UNIVERSITY OF GHANA, SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF POPULATION, FAMILY AND REPRODUCTIVE HEALTH

KNOWLEDGE, ATTITUDES AND PRACTICES OF MEDICAL ABORTION AMONGST DOCTORS AT THE GREATER ACCRA REGIONAL HOSPITAL, ACCRA GHANA

BY

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DECLARATION

With the exception of the duly acknowledged references, I, Alex Ackon, hereby declare that this research work is the result of my original work at the Department of Population, Family and Reproductive Health in the School of Public Health, College of Health Sciences, University of Ghana under the supervision of Dr. Ernest Maya. This work has not been presented for any other degree in this university or elsewhere either in whole or part. I am responsible for the views expressed and the factual accuracy of the contents.

10th December, 2023

…… ……

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15th December 2023

DR. ERNEST MAYA DATE

SUPERVISOR

DEDICATION

This dissertation is dedicated to all women who should have survived but died out of unsafe abortion and all those women who suffered physical, emotional, and social adverse effects of unsafe abortion, and all doctors and healthcare practitioners who strive to ensure that women have safe abortion.

ACKNOWLEDGEMENT

I am most grateful to Almighty God who has gifted me with knowledge, good health, and protection throughout the course. I am grateful for the wisdom and steadfastness He endowed me with to undertake this research.

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To my wife Angela Ackon, my son Adrian K. A. Ackon, daughter Anna Ackon, my mother, Anna Vidah Andoh, and my father Mr. Peter Ackon, I appreciate your prayers and encouragement.

I also recognize individuals who in various ways have assisted me to accomplish this project work. May the Lord bless you abundantly.

ABSTRACT

Background: Unsafe abortion is a major contributor to maternal morbidity and mortality in Ghana and other developing countries. Safe termination of pregnancy is very crucial to reducing Ghana's maternal mortality ratio of 15 to 30% maternal deaths with 308 per 100, 000 live births according to the World Bank. Medical abortion is preferred to surgical method of termination of early pregnancy because the procedure is non-invasive with greater privacy and often does not involve hospitalization. Understanding the perspectives of doctors on medical abortion service delivery is pertinent to identifying barriers and enablers to the successful integration of medical abortion into general practice and is critical to increasing access to these services for women. The study sought to determine the knowledge, attitudes, and practices of medical abortion amongst doctors at the Greater Accra Regional Hospital.

Method: A hospital-based cross-sectional study was carried out among medical doctors at the Greater Accra Regional Hospital. A self-administered structured questionnaire was used to collect the data. Part one of the questionnaire was used to collect information on the demographics, part two involved questions on knowledge of medical abortion whereas part three included information on the attitude of doctors towards medical abortion The data was analyzed using STATA version 16. Categorical variables were analyzed using frequencies and percentages. Bivariate and multiple regression analysis were used to establish the relationship between factors influencing the practices of medical abortion among the doctors.

Results: The mean (± SD) age of the respondents was 35 (± 7.67) years, with a range of 18-50 years. One hundred and sixteen 116 (53.5%) of the participants were male and the majority (60.4%) were married. The majority of the participants (81%) have adequate knowledge about medical abortion, while a few (3.7%) have low knowledge about medical abortion. Results of the study revealed that about (57%) of participants do not carry out elective medical termination of pregnancy. The major reason given for not carrying out elective early medical termination of pregnancy was outside of the scope of practice (48%) and against religious practice (35%). There was significant difference between doctors at the Greater Accra Regional Hospital who practice medical abortion and those who do not practice medical abortion based on age (χ^2= 30.44, p<0.0001), marital status (χ^2= 11.26, p=0.001), specialization (p<0.0001), grade (p<0.0001), number of years of practice (p<0.0001), comfortable working in medical abortion facility (χ^2=8.77, p=0.003), willingness to provide evidence-based dosing regimen (χ^2=26.64, p<0.0001), experience

complication while administering medical abortion (χ^2= 20.59, p<0.0001) and experience of complication of medical abortion offered by another doctor (χ^2= 30.25, p<0.0001). After adjusting for confounders, participants who experienced complications while administering medical abortion were 5.56 times more likely to practice medical abortion compared to participants who had not experienced complications while administering medical abortion [AOR=5.56, CI= (2.05-15.10), p value=0.001)]

Conclusion: Doctors generally have adequate knowledge about medical abortion. Attitudes of medical doctors and their practice of medical abortion is significantly influenced by personal, religious, and cultural beliefs. Those who have been trained in abortion procedures were more comfortable practicing or referring patients. The study recommends that the Ministry of Health must ensure that health professionals are trained on medical abortion

TABLE OF CONTENTS

DECLARATION i
DEDICATION ii
ACKNOWLEDGEMENT iii
ABSTRACT iv
TABLE OF CONTENTS vi
LIST OF TABLES ix
LIST OF FIGURES x

CHAPTER 1 1
INTRODUCTION 1
1.1 Background 1
1.2 Problem Statement 4
1.3 Conceptual Framework 6
1.4 Justification of Study 8
1.5 Research Questions 8
1.6 Objectives 8
1.6.1 General Objective 8
1.6.2 Specific objectives 9

CHAPTER 2 10
LITERATURE REVIEW 10
2.1 Unsafe abortion 10
2.2 Medical Abortion 12
2.3 Knowledge of medical abortion among doctors 15
2.4 Attitude of doctors towards medical termination 20
2.5 Practice of doctors towards medical termination 24
2.6 Factors influencing the practice of medical abortion 25

CHAPTER 3 29
METHODS 29
3.1 Introduction 29
3.2 Study Design 29

3.3 Study Location 29
3.4 Variables 30
3.5 Study Population 31
3.6 Eligibility Criteria 31
3.6.1 Inclusion criteria 31
3.6.2 Exclusion criteria 31
3.7 Sample Size 31
3.8 Sampling Method 31
3.9 Data Collection Techniques and Tools 32
3.10 Quality Control 32
3.11 Data Processing and Analysis 33
3.12 Pre-test of Data Collection Instrument 33
3.13 Ethical Considerations 34
3.13.1 Voluntary participation and withdrawal 34
3.13.2 Privacy and confidentiality 34
3.13.3 Risk and benefits 34
3.13.4 Compensation 35
3.13.5 Declaration of conflict, interest 35

CHAPTER 4 36
RESULTS 36
4.1 Introduction 36
4.2 Background characteristics 36
4.3 Socio-demographic Characteristics 37
4.4 Knowledge of Medical Abortion 38
4.5 Attitude towards Medical Abortion 42
4.6 Factors influencing practice of MA 44

CHAPTER 5 50
DISCUSSSION 50
5.1 Introduction 50
5.2 Knowledge of medical abortion among doctors 50
5.3 Attitude of doctors towards medical termination 52
5.4 Factors influencing the practices of medical abortion among the doctors 53

5.5 Limitations of the Study 54
5.6 Strength of the Study 54

CHAPTER 6 55
CONCLUSIONS AND RECOMMENDATIONS 55
6.1 Conclusions 55
6.2 Recommendations 55
6.3 Further research 55

REFERENCES 56

APPENDICES 66
Appendix 1: Questionnaire 66
Appendix 2: Respondent Information Sheet 71
Appendix 3: Consent Form 73

LIST OF TABLES

Table 3.1: Variables 30

Table 4.1: Socio-Demographic Characteristics of Participants 37

Table 4.2: Definition of Abortion, safe and unsafe abortion 38

Table 4.3: Adverse effects, effectiveness of medical abortion using misoprostol and effectiveness of Medical abortion using Mifepristone and Misoprostol 41

Table 4.4: Level of knowledge of participants about medical abortion 41

Table 4.5: Perception of Colleagues who practice Medical Abortion 42

Table 4.6: Reasons for participants who disagreed or strongly disagreed that medical abortion should not be permitted under any circumstance (N=80) 43

Table 4.7: Reasons for participants not willing to provide medical abortion (N=21) 44

Table 4.8: Association between medical abortion practice and sociodemographic characteristics and participants' experience and attitude towards MA 46

Table 4.9: Multiple logistic regression analysis of factors associated Medical Abortion among participants 48

LIST OF FIGURES

Figure 1.1: Conceptual Framework on knowledge, attitude and practice of medical abortion among doctors 7

Figure 4.1: Method considered safe for termination of early pregnancy 39

Figure 4.2: Advantages of medical abortion over surgical abortion 39

Figure 4.3: Medication used for medical abortion 40

Figure 4.4: Reasons for not carrying out medical abortion 42

Figure 4.5: medical abortion be permitted under any circumstance 43

Figure 4.6: Willingness to be provide medical abortion 44

LIST OF ABBREVIATIONS

AAPI	Abortion Assessment Project-India
BCC	Behavior Change Communication
D&E	Dilatation and Evacuation
EVA	Electric Vacuum Aspiration
GARH	Greater Accra Regional Hospital
GHS	Ghana Health Service
GPs	General Practitioners
HCPs	Healthcare Professionals
ID	Identification Number
MA	Medical Abortion
MOH	Ministry of Health
MTP	Medical Termination of Pregnancy
MVA	Manual Vacuum Aspiration
SHR	Sexual and Reproductive Health
WHO	World Health Organisation

CHAPTER 1

INTRODUCTION

1.1 Background

The World Health Organization (WHO) estimates that 73 million induced abortions occur annually, with nations in development accounting for 97% of all unsafe abortions (WHO, 2021). An unsafe abortion, according to the WHO, is performed by a person who lacks the necessary expertise, occurs in an environment that does not adhere to the very minimal medical standards, or both (WHO, 2004). In addition to being a significant factor in maternal morbidity and mortality, unsafe abortions result in several health problems. The most serious life-threatening adverse effects of the least safe abortions include hemorrhage, infection, injury to the vaginal tract and internal organs, as well as harm to the uterus (WHO, 2019).

