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DETERMINANTS OF UNSAFE ABORTION AMONG WOMEN OF REPRODUCTIVE AGE GROUP IN GHANA, EVIDENCED FROM MATERNAL HEALTH SURVEY 2017 DATA

BY

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DECLARATION

I, Robert Obulejo Ballu, hereby declare that apart from duly cited literatures of other people's work, this thesis is my original work and has not been submitted for the award of any degree in any institution.

…… ……..

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PROF TORPEY KWASI **DATE**

(ACADEMIC SUPERVISOR)

DEDICATION

This work is dedicated to God Almighty Father creator of universe, Rev. Fr. Denis Isa Iranya Ballu, Mr. Raphael Okpwoku Ballu, Dr. Patrick Y Anguzu, Ms. Joseline Kakayo and my wife, Mrs. Beatrice Bako and the beloved children.

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LISTS OF ABBREVITIONS

CAC: Comprehensive Abortion Care

D&C: Dilatation and Curettage

D&E: Dilation and Evacuation

DHS: Demographic Health Survey

ERC: Ethical Review Committee

GDHS: Ghana Demographic Health Survey

GHS: Ghana Health Services

GMHS: Ghana Maternal Health Survey

GSS: Ghana Statistical Services

IRB: Institutional Review Board

LAC: Latin America and Caribbean

MHS: Maternal Health Survey

MOH: Ministry of Health

MVA: Manual Vaginal Aspiration

PAC: Post Abortion Care

PHC: Population and Housing Census

STD: Sexually Transmitted Disease

UN: United Nations

WHO: World Health Organization

ABSTRACT

Introduction: Unsafe induced abortion is still a major public health concern in Ghana and many other developing countries. The objective of the study was to identify determinants of induced abortion among women of reproductive age group in Ghana as evidenced from Ghana Maternal Health Survey 2017 data.

Methodology: Data of 6,896 women of reproductive age group who had done something to end unwanted pregnancies from 2012 to 2017 was extracted from the Ghana Maternal Health Survey 2017 data. Analysis was done using STATA version 15 (StataCorp LP, College Station, TX). Chi-squared test and logistic regression models were used to measure association and strength of association between unsafe abortion and some independent variables at significance level of P-value <0.05

Results: The study found 59.1% safe induced abortion and 40.9% unsafe abortion carried out from 2012 to 2017 by women of reproductive age (15-49 years). Women aged 20-24 years who were not married, living in urban areas, Christian by religion, educated with Junior high certificate, belonging to fourth wealth index quintile category, history of one parity and were living in Ashanti region formed the largest proportion of the women who had carried out induced abortion. 80.5% women were not using contraceptives by the time they became pregnant thus exposing themselves to unwanted pregnancies while 19.5% of the women were using contraceptives but reported some failures of the contraceptive methods like pills and injectables to protect them against unwanted pregnancy that led them to have induced abortion. Majority, 92.0% of the induced abortions were initiated in environment that do not meet minimum medical standards for sterile procedures by Pharmacists/drug shop sellers (40.4%) and later ended up at health facilities as incomplete, missed or septic abortions. Consequently, 95.4% women had gone to health facility as last place to end

unwanted pregnancy, however, only 59.1% of them successfully had safe induced abortion at health facility where mostly medical doctor 35.4% and nurses/midwife only 7.4% respectively provided abortion services at health facilities. Public health facilities 54.1% mostly preferred for the abortion related services compared to private health facilities. Unplanned pregnancy, non-contraceptive use, failure of contraceptive, history of previous induced abortion, poor post abortion care services, cadre of the health workers, age at first sexual intercourse (Early sexual debut), partners living with the respondents, attitude of the partners towards to having induced abortion, late health problems due to induced abortion, place of treatment for complications due to induced abortion, payment and the year of the induced abortions were significant proximate determinants that influenced induced abortion. While pregnancy before or out of marriage, age at first marital union (Early marriage), polygamy though not commonly practiced 13.3% but had strong association with induced abortions and improper knowledge on safe, legal abortion by women were significant distal determinants that influenced induced abortion among women of reproductive age group in Ghana.

Conclusions: In 2006, Ministry of Health launched Reducing Maternal Morbidity and Mortality program aimed at reducing morbidity and mortality due to unsafe abortion. However, non-contraceptive use, lack of proper knowledge on safe, legal abortion contributed to 40.9% of unsafe abortion cases from 2012 to 2017. Many women, 36.3% were denied opportunity to access abortion related services at health facility. Therefore, the health facility environment should be made favorable for safe abortion services including contraceptive services by government through ministry of health and Ghana Health Services by reviewing policies on abortion, build the capacity of the health workers especially the nurses/midwifes, doctors to provide quality Comprehensive Abortion Care services.

DEFINITION OF TERMINOLOGIES

Abortion law: What the law says about abortion. Whether it permits or restricts abortion

Abortion: It is termination of pregnancy and expulsion of its products. It can be spontaneous or induced abortion

Age at first sexual intercourse: First sexual intercourse in one's life

Age at first union: It is age at which women were first married or lived with a man or consensual partner by specific exact ages

Cohabiting: It is the arrangement where two people who are not married but live together. They often involve in a romantic or sexually intimate relationship on long term or permanent basis

Comprehensive Abortion Care: Includes all the elements of safe induced abortion for all legal indications as well as all elements of post abortion care

Cultural influence: Beliefs and practices like early marriages, polygamy, producing many children that **has** influence on abortion

Demographic characteristics: These are respondents (Population) characteristics that include age, marital status, education, parity, residence, region, religion, wealth quintile index

Distal determinants: These are national, institutional, political, legal, societal, religious and cultural factors that influence induced abortion by acting on the more proximate factors. Distal determinants are usually more stable than proximate determinants

Induced abortion: It is deliberate termination of pregnancy and expulsion of its products

Marriage: Is the legal or formal or culturally recognized union of two people as partners in personnel relationship. In Ghana it is between a man and a woman

Married before: In Ghanaian context, this refers to when a woman was previously legal, formal or culturally united in personnel relationship with a man

Post Abortion Care services: This is the care provided after the abortion has been procured and it includes community and service provider partnership, counselling, treatment of the complications of the abortion, family planning and contraceptive services, reproductive health and other services

Proximate determinants: These are behavioral factors through which the socio economic and environmental factors operate to influence the rate of induced abortion

Quality of care at health facility: This is broad and measured at different perspective of the stakeholders **such as** the clients, the health workers, managers and donors. However, this includes Knowledge, Attitude and Practices of health workers on provision of induced abortion, Availability of drugs/supplies/equipment for abortion care services, Availability of Family Planning and contraceptive services, privacy and bench hours

Safe Induced abortion: It is the termination of unwanted pregnancy by medical trained personnel in an environment that meets minimum medical standards

Spontaneous abortion: It is non deliberate or unintentional termination of pregnancy and expulsion of its products before 28 weeks of gestation. The cause is natural

Unsafe Induced abortion: Is the termination of unwanted pregnancy by unskilled personnel or in environment that does not meet minimum medical standards or both

Key Words: Determinants, Induced abortion, Women of Reproductive age group, Ghana Maternal Health Survey and Ghana

CHAPTER ONE

INTRODUCTION

1.0 Background

This chapter presents the background information to the study problem, the objectives, research questions, justifications of the study and limitations of the study

1.1 Introduction

Induced abortion, safe or unsafe, is a universal phenomenon that has existed throughout recorded history. When faced with an unwanted pregnancy; women seek abortion and self-induce it or find providers, irrespective of the law. Yet, abortion continues to be the most emotive and contentious issue in reproductive health (Pazol et al., 2011;Embryo et al., 2007). Safe abortion is a procedure for terminating an unwanted pregnancy carried out by persons trained, have skills and in an environment that conforms to the minimum medical standards while unsafe abortion is abortion performed by either skilled or unskilled personnel in an environment that does not meet minimum recommended medical standards or both (WHO, 2015)

The rate of abortions globally dropped between 1995 and 2003 from 20 to 15 per 1,000 women aged 15–44 (Singh, Wulf, Hussain, Bankole, & Sedgh, 2009a). These changes are attributed to increase in contraceptive use in some areas such as Latin America, Asia and part of Africa such as Morocco, Tunisia, Botswana and Ghana that has led to reduced unwanted pregnancies. Additionally, increased comprehensive abortion care knowledge and practices among health workers such as use of Manual Vaginal Aspiration-MVA (Surgical method) and use of

Mifepristone and Misoprostol tablets (Medical method) have also been attributed to reduced rates of unsafe induced abortion (World Health Organization, 2012) . Hence, in developing countries for example Ghana access to safe abortion particularly by social and economically empowered women has increased (Clarke & Mühlrad, 2016). Every year in Sub -Saharan African 2.2 million unwanted pregnancies and 25% of unsafe induced abortions are estimated to occur especially among young people (Frederico, Michielsen, & Arnaldo, 2018). In 2008, 43.8 million induced abortions occurred globally, 22 million were safe abortion while 21.6 million were estimated to be unsafe. The majority (98%) of them took place in developing countries with 41% (8.7 million) being performed on women aged 15 to 24 years (Ouédraogo & Sundby, 2014). The complications associated with unsafe abortion are sepsis, hemorrhage, genital trauma, pelvic inflammatory diseases, secondary infertility and even death. Through primary prevention intervention such as girl child education, sexuality education, family planning and contraceptive services the severe physical complications of unsafe abortion can be prevented. Further still secondary and tertiary preventions services like provision of safe, legal induced abortion and quality post abortion care services will significantly reduce morbidity and mortality due to unsafe abortion (Frederico et al., 2018).

Research has shown that safe and legal abortion contributes significantly to improving women's sexual and reproductive health and quality of life which otherwise will be affected negatively by complications of unsafe abortion. Further still in countries for example United States where abortion is safe and legally accepted with good contraceptive services, have low rate of unsafe abortion compare to those parts of the world where abortion remains prohibited or restricted thus making unsafe abortion a serious health problem. In the United States, 22 percent of all

pregnancies (excluding miscarriages) end in abortion, but less than 0.3 percent of abortion patients experience a complication that requires hospitalization (Gedif, 2016).

As abortion becomes more liberal (Legalized) notably in many developing countries such as India, South Africa, Ghana then gestational age for safe abortion becomes center of concerned that must be provided for in the policy guideline so as to safe guard quality of Comprehensive Abortion Care services (Ouédraogo & Sundby, 2014). Liberalizing abortion laws and making it safe, accessible, available, affordable and of high quality would never pave way for the increased rate of abortion(Aku, Morhe, Morhe, & Sciences, 2014; Morhee & Morhee, 2006). As abortion is emotive, safe or unsafe, legal or illegal, a woman with unwanted pregnancy will find a provider for abortion or self-induced it, therefore the rate at which women seeking abortion is similar for both women living in developed countries such as United States with liberalized abortion law and in countries for example Uganda, Kenya with restrictive abortion law which otherwise is contrary to the common belief that legalization of abortion will necessarily increase abortion rates (Sundaram, Juarez, Bankole, & Singh, 2012). Safe abortion is completely safe when performed by skilled medical personnel within recommended minimum set medical standards and in the permissiveness of the law of the country (Legal framework). However, in countries for example Ghana where there is no clarity and general lack of knowledge by the community on abortion law thus prevent equal accessibility to safe abortion by women who need the services thus making them to procure unsafe abortion (WHO, 2015). According to World Health Organization 2012 standards for safe abortion, “All first-trimester procedures for safe abortion, Manual Vaginal Aspiration (MVA) or medication abortion can be used in primary-level health facilities by midlevel health professionals such as trained midwives and nurses while dilation and evacuation (D&E), dilation and curettage (D&C) and second-trimester medication procedures are more

appropriately performed in secondary or tertiary-level facilities by gynecologists or specially trained general physician". A basic consideration in determining which methods are safest is length of gestation (Singh et al., 2009a).

The common causes of unwanted pregnancies for people to seek induced abortion are inability to access, use or failure of the contraceptive methods to protect against unwanted pregnancies. Other reasons are marital status, area of residence, pregnancies as a result of sexual abuse, economic status, education level, being young and lack of support from family/relative (Tilahun, Dadi, & Shiferaw, 2017; Alhassan, Abdul-Rahim, & Akaabre, 2016). Societal determinants like social norms, religion, cultural norms that creates stigma for unwanted pregnancies greatly force people to seek for concealed abortion (Jones & Jerman, 2017). And other environmental factors like existence of sex education , the health care system and abortion laws all influence the decisions where to have an induce abortion by women (Clarke & Mühlrad, 2016). Other studies have shown that when there is no clarity and information on abortion law like in Ghana despite permissiveness, it will make many health providers to fear to provide safe abortion and many women will end up carrying out concealed abortion (Gedif , 2016). According to Ghanaian law, abortion is technically illegal, but nonetheless permitted in many circumstances. As per Consolidation of Criminal Code of Ghana, 1960. Act 29. Section, 58, 10th December 1999, "Abortion is unlawful and both the woman and anyone who abets the offence by facilitating the abortion by whatever means are guilty of an offense of causing an abortion". However, in contradiction Ghanaian legal code enumerates circumstances under which abortion is permitted, for examples rape, foetal anomaly and when the continuance of the pregnancy would involve risk to the life of the pregnant woman or injury to her physical or mental health" Consequently creating confusion among population of Ghana on legality of safe, legal abortion thus making unsafe abortion to contribute 30% of maternal deaths

(Aku et al., 2014). In developing countries more so in Ghana, it is difficult to obtain comprehensive information/records on the induced abortion and to create accurate measures of its extent of uptake because women who seek abortion services and most health providers are reluctant to respond to survey questions concerning abortion as a result they even underreport due to fear of the restrictive law on abortion, stigma with abortion at individual, community and institutional levels (Sundaram et al., 2012; Hesse & Samba, 2006)

High-quality post abortion care (PAC) services integrated with quality family planning services including method mix of contraceptives will highly break vicious cycle of unwanted pregnancies and need for induced abortion services resulting into reduced maternal morbidity and mortality (Evens et al., 2014)

1.2 Problem statement

The number of abortions globally fell from an estimated 45.5 million in 1995 to 41.6 million (35 to 29 per 1,000) though unsafe abortion continues to be a major public health problem in Ghana and scores of other developing countries (Singh, Wulf, Hussain, Bankole, & Sedgh, 2009). Forty-two million out of 210 million pregnancies each year are voluntarily aborted worldwide. Of these, 22 million occur within a formal health care system and 20 million outside of the health care system which poses a big challenge at individual, society and the health sector especially in managing the complications associated with it (WHO,2012). In Sub-Saharan Africa, 3.9% of maternal deaths are due to unsafe abortion arising from an estimated 19 million unsafe abortions performed annually and half of the proportion of the women will need medical care for complications (United Nations, 2014) . According to 2017 Ghana Maternal Health Survey report, twenty percent (20%) of women of reproductive age group in Ghana have ever had an induced abortion due to unplanned and unwanted pregnancies. These, mostly contributed by non or low

uptake of contraceptives to limit fertility or space next births (Date et al., 2017; United Nations, 2014) result in increased rates of unsafe abortion that accounts for about 12% of maternal deaths in the country (Rominski, 2014). Other influencing factors are being younger, being unmarried, having had a previous induced abortion, being student, cost, privacy and perceived restrictive law on abortion (Gbagbo, 2014). Despite having liberalized abortion in Ghana in 1985, the lack of knowledge on abortion law by both community and health workers, poor provision of Comprehensive Abortion Care which also includes Post Abortion Care and family planning services , weak capacity of the health workers including health care system to manage complications in both primary and referral health care facilities leading to many referrals thus causes delays in immediate care for complications of unsafe abortion consequently exert much pressure on already resource constrained health care system (Rominski et al., 2016; Morhee & Morhee, 2010; Maxwell, Voetagbe, Paul, & Mark, 2015).

