant level as compared to the Christian religion. Relatively respondents belonging to other religious bodies showed a level of

significance and were also at a lesser chance [PR-0.75, C.I 0.57-1.0] of having an abortion as compared to the reference group.

From the pooled analysis, respondents whose highest educational level was middle school or J.H.S had a higher rate [PR-1.20] as compared to respondents whose highest was primary school. Also respondents whose highest level was secondary school were 1.08 times likely to have an abortion as compared to respondents were at the primary level. The rate of women in tertiary institution engaging in an abortion was 1.24 times as compared to women with primary education in 2007 and was highly significant. However in 2017 their likelihood of engaging in an abortion reduced to 0.43 with a high level of significance.

Amongst respondents in different ethnic groups, from the pooled analysis the Ga/Dangme, Mole-Dagbani's and the other ethnicities had a reduced rate [PR-0.93, 0.96 and 0.95 respectively] of engaging in abortion as compared to the reference group (Akan). The Ewe group were the only group with an increased rate of having an abortion at 1.04 as compared to the Akans.

Respondents irrespective of their wealth levels had an increased chance of having an abortion with respondents in the highest a middle categories taking the lead [PR-1.15, 1.15 respectively] as compared to those in the lowest category. Respondents in the second category were the ones with the least increased rate at 1.01 as compared to the women with the lowest wealth level.

Women living in rural areas from the pooled analysis had a 0.86 times less rate of having an abortion as compared to women in the rural regions.

Respondents in all the ten regions in Ghana had a reduced rate of engaging in abortions. Respondents in the Upper East, Upper West and Eastern regions showed level of significance at $p<0.05$.

Respondents who thought abortion was illegal were 0.99 [C.I 0.86-1.13] at a lesser chance of engaging in abortion as compared to those who know about is legal under special circumstances. However respondents who had no idea about the legal status of abortion were 1.01 times likely to engage in abortion as compared to those who knew abortion was legal under special circumstances.

After adjusting for years, women in the year 2017 were 0.16 [C.I 0.14-0.18] times less likely to engage in abortion as compared to women in 2007.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter seeks to discuss the results in relation to the objectives of this study using similar findings from over the world and in Ghana.

5.2 Change in Prevalence of Abortion between 2007 and 2017

From this study prevalence of abortion was found to have decreased significantly from 31.9% in 2007 to 7.5% in 2017 resulting in a 24.4% decline over the ten-year period. This could be attributed to the introduction of the National Health Insurance Scheme in 2004 which covered expenses for all pregnant women before, during and after delivery hence reducing rate of abortion The study also revealed a high decline in abortion amongst women who below 20 years of age by 84.6%. Similarly, studies done on trend analysis in Armenia reported a decrease in prevalence of abortion over ten years especially within the under 20 category (Westoff, 2005). On the contrary a similar study in Azerbaijan recorded increase in prevalence of abortion within every age category. Also a trend analysis in Romania recorded a decline in abortion rate in every age category over a ten year period similar to the findings of this study (Westoff ,2005). The high decline could be due to increased educational level amongst young women and the structure of the Ghanaian educational system. It is worth knowing that the prevalence of abortion amongst the never-married or single category had also decreased by 78.4% possibly. There was also a decline in prevalence of abortion amongst women whose highest educational level was secondary school and tertiary by 46.5% and 48.7% respectively. This could be related to the

increasing demand for education among the girl child and also that faction been educated on the implications of unsafe abortion. Abortion prevalence was rather high in urban areas than rural areas possibly due to the proximity of medical facilities, greater desire for smaller families, and perhaps more secular attitudes toward the abortion procedure. Also respondents who knew abortion was legal under special circumstances had a decline by 40.3% as compared to those who those abortion was illegal or had no idea about the legality of abortion. This could be due to lack of information on the laws regarding abortion in Ghana.