Haddad and Nour (2009) reported that swallowing poisonous liquids like turpentine, bleach, or drinkable concoctions, as well as causing direct harm to the vagina, are among the means of unsafe abortion. Additionally, in unsanitary settings, untrained medical staff performs curettage and dilatation incorrectly, resulting in uterine perforations and infections. As indicated by Kapp and Lohr (2020), providing access to trained professionals who can perform safe abortions is essential for offering thorough, high-quality reproductive and sexual health services. Surgical procedures such as manual vacuum aspiration (MVA), electric vacuum aspiration (EVA), and dilatation and evacuation (D&E), as well as pharmacological therapies such as misoprostol-only tablets and mifepristone and misoprostol combination pills are some examples of these procedures (WHO, 2019). It is essential to the provision of safe abortion, especially in some scenarios, given that self-managed abortion with medication abortion (MA) pills are effective as well as secure (Moseson et al., 2020). Because medication abortion brings women access to safe abortion

closer to home, it is favoured as a particularly significant advancement in abortion technology. One of the most important advancements in terms of increasing access to abortion is the practice of medical abortion (Guttmacher Institute, 2018). Medication or pharmaceutical medications are used to end a pregnancy during a medical abortion, a type of nonsurgical abortion that usually occurs in the first trimester (Hodgson, 2014; Louie, Chong, Tsereteli, Avagyan, Vardanyan, & Winikoff, 2014). Among the several medical abortion techniques that have been proposed, the WHO (2018) recommends a regimen containing mifepristone and misoprostol. When this regimen is used at around 63 days of gestation, the success rate of termination is roughly 98 percent (Kulier, Kapp, Gülmezoglu, Hofmeyr, Cheng, & Campana, 2011).

Although medical abortion in and of themselves are not dangerous, according to Dahlbäck, Maimbolwa, Kasonka, Bergström, and Ransjö-Arvidson (2007), they are dangerous when obtained or administered incorrectly, without the proper prescription, supervision, and follow-ups, or when people access inaccurate information and medication (Berdzuli, Pestvenidze, Lomia & Stray-Pedersen, 2017; Van Look & Cottingham, 2002; Virk, Zhang & Olsen, 2007).

Brenan (2018) stated that doctors are more well-known cultural figures and, as Nash (2019) asserted, they have a crucial role in the provision of abortion care and access. Their evidence-based attitudes and practices toward abortion may have a significant impact on public perception and policy (Brenan, 2018). General practitioners are frequently the first point of contact for health care and the provision of medical abortion by general practitioners as part of primary health care is highly accepted by women (Newton, Bayly, McNamee, Hardiman, Bismark, Webster, & Keogh, 2016; Summit, Casey, Bennett, Karasz, & Gold, 2016). Additionally, public general practitioners may charge less for medical abortions than private abortion clinics (Shankar et al., 2017; Mazza et al., 2020).

Furthermore, patients can get abortion services privately and are less likely to be discovered as needing such services when attending general practice clinics due to the wide range of clinical conditions treated there (Tomnay et al., 2018). This greater privacy may lead to better service uptake and accessibility (Tylee, Haller, Graham, Churchill, & Sanci, 2007). Women frequently turn to unsafe abortions when they are unable to get abortion in a timely, inexpensive, and safe manner (WHO, 2021).

As reported by Wells et al. (2016), an increase in unsafe abortions in Ghana, carried out with improperly prescribed pharmacological medications frequently has crippling effects on women. Aniteye, O'Brien, and Mayhew (2016) link the rise in the use of unsafe medical abortions in Ghana to the stigma attached to safe abortion services generally, notwithstanding the possibility of other contributing causes. Dawson et al. (2017) reiterated that there are obstacles to performing medical abortions in general practice. Some doctors believe that delivering medical abortion is outside the scope of their practice or that they would be stigmatized for doing so, while others feel alone and in need of peer support and referral channels to assist them in offering this service (Dawson et al. 2017; LaRoche et al. 2020).

To successfully integrate medical abortion into general practice and to increase access to these treatments for women worldwide, it is important to understand the views of doctors on the provision of medical abortion services. Through referral, advice, or advocacy, doctors from a variety of specialties directly or indirectly contribute to abortion care and access (Higgins, Schmuhl, Wautlet, & Rice, 2021; Martin, Seewald, Johnson, & Harris, 2020; Nash, 2019). However, the majority of studies on doctors' opinions on abortion have a narrow focus on fields closely connected to women's reproductive healthcare. A small body of research indicates that the majority of women's health professionals (Dodge, Haider & Hacker, 2016) and primary care physicians (Chuang, Martenis, Parisi, Delano, Sobota,

Nothnagle, & Schwarz, 2012) support access to abortion care, though much fewer take part in any abortion-related activities (Desai, Jones & Castle, 2018; Stulberg, Dude, Dahlquist, & Curlin, 2011) including referrals or counseling (Holt, Janiak, McCormick, Lieberman, Dehlendorf, Kajeepeta, ... & Langer, 2017; Homaifar, Freedman & French, 2017). Because providing safe abortion services is a way to lower maternal morbidity and mortality from unsafe abortion, it will depend on doctors' knowledge, attitudes, and practices of medication abortion and harm reduction as to whether they will be willing to empower women with sufficient knowledge about medical abortion.

1.2 Problem Statement

According to the most current estimates, approximately 45 percent of all abortions worldwide are unsafe, with 97 percent occurring in developing countries (WHO, 2021). In developed parts of the world, 30 women are estimated to die for every 100,000 unsafe abortions; in developing regions, that figure rises to 220 deaths for every 100,000 unsafe abortions (Ganatra et al., 2017). More than three-quarters (77%) of abortions in Sub-Saharan Africa are estimated to be unsafe, meaning an untrained person performs them, performed using non recommended method, or both (Guttmacher Institute, 2020). Based on the Ghana Maternal Health Survey (2017), 10 percent of all pregnancies ended in an induced abortion in 2017. Notwithstanding Ghana's relatively liberal legal framework, unsafe abortions are still a significant social and public health problem in the country (Adisah-Atta & Dim, 2019; Morhee & Morhee, 2006; Salifu, & Mohammed, 2020). Unsafe abortions can have severe consequences for women, and the major life-threatening complications, as asserted by the WHO (2019), are haemorrhage, infection, and injury to the genital tract and internal organs. As a result, removing obstacles to women's access to safe abortion is a critical tool for reducing maternal mortality.

Geographic distances to health centers, problems with confidentiality and abortion stigma, a lack of access to abortion education and information and unbiased pregnancy counselling, conscientious objection from doctors, and long waiting times are some of the impediments to medical abortion, according to Doran and Hornibrook (2016); Tomnay et al. (2018); Mazza et al. (2020).

Misoprostol (alone or in combination with other drugs) Appiah-Agyekum, 2018; Rominski, Lori & Morhe, 2017), inserting herbs into the vagina, or drinking concoctions are among the abortion methods used by young Ghanaians (Kyilleh, Tabong, & Konlaan, 2018). The option to report to a medical facility for counseling and termination medicines is frequently postponed due to a lack of knowledge about where the service can be obtained, stigma, and, to some extent, cost. As a result, the method fails, and many women end up in the hospital with complications (Aniteye, O'Brien & Mayhew, 2016). According to anecdotal evidence from colleagues in medical practice, women frequently report having an almost empty uterus after taking medication to terminate pregnancy. They only rush to the hospital because they were in a lot of pain and bleeding. Doctors, midwives, and practitioners trained in midwifery are permitted to terminate pregnancies in Ghana under the terms of the law and the policy governing abortion services in Ghana. Healthcare providers are ethically obligated to provide accurate information to patients while also providing evidence-based care that complies with the highest standards. Providing adequate information on medication abortion to women during their reproductive years will reduce unsafe abortion and its consequences. The question is whether doctors will be willing to provide women with accurate evidence-based information on medication abortion. The willingness of doctors to provide adequate medication knowledge to women will be determined by their knowledge, attitudes, and practices regarding medication abortion.