It is against this background that this study attempted to investigate the determinants of unsafe abortions among women of reproductive age group in Ghana evidenced from Ghana Maternal Health Survey 2017 data

1.3 The objective of the study

The main objective of the study was to identify determinants of unsafe abortion among women of reproductive age group in Ghana

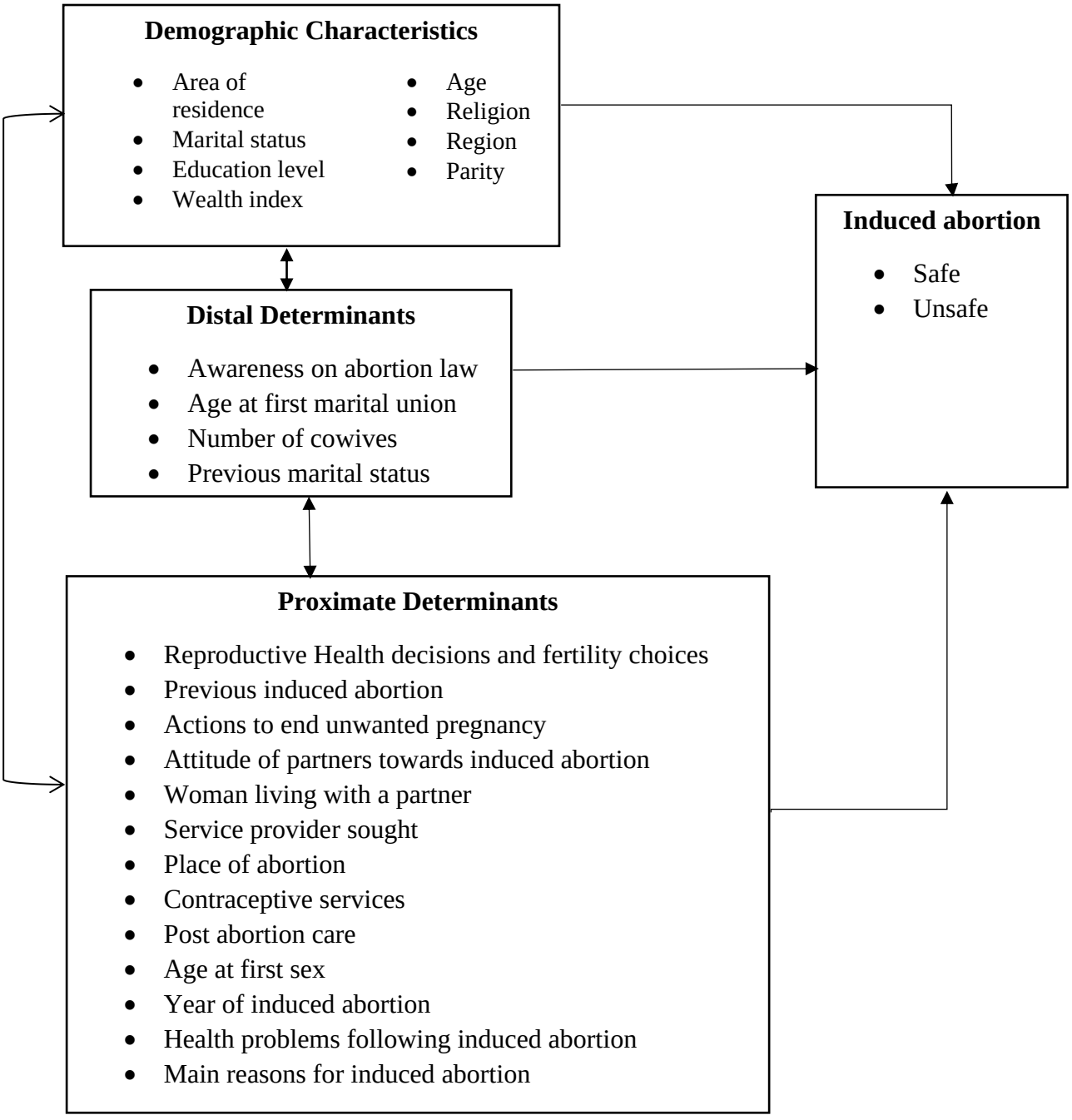
1.4 Specific Objectives

1) To determine demographic characteristics associated with unsafe abortion among women of reproductive group in Ghana

2) To identify proximate determinants associated with unsafe abortion among women of reproductive group in Ghana
3) To assess distal determinants associated with unsafe abortion among women of reproductive group in Ghana

1.5 Research Questions

1) What were the demographic characteristics of women associated with unsafe abortion among women of reproductive group in Ghana?
2) What were the proximate determinants associated with unsafe abortion among women of reproductive group in Ghana?
3) What were the distal determinants associated with unsafe abortion among women of reproductive group in Ghana?



1.6 Figure 1: Conceptual Framework for determinants of unsafe abortion among women of reproductive age group in Ghana

Adapted from Ofori-Amankwah, 2012 determinants of unsafe abortion among adolescents and young adults in Ghana as described by Mundigo and Olukoya, 2006

1.7 Narrative of Conceptual framework

The framework above explains determinants of induced abortion among women of reproductive age in Ghana focusing on framework adapted from Ofori-Amankwah, 2012 and as Rossier, 2003 described in broad conceptual framework for induced abortion in developing countries.

According to Ofori-Amankwah (2012) study, determinants of unsafe abortion can be categorized as demographic characteristics determinants, proximate determinants and distal determinants

The demographic characteristics that contribute to unwanted pregnancy and decision for induced abortion are age, marital status, area of residence, region, religion, education level, parity and wealth index quintile category.

The proximate determinants that influence decision process for safe or unsafe abortion are the reproductive health decisions/fertility choices, contraceptive use/contraceptive services, previous induced abortion, actions and places to end unwanted pregnancy, attitude of partners towards induced abortion, woman living with a partner, service provider sought, place of abortion, post abortion care, age at first sexual intercourse, year of induced abortion and late health problems following induced abortion while distal determinants are the law on abortion, early marriage, polygamy and previous marital status also influence decision to either have safe or unsafe induced abortion

According to Rossier (2003) study, abortion is portrayed as the result of several conditional and interrelated behaviors and events – namely, sexual practices, contraceptive use and pregnancy and its intention which comes with its own risk and precipitating factors. While these risk and precipitating factors may overlap across behaviors and events like decision of family members,

law on abortion. The importance or direction of their effects may differ at the various stages of the process leading to induced abortion.

1.8 Justification

Understanding the demographic characteristics, proximate and distal determinants that influence women of reproductive age in Ghana to carry out unsafe abortion will help to design programs such as community engagement through sensitization, education, dialogue, round table talk for peer groups on abortion that would enable community people to take timely decisions and assist in reducing unsafe abortion practices associated with its complications

Investigating determinants of unsafe abortion among women will enable targeting of identified sub-groups for intervention aimed at addressing reasons some women are too desperate to terminate unwanted pregnancies so to reduce incidence and consequences of unintended pregnancies and unsafe abortion

As it may be the first immediate follow up study of Maternal Health Survey 2017, it will help to lay down foundations for the formation of new policies of liberalizing abortion that will subsequently reduce rates of unsafe abortion and its associated complications

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews literatures on demographic characteristics, proximate and distal determinants that influenced induced abortion among women of reproductive age group. Google scholar, Jstor, PubMed and other publications were some of the sources used

2.1 Demographic characteristics

Five countries in Africa (Ghana, Nigeria, Gabon, Congo Republic and Ethiopia), Thirteen (13) in Asia, eight (8) in Europe, and two (2) in Latin America and the Caribbean (LAC) were selected for review studies with their data analyzed by Chae, Desai, Crowell, Sedgh, & Singh, (2017). In all African countries except Nigeria, women aged 20–29 years accounted for more than half of the reported induced abortions. While induced abortions were highest among women aged 25–29 years (46%) and 30–34 years (42%) in Asia countries. Abortion trends in surveyed European countries is like the trends in Asian countries. Half of the proportion of the induced abortion in Europe occurred among women in their thirties, 44% among women in their twenties while 6% induced abortion registered among the adolescents. Sexual reproductive health empowerment of the adolescent in most European countries have played significant roles among young people in preventing teenage or unwanted pregnancies as compare to their counterpart in Africa. In Haiti and Mexico City women aged 20-29 years carried out most of the induced abortion compared to any other age group of the women. Because, many women in this age group would wish to delay pregnancies as they are in their prime stage of career development such as personal academic

career and many other reasons. Further still in Mexico City and Haiti, one-quarter of induced abortions occurred among women aged 30–39 years and the least among women aged 40-44 years, 3% and 6% respectively. In countries for examples Ghana, Gabon, Congo Republic, Haiti, Ukraine, Moldova and Albania most induced abortions were carried out by married women while Ethiopia, Nigeria, and Mexico City induce abortion was highest among unmarried women. In African countries half (50%) of all induced abortions were carried by nulliparous women especially in Ghana and Nigeria while 44% induced abortions cases were recorded among multiparous women. This could be due to unmet need for contraception to limit fertility, or failure of contraceptive methods after successfully pregnancies. In Asian countries, 73–85% induced abortions were registered among multiparous women. In Europe induced abortions were common among women with history one birth and multiparous which however also vary from one country to another. For example, in Ukraine half (50%) of all induced abortions occurred among multiparous, 49-70% of induced abortion in Albania, Moldova and Montenegro occurred in multiparous while nulliparous women accounting for 13-16%. Equal proportions of induced abortion occurred among different type of parities in Central America and Caribbean countries respectively with relatively higher proportions among multiparous women by 38%. Both in Africa and Asian countries women who are economically better reported to have had higher proportions of induced abortions compare to their counterpart who are economically poor. However, exceptionally Armenia and Azerbaijan registered higher proportion of induced abortions among poor women. It was also noted that Albania, Ukraine, Nigeria, the Philippines, and Vietnam had much weaker pattern of induced abortion associated with economic status of women. In African countries women with higher educational level registered high proportions 61%-82% of induced abortion compare to their counterpart. Women with high social status are empowered therefore

able to make their independent reproductive health decisions and fertility choices respectively. Women with secondary education registered 22%-100% cases of induced abortion in Asian countries like Cambodia (22%) and Kyrgyz (100%) and this is also reflective of literacy levels in the respective countries. In Europe for examples in Albania, Moldova and Ukraine women with secondary education recorded smaller proportion of induced abortion compared to other subgroups of the women. While the proportion of women with secondary education recorded similar trends of induced abortions to the trends in the other subgroups of women in Haiti. Urban women in Africa recorded higher percentage 60%-89% of induced abortions compared to rural women. Likewise, urban women in Asian countries accounted for the higher proportion 78% of induced abortion especially in Turkey. In Central American and Caribbean countries, it is only Haiti which had data on type of residence thus higher proportion (69%) of induced abortion cases were recorded among urban women in Haiti.

In the study conducted by Souza et al., (2014) in the city of Sao Paulo, greater proportion (35.5%) of women who had induced abortions were aged 40-45years while 22.5% of the induced abortions were recorded among women aged 30-35years. The two categories of women had higher proportions of induced abortions compared to their counterpart because of unmet need for contraception to limit their fertility. Women who were in middle class economy reported more cases (80.6%) of induced abortion while 19.4% of induced abortion cases were recorded among women in poor class. Women with higher school and elementary level II certificate respectively accounted for 38.7% of induced abortion and 12.9% of women with elementary. And the biggest proportion, 67.8% of induced abortions were recorded among married and cohabiting women.

Study conducted on abortion patients in USA by Jones, Rachel and Jerman (2017), found the largest proportion of abortion patients were adolescent in 20s and 30s (60%,25%) respectively however, it declined significantly between 2008 and 2014 by 32%. Forty six percent (46%) induced abortion was among respondents who were never married, 31% induced abortion cases registered among cohabiting respondents, 14% of induced abortion cases were among respondents who were married while 9% of induced abortion among previously married respondents. Race and ethnicity were also significant indicators for induced abortions services hence highest, 39% of induced abortion occurred among white, 28% was among the black, 25% of induced abortion among the Hispanic while 6% cases of induced among the Asian or Pacific Islander with least percentage, 3% of induced abortions cases among other races. The whites were more empowered to make their reproductive health decisions and fertility choices compare to other races and ethnicities. Overwhelming, 91% of induced abortion registered among respondents who graduated from high school. The improved status of the women through education makes them to decide independently on their reproductive health decisions and their future fertility level. Majority, (59%) of the respondents who had induced abortions were among women with history of one birth or more than two births while 41% of induced abortions among nulliparous respondents. High unmet need for contraception contributed greatly to these proportions. Women in federal poverty level (Poor and low income respectively) registered high by 49% cases of induced abortions. Unintended pregnancy also commonly occurs in sexual minority women because they may have different sexual reproductive health knowledge, behaviors/practices or a higher prevalence of risk factors such as previous exposure to sexual abuse. However, only four (04%) induced abortions were registered among the bisexual, 1% induced abortion occurred among women who identified

themselves as "Something else" and 0.3% case of induced abortions occurred among the homosexuals, gays or lesbians.

2.2 Proximate determinants

Though abortion may cause little stress in some women, many women will develop prolonged psychological torture as a result many women will try to avoid unsafe abortion except when the pregnancy is unwanted/unintended (Rominski, 2014; United Nations, 2014). In the study of Pazol, Creanga, & Jamieson (2015) women said, "We were really opposed to this abortion before but later we found ourselves facing choice to abort because the pregnancy is really unwanted". Globally, unwanted pregnancy is the main reason women decide to carry out induced abortion.

Many women particularly in the capital city of Ethiopia, Addis Ababa and many other urban areas globally are delaying pregnancies as their status improve whereby can make reproductive health decisions and control their choices on fertility levels respectively. That explains why most women consider pregnancy unwanted which otherwise could have been wanted some twenty years ago (Chae, Desai, Crowell, Sedgh, & Singh 2017). However due to unmet need for contraception, millions of induced abortions take place every year globally. For example, in 2008 survey in Ethiopia showed an estimated 382,000 induced abortions were performed and 52,600 women were treated for complications of unsafe abortion (Bankole, Singh, & Haas, 2018). In Bhutan significant increase in induced abortion was related to an increase in the proportion of women not desiring additional children. This is because of unmet need for contraception to limit fertility (Wangdi & Gurung, 2016**;** Andersen et al., 2015). In Nepal, pregnancy intention is a major factor that has strong association with induced abortion. Hence, women with unwanted pregnancy always do anything to terminate the pregnancy regardless of their faith, belief, the law and attitude to abortion (Khanal, Sanjel, & Chalise, 2014 ; Bitew et al., 2008).