5.3 Change in Prevalence of Contraceptive use between 2007 and 2017.

The overall prevalence of contraceptive use in 2017 from this study was 26.4% similar to the overall prevalence calculated by the GMHS in 2017 at 25% higher than the target rate set by the Ghana Health Service's national family planning target rate at 23.3%. Over the decade, contraceptive use has declined by 16.7%. The number of respondents who used some form of contraception had decreased and this could be due to misconceptions of contraceptives, inaccessibility to contraceptives, social and religious reasons amongst others. Non-use of contraceptives was very high in amongst unmarried women and also high amongst women under the age of 20. Low contraceptive use over the decade could be due to desire to have children, religious beliefs, and accessibility. Despite the low patronage of contraceptive the Total Fertility Rate for Ghana has reduced from 4.6 to 3.9 child per woman for 2007 and 2017 respectively. (GMHS, 2017). The survey also stated about 80% of women of reproductive age know where to obtain some form of contraceptive. Laar (2010) found in an analysis of Ghanaian print media that less than 1% of total newspaper coverage was dedicated to family planning, abortion, and HIV,

underscoring the dearth of information available to many in the Ghanaian public. The incorporation of programs that will educate and enlighten these women with real-life scenarios on the benefits of contraception in different languages need to be developed and advocated in schools, markets and community centers.

5.4 Factors Consistent in Influencing Prevalence of Abortion between 2007 and 2017.

Some factors that have been consistent in influencing abortion prevalence in 2007, 2017 and 2007-2017 include contraceptive use, age, marital status, religion, educational level and type of residence. Similar findings by Boah, Borsotsiah and Kuurdong in 2018 revealed women (35-49 years) as compared to younger women were less likely to have an abortion in contrast with an Ethiopian study. The study went ahead to reveal women in the younger age category were more likely to subject to sexual compulsion, rape or defilement increasing the chances of unplanned pregnancies leading to abortions.

Single women and women co-habiting also had a high rate of engaging in abortion possibly due to non-readiness to have a child, societal disapproval, desire to continue education or job and probability of not using any form of contraception. Similar findings from the Guttmacher Institute in 2010 stated the likelihood of an unmarried woman having an abortion is twice that of married woman holding societal stigma with out-of-wedlock children, desire to postpone childbirth until marriage and even insufficient funds to cater for the child.

A study done by Sedgh , in 2010 highlighted women who resided in urban areas were more susceptible to engage in abortive practices probably due to proximity in the cities and town

healthcare centres as compared to women in the rural areas similar to the findings of our study. Also women of high educational level were more likely to engage in abortion over the years possibly due to their knowledge on where to patronize such services (Sundaram, Juarez, Bankole & Singh, 2012). On the contrary, some studies found less educated women engaging in abortive practices as compared to more educated women (Schwandt, Creanga, Danso, Adanu, Agbenyega & Hindin, 2011). Another supporting finding conducted in the south of Ghana equally indicated educated and urban women were more likely than their less educated and rural counterparts to seek an abortion (Agyei, Biritwum ,Ashitey & Hill ,2000).

In relation to religion affiliations, Christian women were more likely to engage in abortive procedures as compared to Muslim women. This could be as a result of polygamy within the Muslim community compelling wives to have multiple children as compared to the Christians who encourage monogamy.

The results from this study also indicated women who used some form of contraception were less likely to have an abortion as compared to women with no form of contraception. This finding enables us to draw a conclusion that contraceptive use indeed influences abortion in Ghana. Other studies found that increased contraceptive use helped reduce rate of abortion which is analogous to the findings of this study.

5.5 Factors Consistent in Influencing Prevalence of Contraceptive use between 2007, 2017 and 2007-2017.

The use of contraceptives has declined over the years which contradicts the expected outcome of having an increasing rate of contraceptive use as abortion rate also declined.

Factors that have been influencing prevalence of contraception for 2007, 2017 and between 2007 and 2017 are age, marital status, educational level, ethnicity and region. Other factors affected contraceptive use such as wealth index, and legality of abortion yet only the afore-mentioned ones showed high significance levels.