1.3 Conceptual Framework

Doctors are essential to the availability and quality of medical abortion care. The availability of medical abortions is supported by a majority of doctors, however, some are more willing than others to do so. Doctors who advocate abortion are more likely to be women than men. According to a survey by Dodge, Haider, and Hacker (2016), most women health professionals are in favor of access to abortion. Highly religious doctors are less likely to support abortion, as would be expected in any population. In their 2009 investigation of private medical practitioners' views and actions towards abortion in Nigeria, Onah, Ogbuokiri, Obi, and Oguanuo (2009) found that participants' refusal to abort and conformity to the law were motivated by their religious beliefs. The intricate interplay of religious, ethical, professional, and personal convictions presents a considerable barrier to doctors performing medical abortions. According to Turner and Chapman (2008), values have a substantial impact on how people make decisions and eventually behave. The availability of services is influenced by clinicians' attitudes and behaviors concerning medical abortion, as shown by Harries et al. (2009). According to research, abortion care providers in Sub-Saharan Africa and Southeast Asia experience interpersonal conflicts, stigma, and victimization as a result of the unfavorable attitudes held by their families, communities, policymakers, and coworkers (Loi, Gemzell-Danielsson, Faxelid & Klingberg-Allvin, 2015). Additionally, according to some studies, doctors experience stigmatization at work, which may be a factor in the access problem. Women who want medical abortions face obstacles due to doctors' ignorance and lack of training.

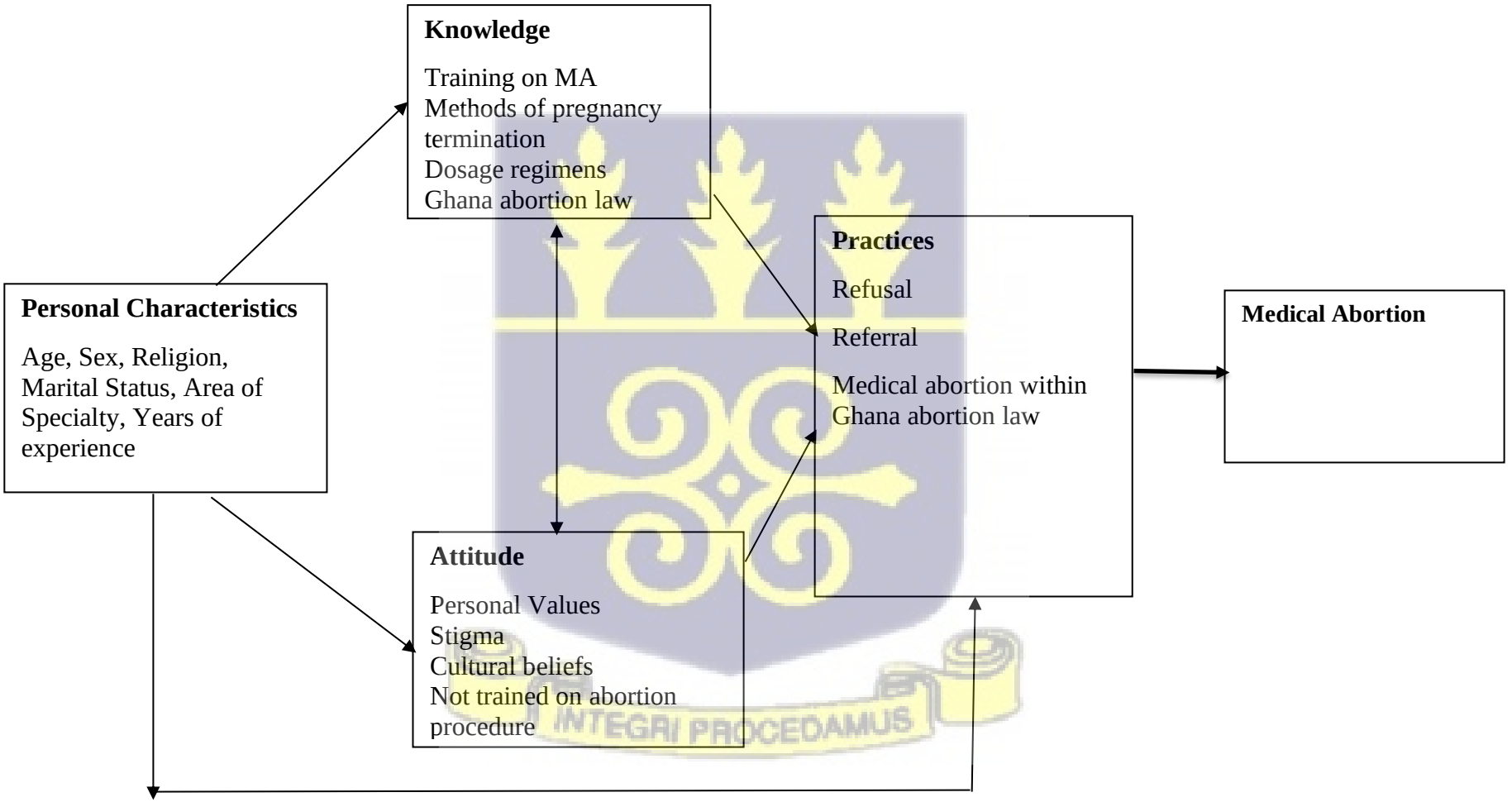

Figure 1.1: Conceptual Framework on knowledge, attitudes and practices of medical abortion among doctors

Source: Adapted from Teixeira et al. (2013)

1.4 Justification of Study

The majority of women still die as a result of septic incomplete abortion, despite several attempts to lessen the issues related to abortion, particularly unsafe abortion. In practical terms, it is generally acknowledged that statistics on the occurrence of abortion and, unsafe abortion in particular are deficient. This is due to the presumption that the vast majority of such incidents take place outside of healthcare facilities, and even when they do, the data are handled improperly. The consequence is that not only is the incidence understated, but also the complications and fatalities related to case management; therefore, educating women about medical abortion during their reproductive years will lessen unsafe abortion and its effects. Doctors' knowledge, attitudes, and practices on medical abortion will determine whether they are willing to equip women with the necessary information about medical abortion.

1.5 Research Questions

1. What is the level of knowledge of medical doctors on medical abortion at the Greater Accra Regional Hospital?
2. What is the attitude of medical doctors on medical abortion at the Greater Accra Regional Hospital?
3. What factors influence the practices of medical abortion amongst doctors at the Greater Accra Regional Hospital?

1.6 Objectives

1.6.1 General Objective

The main objective of this study is to examine the knowledge, attitudes and practices of medical abortion among doctors at the Greater Accra Regional Hospital.

1.6.2 Specific objectives

1. To assess the knowledge of medical abortion among doctors at the Greater Accra Regional Hospital
2. To determine the attitude of doctors towards medical termination at the Greater Accra Regional Hospital
3. To examine the factors influencing the practice of medical abortion by doctors at the Greater Accra Regional Hospital

CHAPTER 2

LITERATURE REVIEW

2.1 Unsafe abortion

Pregnancies that end in stillbirth or no live birth are referred to as abortions. The Latin term aboriri, which translates as failure to be born, is the origin of the English word abortion. The termination of a pregnancy, whether natural, medically necessary, or induced, before the fetus is viable outside the uterus or capable of having a life outside the womb is referred to as an abortion. The placenta, bag of waters, and fetus are among the fetal products of conception that are suddenly and unexpectedly removed from the uterus (WHO, 2014).

According to the World Health Organization (WHO), an unsafe abortion is any procedure to end an unwanted pregnancy carried out by untrained personnel, in a setting with inadequate equipment, or both (Ganatra et al., 2014). Women, couples, and populations around the world use induced abortion as a reproductive health care, whether it is safe or hazardous, lawful or prohibited. In situations where women lack access to reliable family planning, induced abortions are a crucial component of women's reproductive health care when faced with unintended pregnancies. About forty-five percent of all abortions are unsafe, and 97% of these procedures take place in developing nations (WHO, 2021).

According to estimates, 30 women worldwide per 100,000 unsafe abortions die, while 220 women per 100,000 unsafe abortions die in underdeveloped regions (Ganatra et al., 2017). As stated by estimates, 77 percent (more than three-quarters) of abortions in Sub-Saharan Africa are unsafe, meaning they are carried out by unskilled personnel, using contraindicated techniques, or both (Guttmacher Institute, 2020). In 2017 induced abortion occurred in 10% of all pregnancies, according to the Ghana Maternal Health Survey. Unsafe abortions are also substantially associated with maternal morbidity from conditions such as bleeding, sepsis,

peritonitis, and trauma to the cervical region, vagina, uterus, and abdominal organs (Grimes et al., 2006). These abortion-related deaths are frequently preventable if the procedure is carried out by a trained professional using the right techniques in sterile settings (WHO, 2012). Despite its prevalence, unsafe abortion is one of the most completely preventable causes of maternal disease and mortality. Where abortion is permitted, safe, and simple to access, complications are rare.

By examining accessibility from the perspective of rural Indian women, Banerjee et al.'s (2012) study sought to investigate the discrepancy between the availability of safe abortion services and their utilization in the Indian states of Bihar and Jharkhand. Using two-stage stratified random sampling, 1411 married women of reproductive maturity were located and enrolled in four rural districts of Bihar and Jharkhand, India. The results showed that many of the women were underprivileged, had never gone to school, and had minimal contact with the media. Rather, they asked family, friends, and community health workers for advice on how to stay healthy (Banerjee et al., 2012). Women were more likely to feel that services are available and have positive attitudes toward abortion if they know about abortion, such as understanding what is involved. Additionally, women who acknowledged receiving pro-abortion messages were more likely to support the procedure. The study demonstrated that behavior change communication (BCC) interventions are required to increase enabling possibilities for women and enhance potential access to services by dealing with unfavorable community perceptions of abortion and by promoting local accessibility to safe abortion services (Banerjee et al., 2012).