Evidence has shown that when women who use modern contraceptives are less likely to be exposed to unwanted pregnancy and subsequent induced abortion than women who are not using any contraceptive method (Pazol et al., 2015). Therefore, strong, vibrant family planning services with availability of method mix contraceptive commodities especially for Postpartum contraceptive services breaks vicious cycle for induced abortion due to unwanted pregnancies. According to data analyzed from 172 countries, 272,000 maternal deaths were estimated to have been prevented in one year resulting to 40% reduction of maternal morbidity and mortality. However, high method failure rates along with lower contraceptive prevalence rates and high rate of unmet need for contraception produce relatively high levels of induced abortion in the community due to unwanted pregnancies (Rominski et al., 2016). Apparently, the use of induced abortion as control of fertility is diminishing drastically and reliance on abortion is likewise disappearing. This is due to increased demand creation for and availability of modern contraception with its high level of adoption by women (Ahmed, Rahman, & Ginneken, 2018).

Quality post-abortion care (PAC) not only helps to treat and manage complications of unsafe abortion but also helps to prevent maternal morbidity and mortality, vicious cycle of unwanted pregnancies that require demand for induced abortions and other sexual reproductive health matters (Pazol et al., 2015). Post abortion care involves emergency treatment of abortion complications, family planning services with use of modern contraceptives, screening and treatment of STIs, HIV/AIDS care, referrals, community sensitization/outreach with special visits to women who have had abortion, and empowerment on CAC especially post abortion care (Mugore, Kassouta, Sebikali, Lundstrom, & Saad, 2016). However, the provision of quality PAC in Ghanaian healthcare facilities and most developing countries is poor due to following factors negative attitudes of health workers (Mostly caused by the fear of the abortion law presumed to be

illegal) (Gbagbo, 2018)to provide post abortion care, stigma in community towards abortion resulting in continued seek for concealed abortion services, chronic shortage of medical supplies and commodities at health facilities for examples family planning commodities, antibiotics to treat sepsis due to unsafe abortion resulting into many referrals(Mutua, Manderson, Musenge, & Achia, 2018; Paul, Gemzell-Danielsson, Kiggundu, Namugenyi, & Klingberg-Allvin, 2014). Globally, uptake of modern contraceptives has increased (Evens et al., 2014; Odeyowu, 2000), but, however, uptake of post abortion contraception is still low in developing countries (Gbagbo, 2018)

Strong service provider skills associated with good knowledge and attitudes are essential in delivering of quality CAC with strong and effective PAC services which will encourage uptake of the services at all available levels of care. This calls for involvement of many stakeholders like health workers, clients, community members, cultural and political leaders (Okonta, Ebeigbe, & Sunday-adeoye, 2010). Self-trusting environment should be created by health workers to provide confidentiality and create confidence in clients and community members at large for CAC services (Morhee & Morhee, 2010). Community services including referral system should be strengthened and capacity of the health workers built to provide client centered abortion services (Mutua et al., 2018)

2.3 Distal determinants

Legalizing abortion alone may not reduce the cases of unsafe abortion completely , but it will build confidence both in the service providers and women hence makes women to seek abortion services at health facilities early and timely that will help to reduces much of the complications due unsafe abortion or in late trimester (Morhee & Morhee, 2010; Okonta et al., 2010). Bold and strong political decision taken by the government to legalize abortion, subsequent initiative for

community policing to sensitize on safe, legal abortion is key in addressing maternal morbidity and mortality due to unsafe abortion. Many developing countries are legalizing abortion like Ghana, South Africa, India, Nepal and Ethiopia and others which otherwise has contributed significantly especially in South Africa in reduction of maternal morbidity and mortality. However, still consolidated stakeholders efforts to scale up safe, legal abortions in some of these countries like Ghana is a big challenge due to unclarity on abortion law thus creating wide scope of knowledge gap on safe, legal abortion among the community (Wangdi & Gurung, 2016; Sundaram et al., 2012). Abortion in the United States is legal, but still some people procure unsafe induced abortions services due to unawareness on safe abortion services as indicated in 2008 study (Jones & Jerman, 2017) where 1.2% of women (Respondents) reported to have self-induced abortion by use of Misoprostol while 1.4% of the women had attempted to induce abortion by use of other substances like herbs, vitamin C tablets. However, the percentage of unsafe induced abortion significantly declined from 1.4% in 2008 to 0.9% in 2014 due to sensitization on safe abortion led to reduction in the use of other substance to induce abortion (Unsafe induced abortion). Meanwhile it should be noted that use of other substances to induce abortion in developing countries like Ghana is still high due to ignorance on safe, legal abortion services or restrictive abortion law in some of the countries(Sundaram et al., 2012)(Ofori-Amankwah, 2012)

In Nepal despite legalizing abortion in 2002, it was found out that there is (59%) lack of universal knowledge on legality of abortion among many of the local women similar to the report given by a household-based survey completed at the country's Rupendehi district (Andersen et al., 2015). In India although abortion has been legal since 1972, only 18.0% respondents knew that abortion is legal with 64.0% of respondents thought it was not legal, and the remainder were unsure hence majority of women resort to concealed abortions for unintended pregnancies (Denberu, 2017;

Varkey, Balakrishna, Prasad, Abraham, & Joseph, 2000). Similarly, though abortion has been legal in Puerto Rico for 20 years, there was still a widespread knowledge that it is illegal with low level of sensitization, demand creation for safe, legal abortion consequently even medical students knew little on the legality of abortion forcing many women to seek for concealed abortions

In developing countries cultural barriers, religious oppositions and restrictive abortion law go hand in hand and these three make people (Women) to seek for unsafe abortion services which are associated with many complications (Varkey et al., 2000). In Nepal before 2002, abortion was previously legally prohibited on account of the country's strong cultural established customs so morally incorrect and unacceptable to carry out abortion services. Therefore, particularly a husband when found involved in helping his wife to abort was compelled to abandon her (Khanal et al., 2014). Consequently, women were forced to seek for concealed abortion services outside health facilities due to fear of reprisals and social condemnation (Cockrill, Upadhyay, Turan, & Greene Foster, 2013). Primary prevention intervention like massive demand creation for modern contraception use, girl child education and sex education should be long term investment. Improving status of women, empowering their sexual reproductive health rights will enormously contribute to reduce cases of unwanted pregnancies and demand for induced abortion (Tuladhar & Risal, 2010).

In study conducted in Ethiopia whose finding is similar in most African countries (Developing countries) due to strong cultural and religious background, abortion is considered to be sinful (86.7% of the cases and 86.7% of the control) and against Gods will therefore unacceptable (52.3% of the case and 64.1% of the control) hence taboo to be discussed among families and among members of the community. Therefore, stigmatized forcing women to seek for concealed induced abortion (Ahmed et al., 2018; Prakriti Khanal, Keshab Sanjel, Hom Nath Chalise, 2014).

2.4 Summary

After having reviewed several literatures, and in line with the findings of this study, age, area of residence, marital status, number of parities, religion, education level and wealth index quintile category were key significant demographic characteristics that influenced induced abortion. The age brackets 20-24 years of young women procured more induced abortion services than the old aged women. Women in urban areas, who were educated, economically rich and history of one or two parities got most of the safe induced abortions compared to their counterparts. Secondly, pregnancy intension, history of previous induced abortion, action/place of induced abortion, type of service provider sought, cadre of health workers sought for induced abortion, post abortion care services, contraceptive services are key significant proximate determinants that influenced induced abortion. Proximate determinants defined here as the immediate or socio-economic and environmental factors that influenced induced abortion. Thirdly, abortion law which was distal determinant that significantly influenced induced abortion. Distal determinants here defined as the national, political, institutional, societal, religious and cultural factor that influenced induced abortion

None of the literature reviewed clearly demonstrated or showed relationship of factors like partners attitude towards having induced abortion, woman living with the partner, age at first sexual intercourse, age at first marital union (Early marriage), year of induced abortion especially post Millennium Development Goals (MDGs) period, late health problems due to induced abortion, previous marital status, polygamy and number of cowives in polygamous marriage with induced abortion. However, this study found the above immediate mentioned factors as key significant determinants of induced abortion. Women who had started or initiated sexual activities at early age of 12-16 years and 17-21 years accessed most of the safe abortion services compared

to their counterparts. Women whose sexual partners were not informed by the women about intention to have abortion or women whose sexual partners opposed the intention to have induced abortion got most of the safe abortion compared to women whose sexual partners favored or had neutral attitude towards induced abortion. History of late health problems due to induced abortion made women to seek more safe abortion services however, which was not the case with immediate health problems due to induced abortion. The years towards to the end of MDGs program or immediately after end of MDGs had or continued to have more safe abortions compared to pre MDGs or mid MDGs periods of the years. Women who marry at early age 9-14 years and 15-19 years got more safe abortion services than their counterparts. Women in polygamous marriage likewise women with previous marital status significantly accessed safe induced abortion services

CHAPTER THREE

METHODS

3.0 Introduction

This chapter discusses the methodology of the study. It presents information on the research methodology and design, study area, population, sample and sampling design, the data collection protocol, techniques of data analysis and ethical issues discussed as well

3.1 Research Design

The study was cross sectional involving secondary data analysis of Ghana Maternal Health Survey 2017. Data extraction template was developed to extract data from maternal health survey e-Log book. This was the second maternal health survey conducted in Ghana following the first survey in 2007. It was a household survey to collect detailed information on maternal health issues, maternal mortality and specific causes of death among women of reproductive age group in Ghana. It was carried out from 15th June 2017 to 12th October 2017 and used Ghana Demographic Health survey-GDHS 2014 frame which was adopted from Ghana 2010 Population and Housing Census (PHC). The 2010 PHC frame is maintained by Ghana Statistical Services (GSS) and updated periodically as new information is received from various surveys. Ghana Maternal Health Survey 2017 involved two stages or phases. The first stage was selection of 900 enumeration areas-EA (466 EAs in urban areas and 434 EAs in rural areas). All households in selected EAs were listed, and women of reproductive age group who reported to have done something to end pregnancy since 2012 to 2017 were identified for next stage/phase. Second stage was selection of 30 households of women who reported to have done something to end pregnancy from each cluster

of 900 enumeration areas where 6,896 women were interviewed or asked questions about a wide range of maternal health-related issues pertaining to pregnancies, live births, abortions and miscarriages, and utilisation of health services in relation to these events by use of women's questionnaire (GMHS, 2017)

3.2 Study area

The study covered the whole of the Republic of Ghana which had ten administrative regions by the time of the survey. These were: - Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong Ahafo, Northern, Upper East, and Upper West regions. Currently, Ghana has 16 administrative regions. As per 2010 Population and Housing Census, there were 6,360,535 women of reproductive age

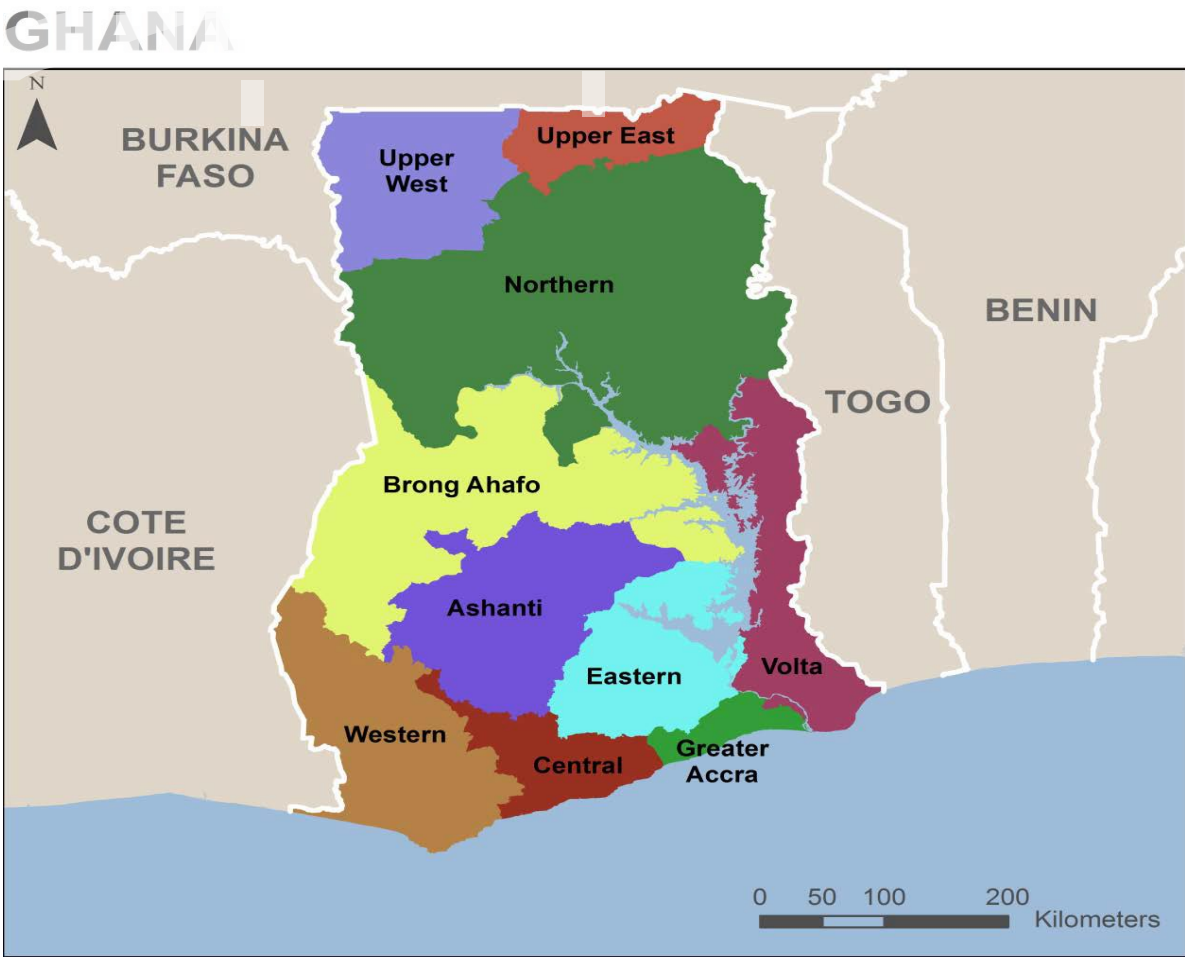


Figure 2: Map of Republic of Ghana adapted from GMHS 2017 showing the ten administrative regions

3.3 Study population

In this study, the population was all 6,896 women who had done something to end pregnancy from 2012 to the time of survey (2017). The subsample used for this study was obtained from a sample of 124,751 women of reproductive age who were eligible and interviewed on a wide range of maternal health-related matters regarding pregnancies using two different questionnaires (Household and Women's questionnaires) during Maternal Health survey of 2017

3.3.1 Inclusion criteria

These included all women of reproductive age who responded to have done something to end pregnancy from 2012 to the time of survey 2017 and were interviewed on abortion during maternal health survey 2017

3.3.2 Exclusion criteria

These included all women of reproductive age who did not response to questions on abortion during maternal health survey 2017

3.4 Sampling procedure and sample size

During second stage of Maternal Health Survey, all women, 6,896 who responded to have done something to end pregnancy from 2012 to 2017 were interviewed and considered to be sample size for this study (GMHS, 2017). Because of unequal allocation of proportions of the samples in enumeration areas of ten regions and further by urban or rural areas (GMHS, 2017), the sample size was designed to be representative of the national population of women aged 15-49 years and contains all information on listed enumeration areas. Therefore, the analysis of this study was based on weighted sample of 6,896 women aged 15-49 years who had induced abortion

3. 5 Data Collection

Data was extracted from the Ghana Maternal Health Survey, 2017 e-Logbook using data extraction template. Data of all women of reproductive age who reported to have done something to end pregnancy from 2012 to 2017 was used and guided by developed data extraction template. Maternal Health Survey which was a household survey was conducted by Ghana Statistical Services and Ghana Health Services with support from Demographic Health survey program to

collect detailed information on maternal health issues, maternal morbidity and mortality among women. 2014 Ghana Demographic Health survey (GDHS) sampling frame was used which was adopted from 2010 Ghana Population and Housing Census (PHC) and being maintained by Ghana Statistical Services.