Findings by Nyarko in 2015 shared a similar view where a significant association was established between contraceptive use and the level of education and marital status. Some regions showed significance with contraceptive use; Central, Volta, Upper East, Ashanti and Greater Accra similar to findings by Darko in 2016. This study saw a less rate of women of higher educational status using some form of contraception as compared to those with primary level education unlike a study by Nketiah Amponsah et al. (2012), which revealed young women with some level of education at the elementary level were more likely to use contraceptives compared to those who are uneducated.. The study also found no significant association between wealth status and contraceptive use similar to that of Darko (2016). It rather showed that respondents in the highest wealth quintiles were more likely to use some form of contraception as compared to the other quintiles. This finding related to a study Stephensen et al. (2007) where women in wealthier households were more likely to use some form of contraception. On the contrary a study by. Asiimwe et al. (2014) did not show any significant association between contraceptive use and wealth owing to the impact of the level of education of respondents that is those with less than senior high level of education were found to be amongst the poorest wealth quintile. The findings of the research further showed that, respondents who were married were less likely to use any form of contraceptives compared to those who were unmarried in 2007. However from the pooled data analysis it was found to have declined over the decade with

unmarried women still have some gaps in contraceptive use. Giving credibility to the significance of religion in affecting contraceptive use, the findings of this study showed no significant association between religion and contraceptive use yet revealed some level of significance amongst the Muslim group in 2007. This could be due to reducing impact of religion in the lives of Ghanaians and the reluctance of some young adults in having sex at their age. The decrease in contraceptive use could also be due to the desire for children. This can be seen by the rise in population growth from 22.7 million to 28.83 million in 2017. Also the decrease in use could be attributed to religious beliefs and restrictive knowledge on contraceptives.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Effective family planning or use of contraceptive methods is key to improving the health and status of women of reproductive age. This helps them make informed decisions about their reproductive life and also aids in reducing the risk of mortality associated with unplanned pregnancies.

The study primarily sought to establish a relationship between contraceptive use and abortion over the decade (2007-2017). It also went on to examine factors that had been influencing the prevalence of both abortion and contraceptive use over the data using data from the 2007 GMHS and 2017 GMHS.

Prevalence of induced abortion was found to have declined by 24.4% over the ten-year period possibly due to desire to have children and use of contraception. Other factors that affected abortion prevalence over the decade included age, marital status, educational level, religion and type of residence. Other determinants such as wealth index, ethnicity and legality of abortion also affected the prevalence yet were not significant in the study.

Also prevalence of contraceptive use also declined over the decade by 16.7% possibly due to the desire to have children and probably less specific and sensitive education on contraceptives. Factors that influenced the prevalence of contraceptive included age, marital status, educational level, ethnicity and region at significant levels. Other factors such as wealth index, religion and legality of abortion equally affected prevalence but were not significant in the study.

From the study, contraceptive use amongst respondents reduced the likelihood of respondents from engaging in abortion.

6.2 Recommendations

Suggested recommendations for this study aid in the formulation of result-effective policies and programs to improve the sexual and reproductive health status of women of reproductive age in Ghana.

- Interventions that have been put in place to tackling the prevalence of abortion in Ghana seems to be working and hence such interventions must continue making adjustments in the areas of education to help reduce the prevalence by 30% which will go a long way to achieving the Sustainable Development Goal 3(SDG 30).
- Despite the knowledge of contraceptives, the Ministry of Health and other stakeholders should equally put in interventions to increase contraceptive use by incorporating education on contraception into daily clinical healthcare, advocating on various social media platforms and bringing to light misconceptions about contraceptives and deal with them.
- Furthermore, the Health Ministry in conjunction with the Education Ministry should incorporate reproductive health curriculum into the educational system from the junior high level to prevent unintended pregnancies and acknowledge the importance of contraceptives.
- Future work needs to be done to evaluate the best ways to educate health workers and the public on the law and availability of services.

- The government of Ghana and other stakeholders must invest more into reproductive health to help increase contraceptive use which will reduce over-population resulting in less burden on the economy.

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