Worldwide legal restrictions on abortion access have been enacted by policymakers, which are widely believed to have contributed to the prevalence of unsafe abortion and the mortality and morbidity it causes (Haddad & Nour, 2009; Grimes et al., 2006; WHO, 2018). These

restrictions include limitations on access to safe abortion medications and devices as well as training and education on safe methods. On the entire African continent, there are severe legal restrictions on abortion (Jackson, Johnson, Gebreselassie, Kangaude, & Mhango, 2011), which leads to a high percentage of unsafe abortion situations.

To decrease the prevalence of unsafe abortions, various organizations are attempting to promote access to medication abortion information and services throughout Africa. Ensuring a favorable legal environment is one stage in the process of ensuring the safety and accessibility of abortion services, which is essential for women's health.

2.2 Medical Abortion

Despite the availability of affordable, effective, and safe methods of abortion, particularly medication abortion, many abortions around the world continue to be hazardous, leading to morbidity and mortality among those involved. Vacuum aspiration is the most popular form of early pregnancy termination; medication abortion is a suitable alternative (Weitz et al., 2004). Medical procedures became a feasible alternative to surgical abortion with the discovery of prostaglandins in the early 1970s (Karim, 1971; Karim, 1970; Karim et al., 1977). Their use has advanced over the past 20 years, and their active components are now used for the initial phase of medical abortion.

Out of the 1.06 million abortions carried out in the US in 2011, nearly 240,000 were medication abortions (Jones & Jerman, 2014). According to Jerman and Jones (2014), 17% of all non-hospital abortion providers only performed medication abortions in 2011, whereas 90% of abortion facilities offered medication abortions. Mifepristone and misoprostol have been a part of the medical abortion toolkit since 1988. Up until nine weeks of gestation, the use and effectiveness of this combination therapy have been well-documented. A modified version of the technique is now available for both late first and second trimester abortions. In 2005, the

WHO added the medication combination of mifepristone and misoprostol for the termination of pregnancies (Weitz et al., 2004).

Mifepristone, widely considered the best option for medical abortion (Dunn & Cook, 2014), is listed on the WHO's list of essential medications (WHO, 2005). The recommended regimen for eligible women seeking a medical abortion up to 70 days following their last menstrual cycle is mifepristone 200 mg orally and misoprostol 800 mg buccal/vaginal/sublingual (Costescu et al., 2016). According to data on the usage of mifepristone in various nations since 1988, the medication is linked to a larger percentage of medical as opposed to surgical abortions but not to a rise in total abortion rates (Jones & Henshaw, 2002). Medical abortion care covers the management of a wide range of clinical situations, including imperfect abortion, intrauterine fetal death, spontaneous and induced abortion (both viable and non-viable pregnancies), and post-abortion contraception. Misoprostol alone or in combination with mifepristone is typically used to treat abortions medically. Access to acceptable, safe, and successful abortion care is mostly dependent on medical care. The adoption of medical abortion methods has facilitated job sharing and resource allocation that is more effective across high and low resource environments. Additionally, many medical abortion interventions, particularly those in the early stages of pregnancy, can now be given as outpatient care and at the primary care level, expanding access to care. Pregnant women have a non-invasive, highly accepted choice of medical abortion care, which decreases the demand for experienced surgical abortion physicians (WHO, 2018).

To better understand the knowledge, attitudes, and practices around the use of medical abortion pills, Thakur et al. (2020) undertook a cross-sectional study with 224 married women in the reproductive age group living in an urbanized hamlet in Delhi. According to the study's findings, 69.64% of women were aware of at least one form of abortion (medical or surgical), and 26.4% experienced at least one. Women only understood that abortions are permitted in

38.8% of cases. About 61.1% of people were aware of abortion "pills". Up to 41% of them claimed that a pharmacy was the only place where they could buy these medications. Only 6% of respondents had the right information about using these pills. Furthermore, 50% of respondents said they would be embarrassed to discuss these medications with a physician who is male due to common misconceptions about side effects. About 12.5% of women reported using medical abortion pills, yet 52.2% of women said they had ever become pregnant unexpectedly. About 78.57% of the women who used MTP pills reported getting their medications straight from the pharmacy. Although there was a generally positive attitude toward the use of medical abortions in the community, Thakur et al. (2020) concluded that there were a lot of misinformation. The dangers of self-medicating with medical abortion pills must be made more widely known.

In a prospective study on consumer preferences and acceptance of manual vacuum aspiration versus medical abortion as an early pregnancy termination method in northwest Ethiopia, Woldetsadik et al. (2011) found that subjects who had medical abortions expressed significantly higher levels of satisfaction and were more inclined to select the same procedure again than did participants who had manual vacuum aspiration. Mifepristone paired with misoprostol is regarded as an efficient and secure procedure for the second trimester, according to the WHO (2004) and Royal College of Obstetricians and Gynecologists (2004). It has been shown that the cervical ripening process with mifepristone 36–48 hours before the administration of misoprostol not only enhances the rate of successful abortion but also shortens the time needed for an induced abortion as well as reduces the overall dose of misoprostol needed. As a result, this technique lessens the negative effects of abortion in the second trimester of pregnancy. A range of consequences caused by the anti-progesterone mifepristone increase the uterus' susceptibility to abortion by competitively blocking the progesterone receptor. Cervical dilatation, decidual necrosis, increased endogenous

prostaglandin (PG) production, and enhanced uterine sensitivity to PG are among these side effects, which appear 24–48 hours after the drug's administration. According to some research, a two-day break is more effective. However, because of the lengthy total abortion time required by this regimen, the patient's anxiety and financial burden are increased.

Misoprostol and mifepristone, when readily available, are safe and effective medications for medication abortion (Blanchard, Winikoff, Coyaji, & Ngoc, 2000; Fiala, Winikoff, Helstrom, Hellborg, & Gemzell-Danielsson, 2004; Henderson, Hwang, Harper, & Stewart, 2005; Ngoc et al., 2011). When the medications are properly provided, only 0.2 percent of women encounter major difficulties through medication abortion, a far lower percentage than the percentage of women who experience major problems from childbirth (WHO, 2018). Abortion is not always risk-free, though. As a result, when faced with an unintended pregnancy, women seek abortions and self-induce them or find providers, regardless of the law. Access to medication abortion is frequently restricted, not only by the law but also by social, religious, cultural obstacles, lack of awareness, and maternal perception. Today's unsafe abortions pose a serious threat to both public health and human rights (Assifi et al., 2016). Several studies have demonstrated that the combination of mifepristone and misoprostol is a well-researched, established method for the termination of pregnancy.

2.3 Knowledge of medical abortion among doctors

Rehnström Loi (2015) noted that while medical professionals play a crucial role in providing legalized abortion care services, their shortcomings and reluctance to do so pose the biggest obstacles to the field. Using in-depth interviews with six health care providers in Harare, recent research by Chiweshe and Macleod revealed that practitioners framed women searching for abortions as transgressing acceptable norms, reckless, manipulative, and oblivious, in light of cultural, religious, gender, and trauma arguments that depict abortion badly (Chiweshe, Mavuso, & Macleod, 2017). Some medical professionals are left behind, even though in some

instances they are familiar with the legal abortion laws in their countries. This can be shown in a study done in Argentina where the medical professionals were not adequately informed about the nation's legal abortion legislation (Ramos, Romero & Ramón Michel, 2014).

According to a study of 405 mid-level healthcare professionals, only 53.1% had good knowledge of medical abortion care and only 54.1% had a favorable attitude toward safe abortion. However, 81.5% of them were familiar with the revised abortion law, and 71.9% of them knew the situated definition of legal abortion in Ethiopia. In addition, healthcare professionals (HCPs) with an appropriate understanding of medical abortion and male providers were more likely to have a good attitude with regard to medical abortion, according to a different study conducted in Ethiopia (Assefa, 2019). This study found that roughly 54.1% of mid-level HCPs had positive attitudes about medical abortion. A study on 278 physicians who provide sexual and reproductive health (SHR) services was conducted in the USA. In circumstances of pregnancy caused by rape (89.6%), incest (89.2%), health risk (91.0%), and fetal abnormalities (85.9%), almost all respondents strongly believed that abortion can be offered (Dodge, Haider & Hacker, 2016). According to a 2017 study by Oppong-Darko, Amponsa-Achiano, and Darj (2017) most midwives in Ghana, where abortion is also legal in some situations, were unable to demonstrate an adequate understanding of the topic of abortion law. Some also had a false impression of what the law meant. Only 25% of HCPs in Zimbabwe, where there are restrictions on legal abortion, were aware of all four justifications for legal abortion, and 31 percent were unaware of one or more justifications (Madziyire, Moore, Riley, Sully & Chipato, 2019).