Variables: The dependent variable which was measured in GMHS as having done something to end pregnancy is described in this study as "Induced abortion" which is either safe or unsafe induced abortion and being recoded "0" safe induced abortion and "1" for unsafe induced abortion. Safe induced abortion been defined as termination of unwanted pregnancy by skilled personnel and in an environment that meets minimum medical standard. The use of MVA, D&C/D&E, catheter, administration of tablets of Cytotec only or Misoprostol+ Mifepristone, injection of Oxytocin under supervision of trained medical personnel in health facility including privately approved maternity centers were considered safe. Unsafe abortion defined as termination of unwanted pregnancy by persons lacking necessary skills or in an environment that does not meet minimum medical standard or both. In this study abortion procured in places like pharmacy, chemical stores, home environment or through actions like self-medication of Cytotec, unspecified tablets, drinking of concoction, remedies, alcohol and other liquids, insertion of foreign objects into vagina was considered unsafe induced abortion. The first action to end pregnancy was categorized into safe and unsafe. The first place to end pregnancy was categorized into public health facility, private health facility and unhygienic environment. The last place to end unwanted pregnancy was categorized into health facility and unhygienic environment. The last action to end unwanted pregnancy was categorized into safe induced abortion and unsafe induced abortion respectively

The independent variables are age, religion, region, area of residence, educational level, marital status, wealth index quintile, parity, reproductive health decision and fertility choices, contraceptive services, post abortion care, history of previous induced abortion, year of induced abortion, health problems due to abortion, age at first sexual intercourse, type of provider sought, health workers visiting homes of abortion clients, polygamy, age at first marital union, previous marital status, awareness on abortion law. We recoded age into three different groups namely: - Age group of the respondents, age at first sexual intercourse and age at first marital union accordingly. Number of parities grouped into 1,2,3,4,5,6 and above (From 6 to 16 parities been combined), number of induced abortions since 2012 grouped into 1, 2, 3, 4 and above (From 4 to 6 combined). Main reasons for induced abortion was categorized into three broad groups namely, maternal/fetal health reasons: - Health of mother, risk of birth defects, no money to take care of baby, too young to have a child, wanted to continue with schooling, wanted to continue working, Proximate reasons:-Not ready to be a mother, no one to help me look after the child, wanted to delay childbearing, wanted to space, wanted no more children, did not love the father, did not want to stay with the father, partner did not want child/denied the pregnancy, father of the child died , because of rape, afraid of parents, parents insisted. Distal reasons: - Child sex preference for especially for male, to avoid shame from the society. The conditions under which abortion can legal be done in Ghana were categorized into three broad groups namely, maternal/fetal conditions: -Life of mother in danger, risk to physical health of the mother, risk to mental health of the mother, mother mentally not sound, fetal abnormality. Proximate conditions: - Rape and incest and distal condition like during first trimester, up-to second trimester. The transformed or recoded variables were further grouped into demographic characteristics, proximate and distal determinants respectively. Demographic characteristics: -were respondents (Population) characteristics that

included age, marital status, education, parity, residence, region, religion, wealth quintile index. Proximate determinants were the behavioral factors through which the socio economic and environmental factors operated to influence the rate of induced abortion while distal determinants were the national, institutional, political, legal, societal, religious and cultural factors that influenced induced abortion by acting on the more proximate factors.

3.6.0 Definition of variables

The conceptual framework developed in figure 1in this study helped to define independent and dependent variables respectively

3.6.1 Independent variables for the study are

Age: The age was categorized into age group at interval of five years which is categorical variables

Marital status: This was considered in general as separated, divorced, widowed, married, cohabiting and single

Religion: Main religious groups considered Christians, Islam, Traditionalist and No religion

Area of residence: This was considered rural and urban

Regions: These were the ten administrative regions of Ghana, Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong Ahafo, Northern, Upper East, and Upper West regions

Educational level: This was considered ever attended school and never attended school. For those who ever attended school they were further grouped by the highest level of

education attained for examples primary, middle, junior secondary school/junior high school, secondary, senior secondary school /senior high school/Technical and higher

Wealth index quintile category: This was categorized into lowest, second, middle, fourth and highest

Parity: This is the number of deliveries in the lifetime of the women regardless of its outcome

Age at first sexual intercourse: This was considered into groups as categorical variable at interval of four years

Age at first union: This was considered into groups as categorical variable at interval of five years

Number of induced abortions: This was number of induced abortions carried out by the women since 2012 to 2017 and considered from 1 to 6

3.6.2 Dependent variables

Induced Abortion: It is termination of unwanted pregnancy and removal of its products. It can be safe or unsafe induced abortion

Safe abortion: Is the procedure of terminating unwanted pregnancy by skilled personnel and in an environment that meets minimum medical standard. In this study the use of MVA, D&C/D&E, catheter, administration of tablets of Cytotec only or Misoprostol+ Mifepristone, injection like Oxytocin under supervision of trained medical personnel in health facility including privately approved maternity centers were all considered safe induced abortion

Unsafe abortion: Is the procedure of terminating unwanted pregnancy by persons lacking necessary skills or in an environment that does not meet minimum medical standard or both. All actions carried out at respective places to end pregnancy such as pharmacy, chemical stores, drug stores, self-medication of Cytotec, unspecified tablets, drinking of concoction, remedies, alcohol and other liquids, insertion of foreign objects into vagina in home/unsafe environment were all considered unsafe induced abortion

3.6.3 Derived variables

These are new variables which were recoded and generated by Stata command into more desirable variables

- Age categorized into three different groups namely: - Age group of the respondents at interval of five, age of the respondents at first sexual intercourse at interval of four and age at first marital union at interval of five accordingly
- Type of induced abortion was categorized into safe and unsafe. Safe abortion was when unwanted pregnancy was terminated by skilled personnel and in an environment that meets minimum medical standard. The use of MVA, D&C/D&E, catheter, administration of tablets of Cytotec only or Misoprostol+ Mifepristone, injection of Oxytocin under supervision of trained medical personnel in health facility including privately approved maternity centers were considered safe. Unsafe abortion was when unwanted pregnancy was terminated by persons lacking necessary skills or in an environment that does not meet minimum medical standard or both. In this study abortion procured in places like pharmacy, chemical stores, home environment or through actions like self-medication of Cytotec, unspecified tablets, drinking of concoction, remedies, alcohol and other liquids,

insertion of foreign objects into vagina was considered unsafe induced abortion. The first action to end pregnancy was categorized into safe and unsafe

- The first action to end pregnancy was categorized into safe and unsafe
- The first place to end pregnancy was categorized into public health facility, private health facility and out of health facility (Unhygienic environment). Unhygienic environment is the place that does not meet minimum medical standards for surgical proceedure
- The last place to end unwanted pregnancy was categorized into health facility and out of health facility (Unsafe environment)
- The last action to end unwanted pregnancy was categorized into two: - Safe induced abortion and Unsafe induced abortion respectively
- Currently in union categorized as: - Married, Cohabiting, Single:
- Main reasons for induced abortion was categorized into three broad groups namely:
  - **Maternal/fetal health reasons**: - Health of mother, risk of birth defect, too young to have a child
  - **Proximate reasons**:-Not ready to be a mother, no one to help me look after the child, wanted to delay childbearing, wanted to space, wanted no more children, did not love the father, did not want to stay with the father, partner did not want child/denied the pregnancy, father of the child died, because of rape, afraid of parents, parents insisted
  - **Distal reasons**: - Child sex preference especially for male, to avoid shame from the society, religious and other cultural reasons
- The legal conditions for abortion in Ghana were categorized into three broad groups namely:

- ❖ **Maternal/fetal conditions: -**Life of mother in danger, risk to physical health of the mother, risk to mental health of the mother, mother mentally not sound, fetal abnormality
- ❖ **Proximate conditions: -** Rape and incest

- Number of parities categorized 1,2,3,4,5,6 and above (From 6 to 16 parities been combined)
- Number of induced abortions since 2012 grouped into 1, 2, 3, 4 and above (From 4 to 6 combined)

3.7 Data analysis

Ghana Maternal Health Survey data was mathematically weighted by the Ghana Maternal Health Survey statisticians. Therefore, STATA version 15 (StataCorp LP, College Station, TX) was used to analysis the data. Descriptive statistical analyses were done where categorical variables were summarized into frequencies and proportions. Chi-squared test was performed to measure association while logistic regression models were performed to describe data and explain the relationships between induced abortion and determinants of induced abortion. The point value for significance was set at P-value <0.05.

3.8 Ethical Consideration

Data used was downloaded from Demographic Health Survey-DHS website with permission from Ghana Statistical Services through registration online with private password. Ethical issues as per primary data collections can be accessed from DHS website. Data is kept confidential in computer with personal password. In the theoretical analysis, researcher dully acknowledged the work of different scholars

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the results of data analyzed for the 6,896 women of reproductive age group who reported to have done something to end pregnancy from 2012 to 2017 and interviewed during Ghana Maternal Health Survey 2017. It captures results of demographic characteristics, proximate determinants, distal determinants that influenced induced abortion, association and strength of association of the determinants of induced abortion

4.1 Demographic characteristics

Table 1: Type of induced abortion by socio-demographic characteristics

Characteristics	Safe abortion (n=4076) (%)	Unsafe abortion (n=2822) (%)	Total (N=6896) (%)	χ^2	P-Value
Age					
15-19	435 (10.7)	199 (7.1)	634 (9.2)		
20-24	1364 (33.5)	635 (22.5)	1999 (29.0)		
25-29	1052 (25.8)	820 (29.1)	1872 (27.2)		
30-34	589 (14.5)	481 (17.0)	1070 (15.5)	189.4800	<0.001
35-39	396 (9.7)	396 (14.0)	792 (11.5)		
40-44	199 (4.9)	206 (7.3)	405 (5.9)		
45-49	39 (1.0)	85 (3.0)	124 (1.8)		
Region					
Greater Accra	576 (14.1)	441 (15.6)	1017 (14.8)		
Ashanti	864 (21.2)	426 (15.1)	1290 (18.7)		
Central region	414 (10.2)	192 (6.8)	606 (8.8)		
Western region	686 (16.8)	411(14.6)	1097 (15.9)		
Volta region	223 (5.5)	249 (8.8)	472 (6.8)	136.7583	<0.001
Eastern region	350 (8.6)	311 (11.0)	661 (9.6)		
Brong Ahafo	531 (13.0)	356 (12.6)	887 (12.9)		
Northern region	138 (3.4)	168 (6.0)	306 (4.4)		
Upper West	194 (4.8)	171 (6.1)	365 (5.3)		
Upper East	98 (2.4)	97 (3.4)	195 (2.8)		

Religion					
Catholic	326 (8.0)	362 (12.8)	688 (10.0)		
Anglican	35 (0.9)	15 (0.5)	50 (0.7)		
Presbyterian	213 (5.2)	147 (5.2)	360 (5.2)		
Pentecostal	2079 (51.0)	1380 (48.9)	3459 (50.2)	60.6604	<0.001
Methodist	289 (7.1)	145 (5.1)	434 (6.3)		
Other Christians	587 (14.4)	378 (13.4)	965 (14.0)		
Islam	425 (10.4)	333 (11.8)	758 (11.0)		
Traditionalist	37 (0.9)	20 (0.7)	57 (0.8)		
No religion	83 (2.0)	42 (1.5)	125 (1.8)		
Type of residence					
Rural	1590(39.0)	1024 (36.3)	2614 (37.9)	5.3242	0.02
Urban	2484(61.0)	1798 (63.7)	4282 (62.1)		
Current in union					
Married	888 (21.8)	812 (28.8)	1700 (24.7)		
Cohabiting	1497 (36.8)	986 (34.9)	2483 (36.0)	45.7656	<0.001
Single	1689 (41.5)	1024 (36.3)	2713 (39.3)		
Parity					
1	956 (23.5)	521 (18.5)	1477 (21.4)	94.6401	<0.001
2	843 (20.7)	537 (19.0)	1380 (20.0)		
3	754 (18.5)	391 (13.9)	1145 (16.6)		
4	504 (12.4)	466 (16.5)	970 (14.1)		
5	337 (8.3)	301 (10.7)	638 (9.3)		
6 and above	680 (16.7)	606 (21.5)	1286 (18.7)		
Ever attended school					
Yes	3596 (88.3)	2457 (87.1)	6053 (87.8)	2.2417	0.13
No	478 (11.7)	365 (12.9)	843 (12.2)		
Education level					
Primary	744 (20.7)	416 (16.9)	1160 (19.2)		
Middle	58 (1.6)	56 (2.3)	114 (1.9)		
JSS/JHS	1896 (52.7)	1092 (44.4)	2988 (49.4)	155.5583	<0.001
Secondary	60 (1.7)	67 (2.7)	127 (2.1)		
Sss/Shs/Tec	714 (19.9)	579 (23.6)	1293 (21.4)		
Higher	124 (3.5)	247 (10.1)	371 (6.1)		
Wealth index					
Lowest	380 (9.3)	307 (10.9)	687 (10.0)		
Second	857 (21.0)	402 (14.3)	1259 (18.3)		
Middle	1048 (25.7)	585 (20.7)	1633 (23.7)	124.7575	<0.001
Fourth	1154 (28.3)	858 (30.4)	2012 (29.2)		
Highest	635 (15.6)	670 (23.7)	1305 (18.9)		
Total	**4074 (100%)**	**2822 (100%)**	**6896 (100%)**		

Significant at P< 0.05

Table 1 shows over quarter of the women (29.0%) were in age group of 20-24 years while (1.8%) of the women were in age group of 45-49 years. Many of the respondents (18.7%) were from Ashanti region while (2.8%) of the respondents were from Upper East region (χ^2 (9)=136.7583, p<0.001). Christians made up (86.4%) percent of the women while traditionalist made up only (0.8%) percent of the women (χ^2 (8) = 60.6604, p< 0.001)

Table 1 shows majority (62.1%) of the women were living in urban areas by the time of this study while (37.9%) of the women were living in rural areas (χ^2 (1) = 5.3242 , p= 0.02). Many (39.3%) of the women were single while small number of the women (24.7%) were married (χ^2 (2) = 45.7656, p<0.001). Women with history of one parity constituted (21.4%) percent of the respondents while (9.2%) of the women with history of five parities constituted small percent of the respondents (χ^2 (5) = 94.6401, p<0.001)

Out of the total population 6,896 women who had induced abortion, majority (87.8%) of them had ever attended school by time of this study, (12.2%) had never attended school before by the time of this study which had no association with induced abortion while by highest educational level attained, almost half (49.4%) of the women had attained junior secondary school/junior high school certificate and small percentage (1.9%) of the women had attained middle grade certificate. Highest level of education attained had significant association with induced abortion (χ^2 (5) = 155.5533, p<0.001). Categorizing women by wealth index quintile, many of the respondents (29.2%) belonged to fourth wealth index quintile while only (10.0%) of the respondents belonged to the lowest wealth index quintile (χ^2 (4) = 124.7575, p<0.001)

4.2 Proximate determinants of induced abortion

Table 2: Some proximate determinants by type of induced abortion

Variables	Type of induced Abortion Safe (n=4076) (%)	 Unsafe (n=2822) (%)	Total (N=6896) (%)	χ^2	P-Value
Previous abortions since 2012					
1	3415 (83.8)	2322 (82.3)	5737 (83.2)		
2	555 (13.6)	423 (15.0)	978 (14.2)		
3	81 (2.0)	58 (2.1)	139 (2.0)	13.0262	0.02
4 and above	23 (0.6)	19 (0.7)	42 (0.6)		
First action to end pregnancy					
Drank milk/coffee/alcohol/other liquid			107 (10.8)		
Drank herbal concoction			104 (10.5)		
Drank other home remedies			20 (2.0)		
Used any herbal enema			58 (5.8)		
Inserted herb/object/other substance into vagina			37 (3.7)		
Tablet (Exact kind unknown			200 (20.1)		
Cytotec tablet (Misoprostol)			241 (24.3)		
Mifepristone+Misoprostol (Medabon etc)			147 (14.8)	91.4359	<0.001
D&C, D&E			48 (4.8)		
Vacuum aspiration			5 (0.5)		
Catheter			9 (0.9)		
Other Injection			17 (1.7)		
First place to end pregnancy					
Public health facility	491 (100)	416 (82.9)	907 (91.3)		
Private health facility	0 (0.0)	40 (8.0)	40 (4.0)	92.0912	<0.001
Out of health facility	0 (0.0)	46 (9.2)	46 (4.6)		
First Provider to end pregnancy					
Doctor			65 (6.6)		
Nurses/midwife			25 (2.5)		
Pharmacist/chemical/drug seller			401 (40.4)		
Relative/friend			269 (27.1)	104.1928	<0.001
Traditional practitioner			30 (3.0)		
No one			177 (17.8)		
Other (Quack doctors)			26 (2.6)		

Year of induced abortion					
2012	511 (12.5)	501 (17.8)	1012 (14.7)		
2013	601 (14.8)	413 (14.6)	1014 (14.7)		
2014	671 (16.5)	492 (17.4)	1163 (16.9)	60.7716	<0.001
2015	907 (22.3)	507 (18.0)	1414 (20.5)		
2016	818 (20.1)	604 (21.4)	1422 (20.6)		
2017	566 (13.9)	305 (10.8)	871 (12.6)		
Age at first sexual intercourse					
7-11	23 (0.6)	44 (1.6)	67 (1.0)		
12-16	1966 (48.3)	1228 (43.5)	3194 (46.3)		
17-21	1921 (47.2)	1357 (48.1)	3278 (47.5)	51.4990	<0.001
22-26	159 (3.9)	184 (6.5)	343 (5.0)		
27-31	5 (0.1)	9 (0.3)	14 (0.2)		
Living together with the partner (Married and cohabiting women only)					
Living with partner	1632 (68.4)	1173(65.2)	2805 (67.1)	4.7180	0.03
Not living with partner	753 (31.6)	625(34.8)	1378 (32.9)		
Attitude of partner towards having abortion					
Favored	2101 (51.6)	1586 (56.2)	3687 (53.5)		
Oppose	694 (17.0)	449 (15.9)	1143 (16.6)		
Neutral	368 (9.0)	280 (1.0)	648 (9.4)	29.2373	<0.001
He did not know	874 (21.5)	497 (17.6)	1371 (19.9)		
Don't know/don't remember	37 (0.9)	10 (0.4)	47 (0.7)		
Health problems six month after induced abortion					
Health problem	137 (3.4)	132(4.7)	269 (3.9)		
No health problem	3498 (85.9)	2477(87.8)	5975 (86.6)	28.0204	<0.001
Not yet six months	437 (10.7)	210(7.4)	647 (9.3)		
Do not know	2 (0.1)	3(0.1)	5 (0.1)		
Received treatment for health problems six month after induced abortion					
Treatment received	334(40.1)	304(40.0)	638 (40.5)	0.1245	0.72
No treatment received	499(59.9)	438(60.0)	937 (59.5)		
Types of treatment received					
Antibiotic	149 (3.7)	204 (7.2)	353 (55.3)		
Antibiotics/others	25 (0.6)	11 (0.4)	36 (5.6)		
Operation	13 (0.3)	8 (0.3)	21 (3.3)		
Operation/Antibiotics	0 (0.0)	2 (0.1)	2 (0.3)	81.1968	<0.001
Operation/antibiotics/blood transfusion	0 (0.0)	3 (0.1)	3 (0.5)		
Blood transfusion	0 (0.0)	4 (0.1)	4 (0.6)		
Blood transfusion/antibiotics	8 (0.2)	19 (0.7)	27 (4.2)		
Others	139 (3.4)	53 (1.9)	192 (30.1)		
Place for the treatment received					
Public health facility	112 (2.8)	118 (4.2)	230 (36.1)		

Private Health facility	18 (0.4)	122 (4.3)	140 (21.9)	167.3789	<0.001
Out of the health facility	204 (5.0)	64 (2.3)	268 (42.0)		
Visited at her home by the health workers after the abortion					
Visited	120 (3.0)	192 (6.8)	312 (4.5)	57.4507	<0.001
Not visited	3954 (97.0)	2630 (93.2)	6584 (95.5)		
Was counselled on contraceptive before or after induced abortion					
Counselled	1019 (14.3)	1406 (32.9)	2425 (35.2)	450.1234	<0.001
Not counselled	3055 (85.7)	1416 (67.1)	4471 (64.8)		
Time of counselling for the contraceptive					
Before abortion	445 (43.7)	282(20.1)	727(30.0)		
After the abortion	414 (40.6)	818(58.2)	1232(50.8)	157.0074	<0.001
Before and after abortion	160 (15.7)	306(21.8)	466(19.2)		
Contraceptives used by time became pregnant					
Used	740 (18.2)	605 (21.4)	1345 (19.5)	11.3876	0.001
Not used	3334 (81.8)	2217 (78.6)	5551 (80.5)		
Type of contraceptive being used by time became pregnant					
Pills	305 (41.2)	243 (40.2)	548 (40.7)		
Injectables	121 (16.4)	115 (19.0)	236 (17.6)		
IUD	0 (0.0)	7 (1.2)	7 (0.5)		
Implants	11 (1.5)	24 (4.0)	35 (2.6)		
Condoms	59 (8.0)	22 (3.6)	81 (6.0)	44.3464	<0.001
Diaphragm	3 (0.4)	4 (0.7)	7 (0.52)		
Rhythm	100 (12.9)	78 (13.9)	178 (13.2)		
Withdrawal	26 (3.5)	39 (6.5)	65 (4.8)		
Foam/Jelly	3 (0.4)	9 (1.5)	12 (0.9)		
Others	112 (15.1)	64 (10.6)	179 (13.1)		

Significant at p< 0.05

Proximate determinates: These are behavioral factors through which the socio economic and environmental factors operated to influence the rate of induced abortion

Majority of the women (83.2%) said they had carried out induced abortion before and it was only once while small proportion of the women (0.6%) reported to have carried out induced abortion four and more times (χ^2 (3) = 13.0262, p= 0.02)

Table 2 shows that women took many different actions at first stage to end unwanted pregnancies. Cumulatively, 92.0% induced abortions were initiated in environment that do not meet minimum

medical standards for sterile procedure (Unsafe environment) while 8.0% were initiated in environment that meet minimum medical standards -safe environment (χ^2 (10) = 91.4359, p<0.001)

Among the women who initiated induced abortion in unsafe environment, majority of them 91.3% said they went to public health facilities as the first place to end the pregnancy while second largest number of the women 4.6% said they went to different places like homes of relatives/friends, pharmacists/chemists/drug store sellers, TBAs, quack doctors other than health facility. Consequently, at last stage of induced abortion, 95.4% of the respondents reported to have gone to health facility (Both public and private health facilities) because they considered it to the best place to end unwanted pregnancies while 4.6% of the respondents continued with induced abortion in other unhygienic places (χ^2 (2) =92.0912, p<0.001)

Pharmacists/drug sellers, (40.4%) were the first providers to end unwanted pregnancies while small number (2.5%) of first providers to end unwanted pregnancies were nurse/midwifes. Due to sensitivity, social stigma, secrecy and restrictive law on abortion, many women likewise went to their relatives/friend and other providers like TBAs, traditional practitioners for concealed abortion in order to destroy evidences of induced abortion (χ^2 (6) =104.1928, P<0.001)

Majority, (59.1%) of the respondents had successful safe induced abortion at health facilities which was the last place to end pregnancy while (40.9%) of the respondents continued with the induced abortion out of health facility for example in their own homes, home of TBAs or traditional practitioners, pharmacist/chemists/drug store sellers which is unsafe environment

Many (35.4%) of the last providers to end the unwanted pregnancies were the medical doctors while the second greater (30.3%) percent of the last providers to end the unwanted pregnancies were pharmacists/chemists/drugstore sellers

Greater number of the induced abortions (20.6%) were carried out in the year 2016 while few numbers of induced abortions (2.6%) were carried out in the year 2017. The rates of induced abortion started to rise in 2012 then peaked in 2016 and thereafter dropped (χ^2 (5) = 60.7716, p<0.001)

Many of the respondents (47.5%) had their first sexual intercourse at age bracket of 17-21 years while none of them had their first sexual intercourse at age brackets of 32-36 years, 37-41 years, 42-46years and 47-51 years accordingly (χ^2 (4)=51.4990, p<0.001)

Table 2 shows overall (53.5%) of the respondent's partners favored induced abortion upon getting unwanted pregnancies while Second greater (19.9%) percentage of the respondent's partners did not know whether the respondents had carried out induce abortion (χ^2 (4) = 29.2373, p<0.001)

Total of 970 women reported to have had experienced health problem one month after the induced abortion and among this, majority (79.1%) of them reported pain as major health problem while small percentage (3.8 %) of the women reported injuries as health problems experienced one month after the induced abortion. Other health problems reported one month after the induced abortion were bleeding, fever and bad vaginal discharge accordingly. While, six months after the induced abortion, 269 of the women reported health problems and among this, many of them (33.8%) reported abdominal pain and small number of the women (2.2%) reported lack of periods. Other health problems reported were irregular periods, more painful periods, infection and sterility.

Most of these health problems occurred concurrently or in combinations. The late health problems due to induced abortion was significant with induced abortion (χ^2 (3) = 28.0204, p<0.001)

Among the respondents who experienced health problems six months after the induced abortion, majority (55.3%) of them received Antibiotics treatment for the health problems while small percentage (0.6%) of the respondents received blood transfusion. Other treatment received were operations and other treatment like painkillers, folic acid. These treatments were given in different combinations depending on the prevailing health problems of the respondents (χ^2 (7) = 81.1968, p<0.001)

Among respondents who experienced health problems after six months and received treatment, majority of them (58%) received their treatment from health facility while (42%) of them received treatment from non-recommended health facilities like pharmacies/drug stores (χ^2 (2) =167.3789, p< 0.001)

Majority, (54.7%) of the women paid by themselves at the first place to end the pregnancy, only one woman (0.1%) paid by herself with help of her friend at the first place to end the unwanted pregnancy while at the last place to end the pregnancy, nearly half of the respondents (48.8%) said their partners paid to end the unwanted pregnancy and only one respondent (0.02%) said the payment was made by contributions of her partner, mother and the father accordingly

The study found majority of the women (95.5%) were not visited at their various homes by health workers after the induced abortion while the remaining percentage of the women (4.5%) were visited at their various homes by health workers after the induced abortion (χ^2 (1)= 57.4507, p< 0.001)

Most of the respondents (64.8%) were not counselled on contraceptive by health workers before or after the induced abortion while remaining (35.2%) percent of the respondents were counselled on contraceptive by health workers before or after the induced abortion (χ^2 (1) =450.1234, p<0.001)

Higher proportions of the respondents (80.5%) were not using contraceptives by the time they became pregnant while remaining percentage (19.5%) of the respondents were using contraceptives by the time they became pregnant (χ^2 (1) =11.3876, p=0.001)

Many of the women (40.7%) said they were using oral pills by time they became pregnant. This was followed by the second bigger number of the women (17.6%) who said they were using injectables by time they became pregnant. Contraceptive failure was significant with induced abortion (χ^2 (9) = 44.3464, p<0.001)

When the women were asked during the maternal health survey why they carried out induced abortion, majority of the women (54.8%) mentioned proximate reasons as the main reasons while the smaller number of the women (2,02%) mentioned distal reasons for having carried out induced abortion. The proximate and distal reasons are defined in "Page 31" of this study

4.3 Distal determinants

Table 3: Selected distal determinants and their relationship with type of induced abortion

Variables	Type of induced Abortion n (%) Safe	Abortion n (%) Unsafe	N (%)	χ^2	P-Value
Married/cohabited					
Married	154 (9.1)	120 (11.7)	274 (10.1)		
Cohabited	274 (16.2)	178 (17.4)	452 (16.7)	6.0164	0.05
Single	1261(74.7)	726 (70.9)	1987 (73.2)		

Age at first union					
9-14	288 (10.2)	197 (9.4)	485 (9.9)		
15-19	1242 (44.2)	852 (40.7)	2094 (42.7)		
20-24	891 (31.7)	660 (31.5)	1551 (31.6)	28.4825	<0.001
25-29	309 (11.0)	270 (12.9)	579 (11.8)		
30-34	69 (2.5)	99 (4.7)	168 (3.4)		
35-39	14 (0.5)	18 (0.9)	32 (0.7)		
Awareness on abortion law					
Yes	287 (7.0)	460 (16.3)	747 (10.8)		
No	3270 (80.3)	2021 (71.6)	5271 (76.7)	148.6006	<0.001
Do not know	517 (12.7)	341 (12.1)	858 (12.4)		
Total	**4074 (100%)**	**2822 (100%)**	**6896 (100%)**		

Significant at P-value <n0.05

Distal determinants: Are national, institutional, political, legal, societal, religious and cultural factors that influence induced abortion by acting on the more proximate factors. Distal determinants are usually more stable than proximate determinants

Table 3 shows most of the (73.2%) of the respondents were single by the time of study while (10.1%) of the respondents had married before by the time of study. Previous marital status was significant with induced abortion (χ^2 (2) = 6.0164, p= 0.05). Many of the respondents (42.7%) had their age at first marital union at 15-19 years while only (0.7%) percent of the respondents had their age at first marital union at 35-39 years. Marriage at early age was significant with induced abortion (χ^2 (5) = 28.48.25, p<0.001)

When asked if abortion is legal in Ghana, majority of the women (76.7%) said abortion is illegal in Ghana while the second highest number of the women (12.4%) said they did not know if abortion is legal in Ghana. Awareness on abortion law was significant with induced abortion (χ^2 (2)=148.6006, p<0.001). Even though higher proportion of women 76.7% said abortion is illegal in Ghana, but when asked under what conditions abortion can legal be carried out in Ghana, majority of the women (93.2%) mentioned maternal health conditions while second highest number of the respondents (3.3%) mentioned proximate conditions under which abortion can legal

be carried out in Ghana. The maternal factors and proximate factors are defined in “Page 31” of this study

4.3.1 Summary of the findings

The year 2012 to 2017 progressively registered increased percentage of safe abortion. Public health facility (54.1%) provided most of the safe abortion services compare to private health facility. Women who were staying with their partners, got unwanted pregnancy at age group of 12-16 years while their partners not knowing, accessed most of the safe abortion services compared to their counterparts. Women who were not using contraceptive by time they became pregnant neither counselled on contraceptive before/after induced abortion and nor visited by health workers at their homes after the induced abortion accessed more safe abortion services compared to their counterparts. Women who were using condoms by time they became pregnant accessed more safe abortion services than their counterparts. All abortions initiated at private health facility were unsafe abortion likewise all abortions first initiated by medical doctors were unsafe abortion. The common method 23% of initiating induced abortion in unsafe environment was by shallowing unnamed tablets and closely followed by shallowing tablets of misoprostol (21.4%).