Ngo et al. (2014) conducted a cross-sectional study to evaluate public service providers' understanding of medical abortion (MA) and practices, as well as their attitudes toward bringing MA to basic and secondary health institutions in Vietnam. According to survey findings, 68.9% of providers solely provided surgical abortions, whereas 31.1% performed

both surgical and medical abortions. Providers were informed about the dosage and regimen of mifepristone plus misoprostol, but their understanding of the maximum gestational age for medical abortion, the harmful side effects of the combination drug regimen, and the safety as well as efficacy of MA in comparison to surgical abortion scored poorly. According to Ngo et al. (2014), providers in rural areas had considerably lower knowledge scores than those in urban settings. A large proportion of providers (82.9 percent) of clinicians said that MA should be made available in primary and secondary health settings. Lack of expertise and training, qualified staff, enough drug supplies, equipment, or infrastructure, regulations and procedures on MA, as well as patient awareness were among the perceived impediments to MA expansion. The authors came to the conclusion that the availability of medical abortions in Vietnam varied by region and was disproportionate to the availability of surgical abortions (Ngo et al., 2014).

In a separate study by Espinoza, Abuabara, and Ellertson (2004), general practitioners and obstetrician-gynecologists in Honduras, Mexico, Nicaragua, and Puerto Rico participated in focus groups to discuss their knowledge of and opinions toward medication abortion. The findings showed that doctors were knowledgeable about the use of a variety of medical and surgical abortion techniques. Women of higher socioeconomic class are more likely to use misoprostol for medication abortions, which can be prescribed by doctors or pharmacists or self-administered. Some participants expressed the hope that medical abortion would reduce the risks associated with unsafe abortion, while others contended that drug distribution and self-medication without proper counseling could be problematic. Participants also expressed conflicting opinions regarding safety, efficacy, cost, the possibility of self-medication, and acceptability. Participants observed a lack of reliable sources of information.

To better understand the knowledge, attitudes, and perspectives on medical abortion (MA) held by Turkish doctors, Akin, Doan, Zvaris, and Mihçiokur (2012) carried out a study throughout four provinces. A total of 268 general practitioners (GPs) and 187 obstetricians-gynecologists

(ob-gyns) completed pretested, structured, self-administered questions. Despite not yet being offered at reproductive health facilities in Turkey, the study's findings showed that 96% of OB-GYNs and 82% of GPs knew of MA. Additionally, 60% of the former and 5% of the latter claimed to have carried out MAs, the majority of the time utilizing misoprostol alone. More than 90% of obstetricians and 13% of general practitioners have done surgical abortions, and the majority (71 and 78%) believed that MA should be made available nationwide. According to Akin et al. (2012), the majority of Turkish doctors are aware of MA and favor its further usage. However, their reservations about the procedure and erroneous perceptions of its dangers and potential problems may account for some doctors' reluctance to offer MA services. Before MA is formally introduced, these issues should be covered in medical training programs and lobbying campaigns for the registration of mifepristone and misoprostol for its use.

To investigate the present knowledge, attitudes, and practices of doctors in Shillong on the moral and legal considerations of abortion, Ropmay et al. (2020) carried out a cross-sectional descriptive study. About 69% of the respondents had worked as practitioners for more than ten years and 76.9% of physicians said they preferred medical abortion because it is safe during the first few weeks of pregnancy. The consensus among all participants was that women should receive counseling prior to having the procedure performed. According to Ropmay et al. (2020), doctors in Shillong believe that abortion should be the exception rather than the rule, even though it is allowed in India. In emergency instances where the mother's or the fetus's lives are in danger, it may be wisely used. This study showed that, except for the documentation and procedural criteria outlined in the medical termination of pregnancy (MTP) Rules, 2003, Shillong's medical practitioners are adequately knowledgeable of the legal laws governing the termination of pregnancy. Government doctors are required by law to conduct MTP, but private practitioners have said they are reluctant to do so unless the mother's or the fetus' lives are in danger. Overall, medical professionals need to stay current on the laws,

regulations, and recommendations regarding abortion as well as any recent legislative changes that have been suggested. They discovered that more than 80% of practitioners were aware of the MTP Act's 1971 legal requirements. In comparison, just 8.4% of participants in a research done in Mexico in 2009 had a correct understanding of the laws in effect in the state where they practiced (Garca-Nez, Atienzo, Dayananda & Walker, 2013). Auxiliary nurse midwives may autonomously and successfully perform medical abortions at even lower levels of care and in situations where there is no physician on site, according to research by Puri et al. (2018).

A study by Acharya and Kalyanwala (2012) examined the knowledge of medical abortion (MA) among Indian abortionists, as well as their practices and attitudes toward offering MA to qualified women who were underprivileged, illiterate, or from rural areas. About 270 doctors who were licensed to perform abortions were interviewed using a standardized questionnaire in a few regions of India's Bihar and Maharashtra states. It was far from universal that the providers were aware of the maximum gestational age, the recommended doses of mifepristone and misoprostol, and other elements of the approved procedure (Acharya & Kalyanwala, 2012). Only about two-thirds of these doctors who were qualified to administer MA did so. Even though they all advised women before they took mifepristone, the topics frequently only covered pain management and potential problems. Usually, discussing contraception did not occur until the follow-up appointment. As a result, the majority of healthcare professionals failed to counsel MA patients on the necessity for self-protection in the two weeks following the administration of mifepristone (Acharya & Kalyanwala, 2012). Additionally, a lot of practitioners were hesitant to give MA to underprivileged, illiterate, and/or rural women. These results highlight the necessity of educating qualified abortion service providers about MA and allaying their concerns. Additional training for these professionals would boost their confidence in recommending MA to qualified women by emphasizing the safety and efficacy

of the method. Healthcare professionals' understanding and care delivery may change after receiving safe abortion care training.

2.4 Attitude of doctors towards medical termination

A combination of situations and personal interest may be at play among doctors when it comes to influencing their decisions to become involved in some manner with the provision of medical abortion services. According to Lipp (2008), studies conducted in other countries, even those with tight restrictions on abortion, have revealed that a variety of factors influence medical professionals' opinions about induced abortion. According to research (Lipp, 2008; Marshall, Gould, & Roberts, 1994; Silva, Billings, Garca & Lara, 2009), views and readiness toward abortion provision are all influenced by religious beliefs, the grounds for obtaining an abortion, such as rape or incest, and gestational age. Since doctors are more trusted cultural figures and their evidence-based attitudes about abortion could have a significant impact on public understanding and policy, attitudes toward abortion are inherent and are shaped by factors such as culture, religion, and other beliefs.

According to research, the majority of women's health specialists and primary care doctors support access to abortions (Dodge et al., 2016; Chuang et al., 2012), but much fewer of them provide abortion care (Desai, Jones & Castle, 2018; Stulberg, et al., 2011; Myran, et al., 2015), which includes referrals (Homaifar, Freedman & French, 2017; Holt et al., 2017). Evidence, however, indicates that the attitudes and views of healthcare professionals may affect how they relate to and engage their patients (Rehnström Loi, Gemzell-Danielsson, Faxelid, & Klingberg-Allvin, 2015).

The practitioner's readiness to perform abortions is influenced by their attitude toward the procedure. These opinions are influenced by human characteristics such as moral judgment, life experiences, religious convictions, the gestational age, and the grounds for seeking abortion, such as rape or incest. Access to abortion services may be hampered by the attitude

of medical professionals. According to research conducted in Uttar Pradesh in the 1990s, medical professionals frequently viewed abortion as "not right" and as a way to meet sterilization "targets" in 2002 (Ravindran, 2002). In contrast to Kerala, where the husband's approval was requested, the Abortion Assessment Project-India (AAPI) survey found that health providers in many states lacked the willingness to unconditionally provide abortion services to women arriving alone, unmarried, widowed, or divorced (Duggal & Ramachandran, 2004). In a study conducted in Maharashtra, medical students' attitudes were similar (Sjöström et al., 2014). According to numerous research among health professionals in Chhattisgarh, Meghalaya, Uttarakhand, and Kerala, a sizable part of them had a bad attitude (Banerjee, Clark, & Warvadekar, 2009; Chowdhury, 2017; Deepa, et al., 2010; Navin, et al., 2011). Furthermore, access to abortion is severely hampered by providers' inaccurate or insufficient information, particularly when it comes to more recent methods like medical abortion. A provider's stance on abortion may have a significant impact on the effectiveness of counselling, the delivery of services, and the general client-provider relationship. Strongly religious doctors who regularly attend church were less likely to perform abortions and had unfavorable opinions of the abortion law (Silva et al., 2009). According to Bandewar (2003), providers who believe that women and other relevant parties are not utilizing contraceptives may victimize women seeking abortion care.

Hanafis, one of the Pakistani Islamic groups, gave pregnant women the freedom to get an abortion if they had a good reason and without their husband's permission (Rehan, 2003). When a woman seeks MTP services, the provider's qualities matter. Compared to male clinicians, female providers are more likely and willing to offer medical abortion services. Female clinicians are therefore more likely to receive MTP requests from women since they may

exhibit empathy and a compassionate demeanor toward those seeking to end their pregnancies (Creanga, Roy, & Tsui, 2008).