Women who had not married (Single women) accessed most of the safe abortion services compare to their counterparts. Women aged 20-24 years or in polygamous marriage with four or more cowives and lacked knowledge on safe, legal abortion accessed most of the safe abortion services compare to their counter parts

4.4.1 Multivariate analysis

A simple logistic regression is appropriate when the outcome/ dependent variable is dichotomous. Multiple logistic regression applies when there is a single dichotomous outcome and more than

one independent variables. Therefore, multiple logistic regression analysis was done to measure the strength of association between the dependent and independent variables

Table 4: Crude and Adjusted Odds Ratio of induced abortion and selected variables

Variables	Crude/Unadjusted Odds ratio (95% CI)	P-Value	Adjusted Odds ratio (95% CI)	P-Value
Age group				
15-19(Ref)	1		1	
20-24	0.98 (0.81-1.19)	0.859	1.22 (0.99-1.50)	0.064
25-29	0.59 (0.48-0.71)	<0.001	0.73 (0.59-0.91)	0.005
30-34	0.56 (0.46-0.69)	<0.001	0.65 (0.51-0.84)	0.001
35-39	0.46 (0.37-0.57)	<0.001	0.46 (0.35-0.60)	<0.001
40-44	0.44 (0.34-0.57)	<0.001	0.56 (0.40-0.78)	0.001
45-49	0.21 (0.14-0.32)	<0.001	0.31 (0.17-0.55)	<0.001
Region				
Western region (Ref)	1		1	
Ashanti	1.22 (1.03-1.44)	0.023	1.40 (1.16-1.68)	<0.001
Greater Accra	0.78 (0.66-0.93)	0.006	0.94 (0.77-0.14)	0.523
Volta region	0.54 (0.43-0.67)	<0.001	0.57 (0.45-0.73)	<0.001
Eastern region	0.67 (0.55-0.82)	<0.001	0.67 (0.54-0.83)	<0.001
Central region	1.29 (1.05-1.59)	0.017	1.32 (1.05-1.67)	0.016
Brong Ahafo region	0.89 (0.75-1.07)	0.225	0.82 (0.67-1.00)	0.045
Northern region	0.49 (0.38-0.64)	<0.001	0.29 (0.21-0.40)	<0.001
Upper West region	0.68 (0.52-0.86)	0.001	0.53 (0.39-0.73)	<0.001
Upper East	0.61 (0.45-0.82)	0.002	0.48 (0.33-0.70)	<0.001
Residence				
Urban (Ref)	1		1	
Rural	1.12 (1.02-1.24)	0.021	0.99 (0.87-1.12)	0.830
Parity				
1(Ref)	1		1	
2	0.86 (0.78-1.00)	0.044	0.82 (0.70-0.96)	0.014
3	1.05 (0.89-1.24)	0.548	0.85 (0.72-1.02)	0.076
4	0.59 (0.50-0.70)	<0.001	0.46 (0.38-0.55)	<0.001
5	0.61 (0.51-0.74)	<0.001	0.59 (0.47-0.73)	<0.001

6 and above	0.61 (0.52-0.71)	<0.001	0.50 (0.41-0.59)	<0.001
Highest educational level				
Primary (Ref)	1		1	
Middles	0.58 (0.39-0.85)	0.006	0.62 (0.21-1.83)	0.384
JHS/JSS	0.97 (0.84-1.12)	0.681	0.37 (0.24-0.59)	<0.001
Secondary/Tec/Voc	0.50 (0.35-0.72)	<0.001	0.54 (0.16-0.18)	0.326
Sss / Shs /Tec/Voc	0.69 (0.59-0.81)	<0.001	0.37 (0.20-0.69)	0.002
Wealth categorization				
Lowest (Ref)	1		1	
Second	1.72 (1.42-2.09)	<0.001	2.81 (1.23-6.45)	0.014
Middles	1.45 (1.21-1.73)	<0.001	1.59 (0.68-3.73)	0.283
Fourth	1.09 (0.91-1.29)	0.351	1.57 (0.66-3.72)	0.307
Highest	0.77 (0.64-0.92)	0.005	1.74 (0.70-4.34)	0.233
Year of recent induced abortion				
2012(Ref)	1		1	
2013	1.43 (1.20-1.70)	<0.001	0.10 (0.05-0.21)	<0.001
2014	1.34 (1.13-1.58)	0.001	0.36 (0.17-0.76)	0.008
2015	1.75 (1.49-2.07)	<0.001	0.25 (0.12-0.49)	<0.001
2016	1.33 (1.13-1.56)	0.001	0.30 (0.15-0.62)	0.001
2017	1.82 (1.51-2.19)	<0.001	0.29 (0.14-0.61)	0.001
Attitude of the partner towards having Induced abortion				
Favored (Ref)	1		1	
Opposed	1.17 (1.02-1.34)	0.026	1.71 (1.00-2.93)	0.049
Neutral	0.99 (0.84-1.17)	0.927	1.13 (1.12-4.04)	0.021
He did not know	1.33 (1.17-1.51)	<0.001	1.04 (0.70-1.53)	0.860
Was counselled on contraceptive by health worker after induced abortion				
Yes (**Ref)**	1		1	
Not counselled	2.98 (2.69-3.30)	<0.001	2.87 (2.02-4.09)	<0.001
Contraceptive used by time became pregnant				
Yes (Ref)	1		1	
Not used	1.23 (1.09-1.39)	0.001	4.08 (2.47-6.75)	<0.001
Abortion legal in Ghana				
Yes (Ref)	1		1	
Not illegal	2.59 (2.22-3.04)	<0.001	2.38 (2.00-2.83)	<0.001
Do not know	2.43 (1.99-2.98)	<0.001	2.12 (1.70-2.64)	<0.001

Significant at P-value < 0.05

Following proximate variables were dropped due to their small sample sizes in multivariate analysis

- **First action to end pregnancy p<0.001, First place to end pregnancy P<0.001, First provider to** end pregnancy p<0.001, Type of contraceptive used when became pregnant p<0.001

Following distal variables were dropped due to their small sample sizes in multivariate analysis

- **Currently in union p=0.05, Have cowives p<0.001, Number of cowives available p<0.05, Age at first union p<0.001**

Table 4 shows unadjusted odds ratios, women of age group of 25-29 years had 41% decreased odds of obtaining safe abortion compared to 15-19 years of age group while women of 30-34 years age group had 44% decreased odds of obtaining safe abortion, 35-39 years had 54% decreased odds of safe abortion, 40-44 years had 56% decreased odds of safe abortion and 45-49 years had 79% decreased odds of obtaining safe abortion compared to women of age group 15-19 years. Adjusted odds ratios showed that women of age group 25-29 years had 27% decreased odds of obtaining safe abortion compared to women of age group 15-19 years while women of age group 30-34 years had 35% decreased odds of obtaining safe abortion, 35-39 years had 54% decreased odds of safe abortion,40-44 years had 44% decreased odds of safe abortion and women of age group 45-49 years had 69% decreased odds of obtaining safe abortion compared to women of age group 15-19 years. Therefore, young women were found to be getting most of the safe abortion services compared to the old aged women. The rates of getting safe abortion reduced with increasing age among women

Unadjusted odds ratios showed Ashanti region had 22% increased odds of obtaining safe abortion compared to Western region while Greater Accra had 22% decreased odds of obtaining safe abortion, Volta region had 46% decreased odds of safe abortion, Eastern region had 33% decreased odds of safe abortion, Central region had 29% increased odds of safe abortion, Northern region had 51% decreased odds of safe abortion, Upper West region had 32% decreased odds of safe abortion and Upper East had 39% decreased odds of obtaining safe abortion compared to Western region. Adjusted odds ratios indicated that Ashanti region had 40% increased odds of obtaining safe abortion compared to Western region while Volta region had 43% decreased odds of obtaining safe abortion, Eastern region had 33% decrease odds of safe abortion, Central region had 32% increase odds of safe abortion, Northern region had 71% decreased odds of safe abortion,

Upper West had 47% decreased odds of safe abortion, Brong Ahafo region had 18% decreased odds of safe abortion and Upper East had 52% decreased odds of obtaining safe abortion compared to Western region. Generally, women who were living in Ashanti region obtained 40% more safe abortion services than women who were living in other regions in referenced to Western region. Which was closely followed by women in Central region who obtained 32% more safe abortion services than other remaining regions in referenced to Western region

Unadjusted odds ratios showed that rural areas had 12% increased odds of obtaining safe abortion compared to urban areas

Unadjusted odds ratios indicated that women with history of two parities had 14% decreased odds of obtaining safe induced abortion compared to women with history of one parity while women with history of four parities had 41% decreased odds of obtaining safe induced abortion, women with history of five parities had 39% decreased odds of obtaining safe induced abortion likewise women with history of six and more parities had 39% decreased odds of obtaining safe induced abortion compared to women with history of one parity. Adjusted odds ratios indicated that women with history of two parities had 18% decreased odds of obtaining safe induced abortion compared to women with history of one parity while women with history of four parities had 54% decreased odds of obtaining safe induced abortion, women with history of five parities had 41% decreased odds of obtaining safe induced abortion and women with history of six and more parities had 50% decreased odds of obtaining safe induced abortion compared to women with one history of parity. Therefore, rates of obtaining safe abortion among women was higher among women with increased number of parities

Unadjusted odds ratios indicated that middle certificate holders had 42% decreased odds of obtaining safe abortion compared to primary certificate holders while secondary /Technical/

Vocational certificate holders had 50% decreased odds of obtaining safe abortion and secondary high school/ Technical/Vocational certificate holders had 31% decreased odds of obtaining safe abortion compared to primary certificate holders. Adjusted odds ratios indicated that Junior high school/ Junior secondary school certificate holders had 63% decreased odds of obtaining safe abortion compared to primary certificate likewise senior secondary school/Secondary high school /Technical/Vocational had 63% decreased odds of obtaining safe abortion compared to primary certificate holders. However, middle and secondary/Technical/Vocational certificate holders though significant but had no association with type of induced abortion

Unadjusted odds ratios indicated that second wealth index quintile category had 72% increased odds of obtaining safe abortion compared to lowest wealth index quintile category while middles wealth index quintile category had 55% decrease odds of obtaining safe abortion and highest wealth index quintile category had 23% decreased odds of obtaining safe abortion compared to lowest wealth index quintile category. Adjusted odds ratios indicated that second wealth index quintile category had 2.8 times increased odds of obtaining safe abortion compared to lowest wealth index quintile category. Though, middle wealth index quintile, fourth wealth index quintile and highest wealth index quintile categories were significant but had no association with type of induced abortion. Generally, more economically rich women obtained more safe abortion services than the poor women

Unadjusted odds ratios indicated that the year 2013 had 43% increase odds of safe abortion proportions compared to the year 2012 while the year 2014 had 34% increased odds of safe abortion proportions compared to 2012, the year 2015 had 75% increased odds of safe abortion, the year 2016 had 33% increased odds of safe abortion and the year 2017 had 82% increased odds of safe abortion proportions compared to the year 2012. Adjusted odds ratios indicated that the

year 2013 had 90% decreased odds of safe abortion proportions while the 2014 had 64% decreased odds of safe abortion proportions, the year 2015 had 75% decreased odds of safe abortion, the year 2016 had 70% decreased odds of safe abortion and the year 2017 had 71% decreased odds of safe abortion proportions compared to the year 2012. In summary, women were progressively accessing safe abortion though with small fraction of increase from 2013 to 2017

Unadjusted odds ratios indicated that respondents whose partners opposed induced abortion had 17% increased odds of obtaining safe abortion compared to the respondents whose partners favored induced abortion while respondents whose partners did not know whether the respondents carried out induced abortion had 33% increased odds of obtaining safe abortion compared to respondents whose partners favored induced abortion. Adjusted odds ratios indicated that respondents whose partners opposed induced abortion had 71% increase odds of obtaining safe abortion compared to respondents whose partners favored induced abortion while respondents whose partners were neutral towards having induced abortion had 13% increased odds of obtaining safe abortion and respondents whose partners did not know whether the respondents carried out induced abortion had 4% increased odds of obtaining safe abortion compared to respondents whose partner favored induced abortion . Though respondents whose partners did not know whether the respondents carried out induced abortion was significant but had no association with type of induced abortion. In summary, women whose partners opposed induced abortion had obtained 71% more safe abortion services than the women whose partners favored, or whose partners were neutral or those who did not know whether their wives carried out induced abortion

Unadjusted odds ratios showed that women who were not counselled on contraceptive before or after the induced abortion had 3.0 times increased odds of obtaining safe abortion compared to the women who were counselled on contraceptive before or after induced abortion. Adjusted odds

ratios showed that women who were not counselled on contraceptive before or after induced abortion had 2.9 times increased odds of obtaining safe abortion compared to women who were counselled on contraceptive before or after the induced abortion. Hence, women who were not counselled on contraceptive before or after induced abortion had always 2.9 times accessed most of the safe abortion services compared to women who were counselled on contraceptive before or after the induced abortion

Unadjusted odds ratios showed that women who were not using contraceptive by time they became pregnant had 23% increased odds of obtaining safe abortion compared to women who were using contraceptive by time they became pregnant while adjusted odds analysis showed that women who were not using contraceptive had 4.1 times increased odds of obtaining safe abortion compared to women who were using contraceptive by time became pregnant. Therefore, women who were not using contraceptive by time they became pregnant had always 4.1 times accessed most of the safe abortion services compared to women who were using contraceptive by time they became pregnant

Unadjusted odds ratios indicated that women who said abortion illegal in Ghana had 2.6 times increased odds of obtaining safe abortion compared to women who said abortion is legal in Ghana while women who did not know whether abortion is legal in Ghana had 2.4 times increased odds of obtaining safe abortion compared to women who said abortion is legal in Ghana. Adjusted odds ratios indicated that women who said abortion is illegal in Ghana had 2.4 times increased odds of obtaining safe abortion compared to women who said abortion is legal in Ghana while women who did not know abortion whether abortion is legal in Ghana had 2.1 times increased odds of obtaining safe abortion. It was found that women who believed abortion is illegal in Ghana or have no knowledge on abortion law had always 2.1 times accessed safe abortion services compared to women who were knowledgeable on abortion law

The following variables though were significant but had no associations with type of induced abortion. They were :- Last providers to end pregnancy, visiting women at their homes by health workers after the induced abortion, types of contraceptive used when became pregnant except implants, withdrawal and Rhythms, types of contraceptive services offered by health workers after the induced abortion, married or cohabited before and age at first marital union

4.4.1 Summary of the findings

Young women aged 20-24 years obtained more safe abortions than the old women. The rates of safe abortion reduced with increasing age among the women. Women in Ashanti region accessed most of safe abortions services by 40% compared to women living in other regions. Women who were educated, living in urban areas, economically rich with three or more history of parities obtained most of the safe abortion services compared to their counterparts.