Pyne and Ravindran (2020) undertook a cross-sectional study to examine the accessibility and use of medical termination of pregnancy (MTP) services as well as the opinions of public sector healthcare practitioners toward legal and safe abortion. It was conducted utilizing a facilities checklist and a validated attitude scale in a representative West Bengal district. The study's findings showed that just 11 of 42 public health institutions have educated medical personnel and the necessary tools to offer MTP services. About 40% of the 64 healthcare professionals surveyed had received MTP training. About 38 percent of respondents indicated on the attitude scale that they had a bad opinion of the provision of safe abortion services. The attitudes of healthcare professionals and the supply of MTP did not have a statistically significant relationship. But there seemed to be a covert gatekeeping procedure in place, such as requiring the husband's consent or tying MTP to acceptance of contraception. Although all public health facilities from primary health centers on up are permitted to provide abortion services, the study found that these services were not readily available in public sector facilities in one district of West Bengal (Pyne & Ravindran, 2020).

Black, Hunter, and Heasley (2001) conducted another investigation to learn more about the attitudes of Northern Irish doctors who practice obstetrics and gynecology or family planning. In 1996, questionnaires were distributed to all levels of medical professionals in Northern Ireland who practiced family planning or obstetrics. According to the study's findings, the majority of doctors said that abortion should be made both legal and available as a service. On how to accomplish this, there was no agreement. The majority of hospital doctors preferred a new law particular to Northern Ireland, whereas just 50% of family planning doctors supported importing the British Abortion Law. More than 90% of respondents supported the provision of

medical abortions under specific conditions. Who should be in charge of the service could not be decided.

Schmuhl et al.'s (2020) cross-sectional survey of all 60 doctors at the major academic medical center in a hotly debated Midwestern state also examined opinions toward abortion. The university's survey research center used a web and postal mixed-mode technique to distribute the survey to all 1,357 physician faculty members of the School of Medicine and Public Health. According to the study's findings, the majority of participants (80%) support medical abortion. While almost all doctors (94%) provide care for women who are of reproductive age, most (69%) said they had no opportunity to provide abortion care, and only 44% knew who to refer patients to for abortion care. While doctors of color and those who were very religious were less supportive, female doctors and those who thought their field of expertise applied to abortion were more supportive. Only 14% of doctors said they had ever provided any kind of abortion care, but 65% of them were willing to consult on the subject. Physicians of color and extremely religious physicians were less ready to consult, while those with relevant experience were more willing (Schmuhl et al, 2020). While the majority of doctors (63%) and the majority of abortion providers (70%) support unrestricted access to abortion, the majority also perceived relatively less support from their professional peers, indicating a pluralistic ignorance in the workplace. Despite this population's strong pro-abortion sentiments, the study found that participation in every facet of abortion care is exceptionally low (Schmuhl et al., 2020). Abortion should be accepted and integrated into mainstream medicine, and doctors from all specialties need clear training and protocols on how to recommend patients for abortion care.

Because they significantly affect both the availability and the caliber of abortion services, it is crucial to understand how healthcare providers view and feel about induced abortions.

To facilitate the adoption of medical abortion, Chong et al. (2009) conducted a study on the knowledge, attitudes, and practice of abortion among women and doctors in Armenia. In three cities in Armenia, 409 women and 99 doctors were purposefully chosen to take part in in-person interviews using structured survey tools. The study's findings showed that, despite the drugs' limited availability in Armenia, almost one in three doctors said they had used misoprostol or mifepristone plus misoprostol to end pregnancies. Doctors who refused to perform medical abortions claimed uncertainties regarding the method's effectiveness and safety or a lack of knowledge. A third of doctors expressed a strong interest in learning about medical abortion techniques. Armenian doctors and women are both interested in medical abortion as a surgical abortion alternative. Focus should be placed on educating doctors about this new technique as well as on informing women about the legality of abortion and the specifics of the medical abortion procedure.

2.5 Practice of doctors towards medical termination

The failure of healthcare professionals to provide prompt, considerate, and supportive medication abortion care may directly or indirectly contribute to maternal mortality as a result of unsafe abortions. Multiple barriers and difficulties prevent women from undergoing safe medication abortion, placing them at risk of experiencing unsafe abortion and its severe effects, including death and disability (Assifi et al., 2016). Due to factors such as inadequate physician expertise, physician perceptions of expensive medical indemnity costs, low remuneration, referral issues and related stigma, ethical considerations, and service priorities, the low number of doctors that deliver medical termination of pregnancy may therefore have an impact on women's access (Baird, 2015).

According to research done in Calabar, Nigeria, 56% of private medical professionals handled two or three cases of pregnancy termination per week (Etuk, 2003). However, Acharya and Kalyanwala's (2012) findings indicate that 90% of respondents performed an average of seven medical terminations of pregnancy each month (Acharya & Kalyanwala, 2012).

To determine the variables that influence whether doctors perform pregnancy terminations in their practices, Steinauer et al. (2008) performed a survey. Only 22% of the 5055 obstetrician-gynecologists who received board certification between 1998 and 2001 were interviewed, demonstrating that variables besides training affect whether a doctor performs abortions. To better understand the present perspectives, practices, and knowledge of doctors in Shillong about the moral and legal considerations of abortion, Ropmay et al. (2020) performed a study. Doctors working in Shillong City were given structured self-administered questionnaires containing 20 items pertinent to the study's subject. Data gathered over a year was entered into a computer and descriptively analyzed using SPSS Version 11. According to study findings, about practice, 44% of participants in the study reported performing less than five pregnancy terminations in a month. The survey found that doctors in Shillong believe abortion should be the exception rather than the rule, even though it is allowed in India. In emergency instances where the mother's or the fetus's lives are in danger, it may be wisely used.

2.6 Factors influencing the practice of medical abortion

According to Alhassan, Abdul-Rahim, and Akaabre (2016), several variables at many levels affect whether and how to end a pregnancy. Physicians are not an exception to the rule that support for medical abortion continues to be congruent with personal moral ideals notwithstanding past political motivations. When faced with an unintended pregnancy, women seek abortion and self-induce it or find providers, regardless of the law. Access to medication abortion is frequently restricted, not only by the law but also by social, religious, cultural impediments, lack of awareness, and maternal perception.

In general practice, there are obstacles to the provision of medical abortions (Dawson et al. 2017). Some general practitioners (GPs) believe that offering medical abortions is outside the scope of their practice or that they would be stigmatized for doing so, whereas others feel alone and in need of peer support and referral channels to assist in offering the service (Dawson et al. 2017; LaRoche et al. 2020). Abortion is a complicated topic having broad medical, legal, ethical, and societal ramifications. In some communities, it carries a stigma and is perceived as a murderous act (Khongji 2014). Therefore, a doctor must follow the guidelines when executing a medical abortion because breaking any of the legal requirements could result in disciplinary action or penalties. Despite having the legal right to prescribe MA, many primary care doctors nonetheless send their patients to other facilities for care (Munro et al., 2020).

Generally, the provider's religion, independent of specialty, has a significant impact on whether or not the doctor offered abortion services (Morales, 2018; Elliott et al., 2012). According to studies, 45–68% of doctors agreed that their religious or spiritual beliefs have an impact on how they practice medicine and the alternatives they give patients (Elliot et al., 2018). Both religious and non-religious physicians were more likely to support abortion if fetal abnormalities or health risks were present, whereas religious physicians believed that social issues, such as economics, unwanted pregnancies, or current family relationships, were an inappropriate reason for abortion (Morales, 2018). Support for abortion also varied depending on the circumstances. The low proportion of abortion providers may also be partially explained by institutional and private religious opposition to abortion. According to earlier research, doctors who oppose abortion for moral, religious, or other grounds are typically less willing to give abortion services (Steinauer et al., 2008; Aiyer et al., 1999). To determine the variables that influence whether doctors perform pregnancy terminations in their practices, Steinauer et al. (2008) performed a survey. Only 22% of the 5055 obstetrician-gynecologists who received board certification between 1998 and 2001 were interviewed, demonstrating that variables

besides training affect whether a doctor performs abortions. The study concluded that the availability of abortion training was positively connected with doing abortions in future practice, regardless of desire to perform abortions before residency.

The implementation of the abortion law and policy, which aims to reduce unsafe abortions in Ghana, has been hampered by challenges that have been noted by several academics in Ghana. Aniteye and Mayhew (2013) discovered that even though Ghana has a safe abortion policy, many medical professionals and facilities do not recognize the need for its execution because the idea that abortion is wrong seems to be widespread. Therefore, removing obstacles to women's access to safe abortions is a key strategy for lowering maternal mortality.