Nurses/midwives only provided 5% of safe abortion services from 2012 to 2017. The Millennium Development Goals and Reducing Maternal Morbidity and Mortality program's post and aftermath impacts from 2012 to 2017 significant influenced uptake of safe abortion among the women. Women who were living together with their sexual partners, got unwanted pregnancy and partners opposed to induced abortion significantly obtained safe abortion services. Women who were not counselled on contraceptive before/after induced abortion nor using contraceptive by time they became pregnant had significantly obtained safe induced abortion services.

Women in monogamous marriage had significantly obtained safe abortion services. And women with improper knowledge on safe, legal abortion services had also significantly obtained safe abortion compared to their counterparts

CHAPTER FIVE: DISCUSSION

5.0 Introduction

Abortion is emotive, safe or unsafe, legal or illegal, a woman with unwanted pregnancy will find a provider for abortion or self-induced it. The rate at which women seek abortion in developed countries like United States with liberalized abortion law and in countries like Ghana, Uganda, Kenya with restrictive abortion law is similar which otherwise is contrary to the common belief that legalizing abortion will increase abortion rates (Sundaram et al., 2012).

5.1 Demographic characteristics

Women of age group 20-24 years old constituted the highest number of the women who had induced abortion while few of the women were in age group 45-49 years old constituted small number of the women who had carried out induced abortion from 2012 to 2017. Induced abortion rates spread across all age group categories which started to rise from 15-19 then peak at 20-24 years and thereafter continue to drop. The study of Chae et al., (2017) in five African countries of Ghana, Nigeria, Gabon, Congo Republic and Ethiopia reported that women aged 20–29 years accounted for more than half of the recorded cases of induced abortions in African countries. Related study also conducted on abortion patients in USA by Jones, Rachel and Jerman (2017), reported that the largest proportion 60% of induced abortion patients were women in their 20s. However, contrary to the study finding, Souza et al., (2014) study in the city of Sao Paulo reported that greater proportion 35.5% of women who had induced abortions aged 40-45years. This difference could be as result of the young aged women in Ghana having higher unmet need for contraception to space their births compare to old aged women in Sao Paulo city who have unmet need for contraception to limit their fertility which eventually results into unwanted pregnancy that leads to induced abortion

All the ten regions registered cases of induced abortion. However, out of the total population 6896 of women, the smallest number 195 of induced abortion among women were recorded from Upper East region while Ashanti region recorded the biggest number 1290 of induced abortions among women from 2012 to 2017. This finding shows positive outcomes of Reducing Maternal Morbidity and Mortality- R3M program which was launched in 2006 in the regions of Ashanti, Greater Accra and Eastern accordingly (Sundaram, Juarez, Ahiadeke, Bankole, & Blades, 2015)

The Christians made up the highest proportion of respondents while traditionalist made up smallest proportions of respondents of induced abortion. This study found strong relation between religion and induced abortion (χ^2 (8) =60.6604, P<0.001). However, there is no significant difference between the different religions especially different Christians denominational groups and induced abortion

The study revealed majority of the respondents were living in urban areas while few of them were living in rural areas. Area of residence of the respondents was a significant determinant of induced abortion (χ^2 (1) =5.3242, p=0.02). Study of Chae et al., (2017) reported that urban women in Africa registered higher percentage 60%-89% of induced abortions compare to rural women. Similarly, in the same study they reported that urban women in Asian countries had as higher as 78% proportions of induced abortion while Haiti and Mexico City with 69% cases of induced abortion registered in Central American and Caribbean countries. This is in line with this study finding. Worldwide, many people are now living in urban areas and the percentage is expected to increase in the next ten years with a quarter or half of the world population will live in urban areas. The urbanization brings change in social status of women especially and subsequent change in their reproductive health decision making and control in fertility

The single women who were not married constituted highest number of the respondents while small number of respondents were married women. The finding is strongly supported by the study of Jones, Rachel and Jerman (2017) in USA, reported that the highest percentage 46% of induced abortion was among respondents who were never married. However, this finding is argued against by Chae et al., (2017) reported that countries like Ghana, Gabon, Congo Republic, Haiti, Ukraine, Moldova and Albania registered most of induced abortions among married women. Similarly, Souza et al., (2014) study conducted in Sao Paulo city also argued against the finding that the biggest proportion, 67.8% of induced abortions were registered among married and cohabiting women.

The proportion of respondents with history of one Parity formed the biggest population of women who had induced abortion while women with history of five parities formed the small proportions of women. This finding is in line with the study finding of Jones, Rachel and Jerman (2017), reported that majority 59% of the respondents who had induced abortions were among women with history of one birth. However, there is relatively slight difference or contradiction between this finding and study of Chae et al., (2017), reported that half (50%) of all induced abortions occurred among nulliparous women especially in African countries like Ghana and Nigeria. But, subsequently in the same study they agree with this study finding especially for Central America/Caribbean, Asian and European countries whereby in Central America Caribbean countries relatively higher proportions of induced abortion was among multiparous women by 38%, Asian countries induced abortion among multiparous women was 73-85%, and in Europe induced abortions were common among women with history one birth and multiparous

The study found no relationship between history of ever attended school or who have never attended school and unsafe abortion (χ^2 (1)=2.2417, p= 0.13). However, there is strong

association between high educational level attained and induced abortion (χ^2 (4) =155.5583, p<0.001). Majority of the respondents had ever attended school with many of the respondents (49.4%) being junior secondary school/junior high school certificate holders while the lowest proportions being higher grade certificate holders. The study finding is strongly supported by the study of Chae et al., (2017), reported that in African countries women with higher educational level registered high proportions 61%-82% of induced abortion compare to their counterpart. In Asian countries women with secondary education registered 22%-100% cases of induced abortion. Souza et al., (2014) also agree that women with higher school certificate accounted for higher 38.7% percentage of induced abortion in Sao Paulo City. The effect of globalization on health seeking behavior among women of Ghana and developing countries at large is on increase as evidenced in this study. The improved communication and information sharing especially through internet services has changed health seeking behavior positively especially among educated women

Many of the respondents belonged to fourth wealth index quintile category while the smaller number of the respondents belonged to the lowest wealth index quintile category. The finding is in much agreement with the study of Souza et al., (2014), reported that women who were in middle class economy reported more cases 80.6% of induced abortion compared to poor women. Chae et al., (2017) also reported that both in African and Asian countries women who are economically better reported to have had higher proportions of induced abortions compared to their counterpart who are economically poor. However, in the same study they reported that the trend was exceptionally different in Armenia and Azerbaijan where higher proportion of induced abortions were among poor women.

5.2 Proximate determinants

The study revealed that higher proportion of the respondents (80.5%) were not using contraceptives by the time they became pregnant while small proprotion of the respondents were using contraceptive methods by the time they became pregnant but, however, reported failure of the contraceptive methods like oral pills and injectables to protect them against unwanted pregnancy. This finding is in line and strongly supported by Tilahun, Dadi, & Shiferaw (2017); Alhassan, Abdul-Rahim, & Akaabre, (2016), reported that the common causes of unwanted pregnancies for people to seek induced abortion are inability to access, use or failure of the contraceptive methods to protect against unwanted pregnancy. Thus Pazol, Creanga, & Jamieson, (2015), pointed out that when women use modern contraceptives they are less likely to be exposed to unwanted pregnancy and subsequent induced abortion than women who are not using any contraceptive method. The study finding shows high unmet need for contraceptives among women of Ghana and clearly explains reports of GMHS 2017 that 20% women of reproductive age had ever induced abortions due to unwanted pregnancy

The highest proportion of the respondents had carried out induced abortion once while the remaining proportions of the respondents in cumulatively percentages had carried out induced abortion four and more times. This finding confirms the study of Gbagbo (2014), reported that the major influencing factor for induced abortion is history of previous induced abortion addition to other factors like non contraceptive use, being younger and unmarried respectively. Further still the study finding reaffirms that few women now use abortion as means of controlling fertility. This is due to increased demand creation by health care sector and adoption of modern contraceptive methods by women

The study found that majority of the women first initiated induced abortion in environment that do not meet minimum medical standards for sterile procedures regardless of the risks associated with the action while few of the women initiated induced abortion in environment that meet minimum set medical standards. The common home based practices or actions mentioned to end pregnancy were:- Taking of Cytotec tablet (Misoprostol) or combination of Mifepristone+ Misoprostol, taking unnamed/unspecified tablet, drinking of excessive milk/coffee/alcohol/other liquid like detergents, drinking of herbal concoction, use of herbal enema, insertion of herb/object/other substance into the vaginal, drinking home other remedies like grinded Ablototor leaves while health facility based practices were use of D&C D&E, Vacuum Aspiration, tablets of misoprostol, combination of misoprostol and mifepristone, catheter and injections like Oxytocin to end the pregnancy. It is a global practice by women whether in developed or developing countries to do anything to end unwanted pregnancy. The finding is in accordance with the study of Wangdi & Gurung, (2016); Pazol, Creanga, & Jamieson, (2015), in USA reported that some people in United States still procure unsafe induced abortions services due to unwanted pregnancy and where 1.2% of women had self-induced abortion by use of Misoprostol while 1.4% of them attempted to induce abortion by use of other substances like herbs, vitamin C tablets. In the same study they continued to report that the proportions of unsafe induced abortion in developing countries by use of other substances like herbs, local remedies, local concoctions to induce abortion is high. The high rate of induced abortion initiated in unsafe environment is of public health concern. The high rates of self-administered abortion pills among the women still reaffirms the effect of globalization on reproductive health services. Due to globalization, communication has become easy and fastest especially through internet where information can be accessed anytime, anywhere. Secondly, due

to improved transport networks, women can easily move to any far distant places to get abortion pills to terminate unwanted pregnancy

Many of the first providers to end unwanted pregnancy were pharmacists/chemists/ drug store sellers where tablets like Cytotec /Mifepristone are sold without restriction while the smallest number of the first providers to end unwanted pregnancy were nurses/midwifes. Because of the secrecy associated with induced abortion and trust the women have in their friends/relatives, some women went to their relatives/friends in order to end unwanted pregnancy. Further still due to fear of its repercussion and stigma, some of the respondents did not seek nor access service of induced abortion from anyone.

Encouragingly, majority (95.4%) of the respondents went to health facility as a last place to end the pregnancy after the failed initiated induced abortion in unsafe environment while few of them remained in the unhygienic environment or places where they had first initiated the induced abortion. The places are like the homes of friends/relatives, TBAs, quack doctors, pharmacies/drugstores.

Although, (95.4%) of the respondents went to health facility for safe induced abortion, only 59.1% of them received safe induced abortion services while 40.9% of the respondents ended up carrying out unsafe induced abortion. This is in line with the report of WHO, (2012) that forty-two million out of 210 million pregnancies each year are voluntarily aborted worldwide. Of these, 22 million occur within a formal health care system and 20 million outside of the health care system which poses a big challenge at individual, society and health sector levels especially in managing the complications associated with it. As the developing countries particularly Sub Saharan African countries are experiencing health transition, the continent is faced with double burden of

communicable and non-communicable diseases. In this transition particularly obstetric transition, many women reach the health facility but access to quality care at health facility is the main challenge. Therefore, the finding of this study explains the link between, and effects of health transition on reproductive health services

The study found that medical doctors made up the largest percentage of last providers to end pregnancy, pharmacists/chemist/drugstore sellers made up the second largest percentage of the last providers to end the pregnancy while nurses/midwifes made up the fifth largest percentage of the last providers to end pregnancy. Due to the unclarity of abortion law in Ghana and its perceived restrictiveness, many of the doctors and midwife fear to offer induced abortion in the health facilities but rather refer abortion clients to their respective pharmacies, chemical stores or drug stores where they subsequently induce the abortion with no records being kept. In similar finding Gedif (2016), reported that when there is no clarity and information on abortion law despite permissiveness it will make many health providers to fear to provide safe induced abortion and many women will end up carrying out concealed abortion . This is in accordance with the finding of this study.

Consequently, due to refusal of health workers to provide safe induced abortion services despite many women had gone for it at the health facility, only 59 .1% women were served with safe induced abortion at health facility from 2012 to 2017 while 40.9% of the women carried out unsafe induced abortion from 2012 to 2017. This finding is clearly explained by WHO, (2015 and 2012), reports that safe abortion is completely safe when performed within minimum set medical standards and the law of the country (Legal framework). The report continues to say that in countries with restrictive or unclear law on abortion like Ghana, many skilled providers will perform induced abortion under concealed environment where it ends up unsafe abortion.

Many of the induced abortions were carried out in the year 2016 while small number of induced abortions were carried out in the year 2017. The trend of unsafe abortions recorded kept on increasing from 2012 which peaked in 2016 and thereafter dropped. The rise and drop in induced abortion rates from 2012 to 2017 in Ghana could be attributed to immediate and long-term positive outcomes of Reducing Maternal Mortality and Morbidity (R3M) program which was launched in 2006 by Ghana Health Services and other health implementing partners (Sundaram et al., 2015). The program has been implemented in phases and aimed at reducing cases of morbidity and mortality due to unsafe abortion. First phase was from 2006 to 2009, second phase was from 2010 to 2011 while the third phase is ongoing. Secondly, Millennium Development Goals-MDGs which was launched and implemented from 2000-2015 globally and subsequently replaced by Sustainable Development Goals-SDG. Report of WHO, (2015) presented more supportive argument that the estimate of Maternal Mortality Ratio for Ghana declined from 634 in 1990 to 319 in 2015 due to Millennium Development Goals (MDG) program in Ghana and globe at large. The report of WHO, 2015 is more connected to the finding of this study because abortion is one of the five direct obstetric leading causes of maternal death globally. The four other causes are hemorrhage, infection, eclampsia and obstructed labor. The finding of this study further shows positive progresses being made by R3M and MDGs programs in Ghana, however more need to be done to achieve maximum results because there is little fraction 4.1% of reduction in unsafe safe as estimated 45% in 2012-2014 (Sundaram A et al, 2012; Aku, Morhe, Morhe, & Sciences, 2014) and finding of this study 40.9% being unsafe abortion for the period of 2012 to 2017

Majority of the respondents paid by themselves at first place to terminate pregnancy while only one woman 1(0.12%) paid by herself with contribution from her friend at the first place to end the unwanted pregnancy. The study finding is similar to the study of Clarke & Mühlrad (2016),

reported that in developing countries access of safe induced abortion among social and economically empowered women is on increases. However, at last place to end the pregnancy, about 49% respondents said their partners paid for the services. This also further confirms the finding in this study that "The partners of the respondents favored induced abortion for unwanted pregnancy" while second highest percentage of the respondents said they paid by themselves at last place to end unwanted pregnancy. This is still in line with the finding of Clarke & Mühlrad (2016), reported that in developing countries access to safe induced abortion particularly by social and economically empowered women is on increases.

The immediate health problems experienced by the respondents one month after the induced abortion in their leading order were: - Pain, bleeding, fever, bad vaginal discharge and injuries. While the late health problems experienced by the women six months after the induced abortions were: - Abdominal pain, irregular periods, more painful periods, lack of periods, infections and sterility. These health problems however, developed in multiple of combinations. This study finding revealed similar complications due induced abortion documented in the study of Frederico et al.,(2018) which reported that the complications associated with unsafe abortion are sepsis, hemorrhage, genital trauma, pelvic inflammatory diseases, secondary infertility and even death. As a result, 40.5% of the respondents had to receive treatment for health problems which is also in total agreement with the report of United Nations, (2014) that in Sub-Saharan Africa, 3.9% of maternal deaths are due to unsafe induced abortion arising from an estimated 19 million unsafe abortions performed annually and half of the proportion of the women will need medical care for complications like sepsis, hemorrhage, genital trauma, Pelvic Inflammatory Diseases, infertility and others.

Many different types of treatment had to be administered to women due to health problems mainly from public health facility compare to private health facility and treatments were: -Antibiotics, blood transfusion, operation and other treatments like painkillers or folic acid. Many of the treatment given to the respondents were given in combinations for more effectiveness or because of the multiple complications that developed. This is in line with the reports of WHO, (2015 and 2012), estimated that globally 22 million induced abortions occur within a formal health care system while 20 million occur outside of the health care system which at the end consumes much of the health facility resources in managing the complications especially of unsafe induced abortion. The resources highly consumed are antibiotics, blood transfusion, painkillers, supplies like intravenous fluids, syringes, canular, plaster, cotton wool, gauze, disinfectants and a lot of time needed by health workers to manage the complications due to unsafe abortion.

Majority of the respondents were not visited at their various homes by the health workers after the induced abortion while few of them were visited at their various homes by health workers after the induced abortion. Pazol et al., (2015), argued that quality Comprehensive Abortion Care includes Post-Abortion Care (PAC) that only not helps to treat and manage complications of unsafe abortion but also helps to prevent maternal morbidity and mortality, vicious cycle of unwanted pregnancies that require demand for induced abortions and other sexual reproductive health matters. The Post Abortion Care involves emergency treatment of abortion complications, family planning services with use of modern contraceptives, screening and treatment of STIs, HIV/AIDS care, referrals, community outreaches with special visits to the homes of abortion clients, Community sensitization in order to empower them on the issues of Comprehensive Abortion Care. However, in line with the study finding "The low rate of visits to the homes of abortion clients after induced abortion by health workers," Mutua, Manderson, Musenge, & Achia (2018); Paul, Gemzell-

Danielsson, Kiggundu, Namugenyi, & Klingberg-Allvin, (2014) argued that visits to the homes of abortion clients and provision of PAC in general in many of the developing countries is poor because of negative attitudes of health workers mostly caused by the fear of the law on abortion presumed to be illegal to provide post abortion care, stigma in community towards abortion resulting in continued seek for concealed abortion services.

Higher proportion of the respondents were not counselled on contraceptive methods by health workers before or after the induced abortion while small proportions were counselled on contraceptive methods by health workers before or after the induced abortion. Counselling before and after induced abortion by health workers is key and one of the elements of post abortion care. This helps the women to make informed choice on contraceptive methods that prevents unwanted pregnancies which otherwise are mostly aborted

Respondents gave several reasons why they carried out induced abortion. These reasons were finally categorized into three broad groups namely: - Maternal/fetal reasons, proximate reasons and distal reasons accordingly. Proximate reasons 54.8% were found to be leading reasons women carried out induced abortion. The second leading reasons 39.8% was maternal/ fetal health reasons that forced women to carry out induced abortion (Tilahun, Dadi, Shiferaw, 2017 ; Alhassan et al., 2016) study confirms this finding that the common causes for people to seek induced abortion are pregnancies as a result of sexual abuse, not ready to be mother, lack of support from family/relative as one set of reasons (Proximate) and economic status, academic career, being young, ill health of the mother, abnormality with the developing baby as second set of reasons(Maternal/fetal factors)

5.3 Distal determinants

The study found majority of the respondents were single while few of the respondents had married before. Many people seek unsafe abortion services due to societal norms and cultural norms that create stigma for unwanted pregnancies especially for young and single women, pregnancy out of marriage forcing women to seek concealed abortion (Tilahun, Dadi, Shiferaw, 2017 ; Alhassan et al., 2016)

The majority of the respondents said abortion is illegal in Ghana while the second highest number of the respondents said they did not know if abortion is legal in Ghana. Several studies by different scholars have shown similar findings. The scholars with their findings are:- Maxwell, Voetagbe, Paul, & Mark (2015); Rominski et al.(2016), reported that despite having liberalized abortion in 1985, large proportion of the populations in Ghana are unaware that safe, legal abortion is permitted in Ghana. In Nepal despite legalizing abortion in 2002, it was found out that there was 59% lack of universal knowledge on legality of abortion among many of the local women like the report given by a household-based survey completed at the country's Rupendehi district (Andersen et al., 2011). In India although abortion had been legal since 1972, only 18.0% respondents knew that abortion is legal with 64.0% of respondents thought it was not legal, and the remainder were unsure hence majority of women resorted to concealed abortions for unintended pregnancies. And according to the study of (Denberu, 2017); Gupte et al., (1997); Azize-Vargas et al.,(1997), though abortion had been legal in Puerto Rico for 20 years, there was still a widespread knowledge that abortion is illegal with low level of sensitization, demand creation for safe, legal abortion consequently even medical students knew little on the legality of abortion forcing many women to seek for concealed abortions. All above previous studies confirm the finding in this study

When asked under which conditions abortion can legal be carried out in Ghana, majority of the respondents said abortion can only legal be carried out if the maternal health or fetus is affected while a third were not sure if abortion can legally be carried out in Ghana. Study conducted by Wangdi & Gurung (2016); Pazol, Creanga, & Jamieson, (2015), in USA similar finding was reported that some people in United States still procure unsafe induced abortions services due to unawareness on legal safe abortion services where 1.2% of women had self-induced abortion by use of Misoprostol while 1.4% of them attempted to induce abortion by use of other substances like herbs, vitamin C tablet. In the same study they continued to report that the percentage of unsafe induce abortion in developing countries is high due to ignorance on safe, legal abortion services. Similarly, Rominski et al., (2016); Maxwell et al., (2015); Morhee & Morhee, (2006); Hesse & Samba, (2006) also reported that despite having liberalized abortion in 1985, large proportion of the populations in Ghana are unaware of the conditions under which abortion is permitted thus the provision of and accessibility of both quality Comprehensive Abortion Care which also includes Post Abortion Care and family planning services in healthcare facilities is still low due to lack of clarity on abortion that is perceived to be prohibitive

5.4 Summary of the findings

Women aged 20-24 years who belonged to Christian denomination, cohabiting and mostly living in urban areas more so of Ashanti region had accessed more safe abortion services than their counterparts. Women who had separated and history of one parity, educated with Junior High Secondary School/ Junior High School certificates and belonged to fourth wealth index quintile category also accessed more safe abortion services compared to their counterparts

Women with unplanned pregnancies and history of one induced abortion obtained more safe abortion services than their counterparts. All abortion initiated at public health facility were safe

while 40% of abortion initiated at private health facility were unsafe. Many of the safe abortion 38.8% were first initiated by pharmacists/drug shop sellers followed by relative/friends 33.6% and nurse/midwife only 1.2% while none of the safe abortion was first initiated by medical doctors. The year 2016 registered many of the safe abortion compared to the rest of the years. Women whose first sexual debut was at 12-16 years obtained bigger number of safe abortions compared to their counterparts. Women who were living with their partners and the partners favored induced abortion obtained more than half of the safe abortion services compared to their counterparts. Majority, 85.9% of the women who had obtained safe abortion never experienced health problems six months after induced abortion likewise majority 87.8% of the women who obtained unsafe abortion never experienced health problems six months after the induced abortion. The women who had experienced health problems six months after the induced abortion were mainly treated with Antibiotics from public health facility. Majority, 97% of the women who were not visited by health workers after the induced abortion had safe induced abortion. Women who were neither using contraceptive nor counselled on contraceptive before/after induced abortions obtained most of the (81.8%) safe abortion compared to their counterparts while half of the women who were counselled on contraceptive before induced abortion and were given contraceptive methods after the induced abortion obtained safe abortion compared to their counterparts. Women who reported contraceptive methods failure while on oral pills and injectable obtained more safe abortion than their counterparts who were on other types of contraceptive methods that failed to work.

Women who were not in marital union (Single) obtained majority 74.7% of the safe abortion compared to their counterparts. Women in monogamous marriage obtained most of the safe abortion services compared to their counterparts while women in polygamous marriage with two cowives obtained majority 87.8% of safe abortion services compared to their counterparts. Women

who married early at age of 15-19 years obtained many of the safe abortion services compared to their counterparts. Lastly women who had improper knowledge on legal, safe abortion obtained majority 80.3% of the safe abortion services compared to their counterpart

5.5 Limitation

During Ghana Maternal Health Survey, some key important information from men like knowledge, attitude and practices of men and health workers respectively towards safe abortion were not captured yet information from the two sources could have provided ground for policy reviews on abortion

It is difficult to obtain detailed, reliable information about the beliefs and practices on induced abortion and to create accurate measures of its extent of uptake because most women who obtain induced abortion services and most providers of the services are reluctant to respond to survey questions concerning abortion and some service providers even do not keep accurate records especially of safe abortion due to fear of the law.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.0 Introduction

Unsafe abortion is public health concern and it is a silent pandemic in our societies which should be given priority especially in low developing countries like Ghana while striving to achieve SDGs. This study was to identify determinants of induced abortion among women of reproductive age group in Ghana, evidenced from Maternal Health Survey 2017 data

6.1 Conclusion

Non contraceptive use by the women is a major cause of unwanted pregnancies that leads to vicious demand for induced abortion. This condition can be changed by scaling up family planning and contraceptive services in the community. The young women who were not in marital union, constituted highest proportions of women who induced abortion and initiated induced abortion in unsafe environment (92%)

Weak family bond especially poor communication between women and their sexual partners forces many women to carry out unsafe abortion. Poor contraceptive services in the community contributes to greater percentage cause of unwanted pregnancies that leads to unsafe abortion

Majority of the women are not knowledgeable on the law of abortion thus forces them to carry out unsafe abortion

6.2 Recommendation

Empower especially the young women to make independent reproductive health decisions and fertility choices by use of contraceptives to avoid unwanted pregnancies through comprehensive sex education, ensure favorable environment for contraceptive services at health facilities

Ghana Health Service and her partners should build the capacity of the health workers particularly midwife and doctors both in public and private health facilities to provide patient centered safe abortion services. Ministry of Education through Ghana education Services to incorporate Comprehensive Abortion Care into syllabus of health training schools like for nurses, midwifes and doctors. Government through her partners to introduce programmes that involve males and ensure their active participation in sexual reproductive health activities

Government through Ministry of Health to review policies on abortion that seek to permit provision of safe, legal abortion in Ghana

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APPENDICES

APPENDIX 1: Data extraction template for determinants of induced abortion among women of reproductive age in Ghana from GMHS,2017

Demographic characteristics

Characteristics	Frequency	Percentage
1.Age		
15-19		
20-24		
25-29		
30-34		
35-39		
40-44		
45-49		
Total		
2. Region		
Ashanti		
Greater Accra		
Central region		
Volta Region		
Eastern Region		
Western Region		
Northern region		
Upper West		
Upper East		
Brong Ahafo		
Total		
3. Religion		
Catholic		
Anglican		
Pressbyterian		
Pentecostal		
Other Christians		
Moslems		
Methodist		
Traditionalist		
No religion		
Total		
4. Residence		
Urban		
Rural		
Total		
5a. Currently in union		
Yes, currently married (Married		
Yes, living with a man (Cohabiting)		
No, not in union (Single)		
Total		

b. Current marital status		
Separated		
Divorced		
Widowed		
Total		
6.Parity		
1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16		
Total		
7a. Ever attended school		
Yes		
No		
Total		
b. Educational Level		
Primary		
Middle		
Jss/Jhs		
Secondary		
Sss/Voc/Tec		
Higher		
Total		
8. Wealth categorization		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		
Proximate factors		
9. Pregnant at the time of interview		
Yes		
No		
Unsure		
Total		
10. Do you want current pregnancy		
Yes		
No, not at this time		
Total		
11. Number of abortions carried out since 2012		
1		
2		
3		
4 and above		
Total		
12. What did you do to end the pregnancy?		
First actions taken		
Total		
13. First Provider to end the pregnancy		

Doctor, Nurse/midwife, pharmacist/chemical seller, relative/friend, traditional practitioner, No one and others		
Total		
14. First place to end unwanted pregnancy		
Public health facility		
Private health facility		
Out of health facility		
Total		
15. Last action to end the pregnancy		
Received safe induced abortion		
Carried out unsafe induced abortion		
Total		
16. Last place to end pregnancy		
Public health facility		
Private health facility		
Out of health facility		
Total		
17. Last provider to end pregnancy		
Doctor, Nurse/midwife, Com health officer/nurse, Pharmacist/chemical seller, Community health volunteer, TBA, Relative/friend, Traditional practitioner, No one and Other		
Total		
18. The year in which abortion was carried out		
2012		
2013		
2014		
2015		
2016		
2017		
Total		
19. Your age at first sexual intercourse		
7-11		
12-16		
17-21		
22-26		
27-31		
32-36		
37-41		
42-46		
47-51		
Total		
20. Partner currently living with the respondent		
Yes		
No, living somewhere else		
Total		

21. What was the attitude your partner towards you having abortion		
Favored		
Opposed		
Neutral		
He did not know		
Don't know/ Don't remember		
Total		
22. Health complications experiences within one month after abortion		
Bleeding		
Fever		
Pain		
Injuries		
Bad vaginal discharge		
None		
Total		
23. Health problems/complications experienced six months after abortion		
Abdominal pain		
Sterility		
Infection		
Lack of period		
Irregular periods		
More painful periods		
None		
Total		
24. Who paid for the first step to end the pregnancy		
1,2,3,4,5,6,7		
Total		
25. Who paid for last step to end unwanted pregnancy		
1,2,3,4,5,6,7,8,9,10,11,12,13,14		
Total		
26. Type of treatment receive after the abortion		
Operation		
Blood Transfusion		
Antibiotics		
Others (Counselling)		
Total		
27. Place of treatment for health problems due to abortion		
Public health facility		
Private health facility		
Out of health facility		
Total		
28. Was visited at home by health worker after abortion procedure		
Yes		

No		
Don't know		
Total		
29. Was counselled on contraceptive methods by health workers before or after abortion services		
Yes		
No		
Total		
30. Types of contraceptive services offered at health facility after the abortion		
Was given contraceptive method		
Was prescribed a method of contraceptive		
Was given referral to another place for contraceptive services		
Don't know		
Total		
31. Using contraceptive by time became pregnant		
Yes		
No		
Total		
32. Types of contraceptive being used		
Injectables		
IUD		
Condoms		
Implants		
Pills		
Diaphragm		
Foam/Jelly		
Rhythm methods		
Withdrawal		
Other		
Total		
33. What was the main reason for carrying out abortion?		
1, 2,3,4,5,6,7,8……. Reasons		
Total		
Distal characteristics		
34. Did you marry or lived with a man before		
Yes, married before		
Yes, lived with a man before		
No		
Total		
35. Age at first union		
15-19		
20-24		
25-29		
30-34		
36. Do you have cowives		

Yes		
No		
Do not know		
Total		
37. The number of cowives you have		
2,3,4,5,6		
Do not know		
Total		
38. Is abortion legal in Ghana		
Yes		
No		
Don't know		
Total		
39. What are conditions under which abortion is legal in Ghana		
Rape/defilement		
Incest		
Life of the mother in danger		
Risk to physical health of the mother		
Risk to mental health of the mother		
Foetal abnormalities		
During first trimester only		
Up-to second trimester		
Mother mentally not sound		
Do not know		
Others		
Total		