The implementation of medication abortion by nurse practitioners in Canada was the subject of a qualitative research by Carson et al., (2023). Utilizing interpretive description, data were examined. Nurse practitioners struggled with how to promote their abortion services while still maintaining their and patients' confidentiality. While some nurse practitioners continued to send patients to specialized clinics despite not offering medication abortion, others believed it to be a low-resource, straightforward service. Because they were too far from emergency services in the event of complications, some participants in rural areas felt unable to provide this service. They proposed the incorporation of medication abortion training into nurse practitioner education. A descriptive-interpretive qualitative study on medically ending pregnancies in general practice in Australia was also carried out by Dawson et al. (2017). Twenty eight semi structured interviews and one focus group discussion were conducted with 32 GPs (8 medical termination of pregnancy providers, 24 non-medical termination of pregnancy providers) in New South Wales, Australia. Interviews were recorded and transcribed verbatim. The study's findings identified three key themes: workforce requirements; demand, care, and referral for medical abortion; and scope of practice. Abortion was often considered

to be outside the purview of many general practitioners (that is a service offered by others in specialized private clinics). Some general practitioners had moral or religious objections, and others thought it was complicated to provide medical termination of pregnancy. While some doctors in general practice expressed interest in the availability of medical abortion, they were worried about stigma and the effect it would have on how their practice and the opinions of other doctors are perceived. Despite a reported variation in demand, the majority of medical abortion providers were busy but felt alone. There were issues with providing surgical abortions or referring patients to a nearby public hospital in the event of difficulties. Examining the variables influencing access to medical abortion in settings such as general practices offers knowledge that can be used to help plan and administer reproductive health care in the future. To make comprehensive abortion care more accessible, particularly for rural and low income women, the health sector needs leadership and collaboration.

CHAPTER 3

METHODS

3.1 Introduction

This section looked at the study design, location, sample size, sampling method, data collection techniques, and tools to collect data on medical abortion knowledge, attitudes and practices of Doctors at the Greater Accra Regional Hospital to provide women with medical abortion. The processing and analysis of the data was also considered here.

3.2 Study Design

This was a cross-sectional study using quantitative methods to collect and measure data on variables to determine knowledge, attitudes, and practices using a structured questionnaire. It was carried out from December 2022 to January 2023.

3.3 Study Location

The study was conducted at the Greater Accra Regional (Ridge) Hospital (GARH). The hospital is a fully networked ultra-modern 620-bed capacity hospital in the Osu-Klottey Sub-Metro of the Accra Metropolitan Area of the Greater Accra Region (GARH, 2017). The hospital provides expanded access and quality healthcare to over six million people across its catchment areas such as Cantonments, Osu, Achimota, Nima, Dzorwulu, the whole Greater Accra Region. The Hospital has specialized units, such as Blood Transfusion services, Endoscopy, Dialysis Unit, Physiotherapy, Maternal and Reproductive health and Child Health, General Surgery, Internal Medicine, General Outpatient Department, Ophthalmology, Ear Nose and Throat, as well as Laboratory. Overall, there are about 332 Doctors at the Greater Accra Regional Hospital.

3.4 Variables

The dependent variable was the practice of medical abortion. The independent variables include age, sex, religion, marital status, area of specialization, number of years of practice, knowledge of medical abortion, and attitude of doctors towards medical abortion. Table 3.1 below describes these variables and the scale for their measurements.

Table 3.1: Variables

Variable	Operational Definition	Type of Variable	Scale of Measurement
Age	Age in years at the last birthday of the respondent	Independent	Discrete
Sex	Biological Characteristics of respondents	Independent	Discrete Male Female
Religion	This is the respondent's religion	Independent	Categorical • Christianity • Islamic • Traditional • Others
Area of specialisation	Respondent's area of expertise	Independent	Categorical
Number of years of practice	Years respondent has practiced medicine	Independent	Continuous
Marital status	This describes the kind of relationship that exists between the respondent and her sexual partner	Independent	Categorical • Married • Cohabiting • Single
Knowledge of medical abortion	Low Moderate Adequate	dependent	Low Moderate Adequate
Attitude of Doctors towards medical abortion	Based on the Likert scale Not at all, A little, Somewhat, Very, Extremely	dependent	Not at all -1 A little -2 Somewhat -3 Very -4 Extremely -4
Factors influencing practice			Bivariate and multiple regression analysis were used to establish the relationship between factors influencing the practices of medical abortion amongst the doctors

3.5 Study Population

The study population consisted of doctors of all ranks working at the Greater Accra Regional Hospital from December 2022 to January 2023.

3.6 Eligibility Criteria

3.6.1 Inclusion criteria

1. All categories of doctors

3.6.2 Exclusion criteria

1. Visiting doctors
2. Doctors who were not at post during the study period
3. Doctors who were doing purely administrative work

3.7 Sample Size

The sample size of this study was calculated using the Yamane's formula:

$n = N / (1 + Ne^2)$

where N = population size

n = Sample size

The population of doctors at GARH = 332

e = alpha level, that is e = 0.05 with confidence level = 95%

The sample size is: $332 / \{1 + 332 (0.05)^2\} = 332 / 1.83 = 181.4 = 182$

The sample was increased by 20% for non-response = (0.2 * 182) = 36.4

Therefore the sample size was 182 + 36= 218

3.8 Sampling Method

The sampling process was done by consecutive sampling method. The nominal roll (number of doctors) of all the doctors in GARH was used. The structured questionnaire was

administered to doctors who met the inclusion criteria whilst excluding those who did not, in order of how they appear on the nominal roll.

3.9 Data Collection Techniques and Tools

A self-administered structured questionnaire was used to collect the data. The various departments have meeting days within the week and the doctors met and had the printed questionnaires distributed to them after a brief explanation. Two research assistants, one from the School of Public Health and another from GARH were engaged to help with the distribution and the collection of the questionnaires. Doctors who were not at the respective meetings were sought after at the various units and questionnaires were given to them. The doctors were followed up for two weeks to return the questionnaire. If after two weeks, a questionnaire was not returned, it was considered lost. A file was kept at the OPD, all filled questionnaires were picked up after the close of work by research assistant and questionnaires were distributed on their duty days. The questionnaire consisted of four parts. Part one of the questionnaire was used to collect information on the demographics such as age, sex, years of experience, and area of specialization. Part Two of the questionnaire involved questions on knowledge of medical abortion. In Ghana, abortion is defined abortion as the termination of pregnancy < 28 weeks after last normal menstrual cycle. Part Three included information on the attitude of doctors towards medical abortion. The questionnaires were coded for identification and also to ensure anonymity.

3.10 Quality Control

Research assistants were taken through the objectives of the study, ethical issues concerning the study especially, obtaining informed consent and ensuring privacy and confidentiality during and after the data collection.

3.11 Data Processing and Analysis

The data was coded, entered into the Excel spreadsheet (Microsoft Office, 2016), and, cleaned after which it was exported into STATA version 16 for analysis. Categorical variables were analyzed using frequencies and percentages while mean and standard deviation were used for continuous variables. Tables, graphs and bar charts were used to display results. Bivariate and multiple regression analysis was used to establish the relationship between factors influencing the practices of medical abortion amongst the doctors. Association between demographic characteristics and knowledge, attitude, and practice was established using the Chi-square test. The p-value was set at 95%. Knowledge scoring was done as follows: Average score of 0 – 0.4 = Low knowledge, 0.5-0.6 = Moderate Knowledge, 0.7 – 1.0 = Adequate knowledge. There were 8 questions. Each correct answer was scored 1 and the wrong answer scored zero. Maximum total score was 8, and the minimum was zero. This means that the highest mean (average) score was 1, because the mean score is the total score divided by a total number of questions, which is 8/8=1. Now the minimum mean score was o.

3.12 Pre-test of Data Collection Instrument

Pre-testing was done at the Korle-Bu Teaching Hospital which have similar doctor characteristics as those in the Greater Accra Regional Hospital. The trained research assistants administered the research instrument to doctors at Korle Bu Teaching Hospital. The pre-testing gave an idea of the average time needed to complete the questionnaire, check for inconsistencies in the data collection, ascertain the accuracy of questions, and evaluate the training received by the research assistants. Modification to the instrument was made to produce the final form which was used for the actual data collection at the Greater Accra Regional hospital.

3.13 Ethical Considerations

Ethical clearance was sought and obtained from the Ethical Review Committee of Ghana Health Service (GHS), Research and Development Division, Accra (GHS-ERC: 045/11/22). Permission was also obtained from the management of the Greater Accra Regional Hospital.

3.13.1 Voluntary participation and withdrawal

The respondents were informed that their participation in the study was voluntary and they were at liberty not to take part. They were assured that, if they decided not to take part, it would not affect them in anyway. They were informed that, even if they decided to take part, they were also at liberty not to answer any particular question they were not comfortable with and were not required to provide reasons for that. Finally, they were informed that they had the liberty to withdraw from the study at any time if they changed their mind not to continue and they did not have to provide any reason.

3.13.2 Privacy and confidentiality

The respondents were assured of confidentiality regarding the information they would provide. Their names were not taken, however, a unique code or identification number (ID) was used for identification. This unique ID is known only to the research team. The questionnaires were kept in a locked cabinet and access was restricted to the principal investigator and the supervisor. The data collected was entered into a personal computer which is password protected. They were also informed that, their names would not appear in any report that would come out from this study and that, the information gathered would be used solely for the research.

3.13.3 Risk and benefits

The participants were informed that, there would be no physical risk associated with their participation in the study since they would only be answering questions. However, there are

some questions which could be sensitive for some. They were also informed that taking part in the study would not give them any direct personal benefit. However, the findings of the study may help address medical abortion issues and policy direction toward medical abortion.

3.13.4 Compensation

Respondents were not paid for participating in the study.

3.13.5 Declaration of conflict, interest

There was no conflict of interest and the study was funded entirely by the Principal Investigator.

CHAPTER 4

RESULTS

4.1 Introduction

The findings from the data analysis of the study are shown in this chapter. It covers descriptive statistics, bivariate analysis of the independent and outcome variables, and multivariable analysis using multiple logistic regression.

4.2 Background characteristics

In all 240, questionnaires were filled and returned. Due to incomplete information, 23 questionnaires were excluded and the remaining 217 were included in the analysis. The mean (± SD) age of the respondents was 35 (± 7.67) years, with a range of 18-50 years. The highest proportion of the participants 161 (74%) were general practitioners. Also, the majority of participants 199 (92%) were Christian.

4.3 Socio-demographic Characteristics

Table 4.1: Socio-Demographic Characteristics of Participants

Variable	Frequency N=217	%
Sex of respondents		
Male	116	53.5
Female	101	46.5
Age of respondents (years)		
20 – 29	53	24.4
30 – 39	106	48.9
40 – 49	45	20.7
50 and above	13	6.0
Marital status		
Single	73	33.6
Married	131	60.4
Divorced	10	4.6
Widowed	3	1.4
Area of specialization		
General Practitioner	161	74.19
Obstetrics and Gynaecology	20	9.22
Physician	15	6.91
General Surgery	12	5.53
Child Health	3	1.38
Family Medicine	6	2.76
Grade		
House Officer	57	26.27
Medical Officer	40	18.43
Senior Medical Officer	38	17.51
Principal Medical Officer	26	11.98
Junior Resident	28	12.90
Specialist	18	8.29
Senior Specialist	10	4.61
Years of Practice (years)		
0-5	100	46.1
6-10	47	21.7
11-15	33	15.2
16 and above	37	17.1
Religion		
Christian	199	91.7
Islamic	18	8.3

4.4 Knowledge of Medical Abortion

Majority of participants 200 (92.2%) defined abortion as the termination of pregnancy < 28 weeks from the last normal menstrual cycle and 14 (6.5%) defined abortion as the termination of pregnancy < 20 weeks from the last normal menstrual cycle. Most of the participants 216 (99.5%) defined unsafe abortion as the termination of pregnancy by a person who lacks the necessary skills or in an environment that does not meet the minimum medical standard requirement or both. Most of the participants 216 (99.5%) defined safe abortion as the termination of pregnancy by a person with the necessary skills or in an environment which meets the minimum medical standard requirement or both.

Table 4.2: Definition of Abortion, safe and unsafe abortion

Definition of Medical Abortion	Frequency N=217	Percentage
Termination of pregnancy < 20 weeks from last normal menstrual cycle	14	6.5
Termination of pregnancy < 24 weeks from last normal menstrual cycle	1	0.5
Termination of pregnancy using medication before the period of viability (28 weeks)	200	92.2
Do not know	2	0.9
Definition of Unsafe abortion		
Termination of pregnancy by a person who lacks the necessary skills or in an environment which does not meet the minimum standard requirement or both	216	99.5
Do not know	1	0.5
Definition of Safe abortion		
Termination of pregnancy by a person with the necessary skills or in an environment which meets the minimum standard requirement or both	216	99.5
Do not know	1	0.5

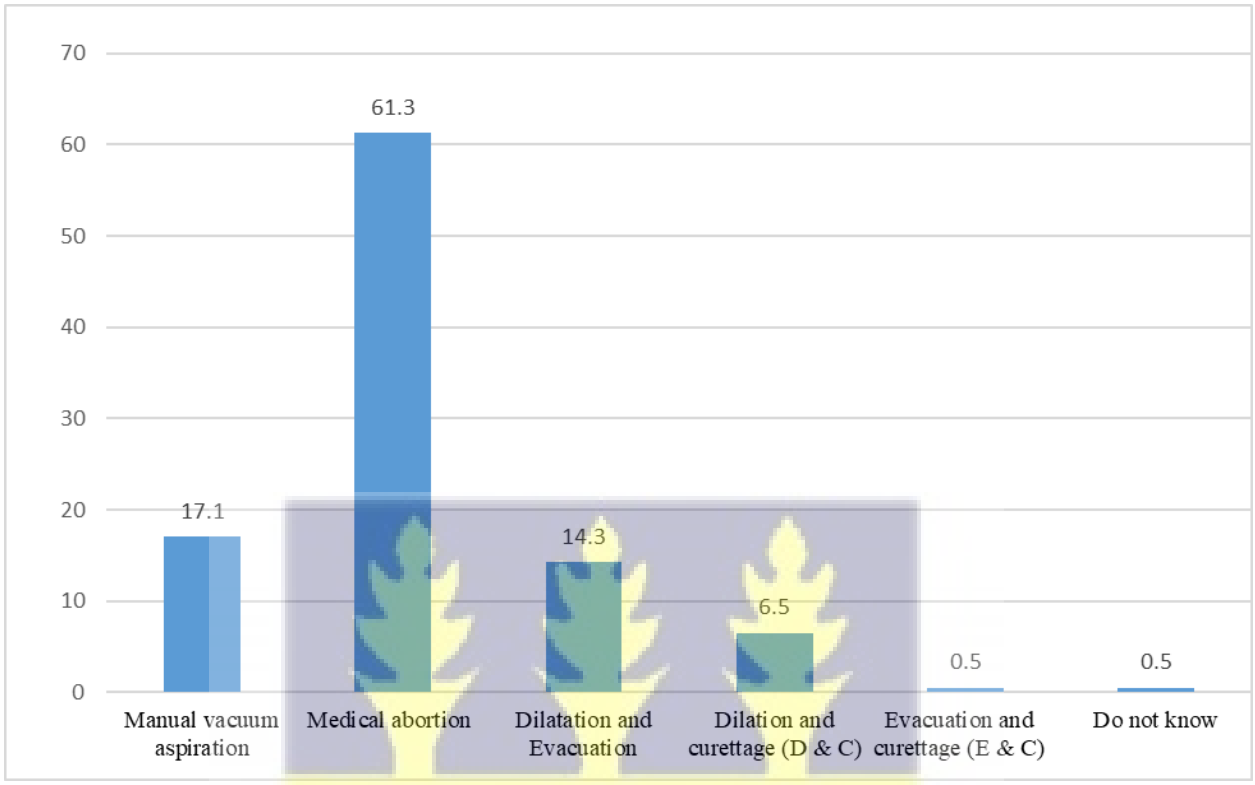

Figure 4.1: Method considered safe for termination of early pregnancy

On the methods considered safe for termination of pregnancy, 133 (61.3%) indicated medical abortion, 37 (17.1%) indicated manual vacuum aspiration and 31 (14.3%) indicated dilation and evacuation as shown in Figure 4.1. All participants representing 100% interviewed knew medical abortion involved the use of drugs to terminate pregnancy

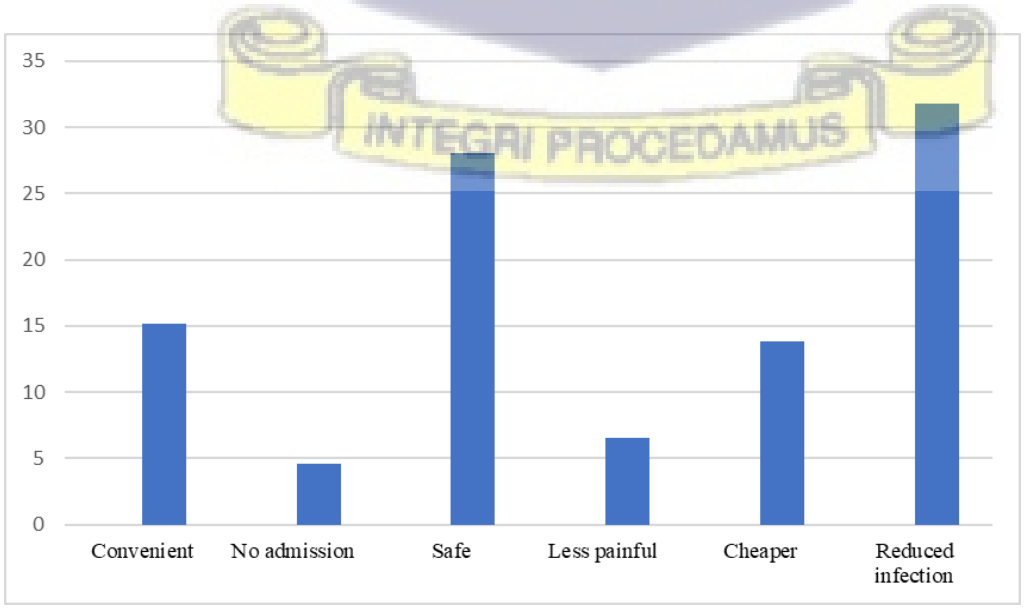

Figure 4.2: Advantages of medical abortion over surgical abortion

Regarding the advantages of medical abortion over surgical abortion, most study participants 69 (31.8%) indicated that medical abortion is associated with reduced infection, while 61 (28.1%) indicated medical abortion is safer as shown in Figure 4.2.

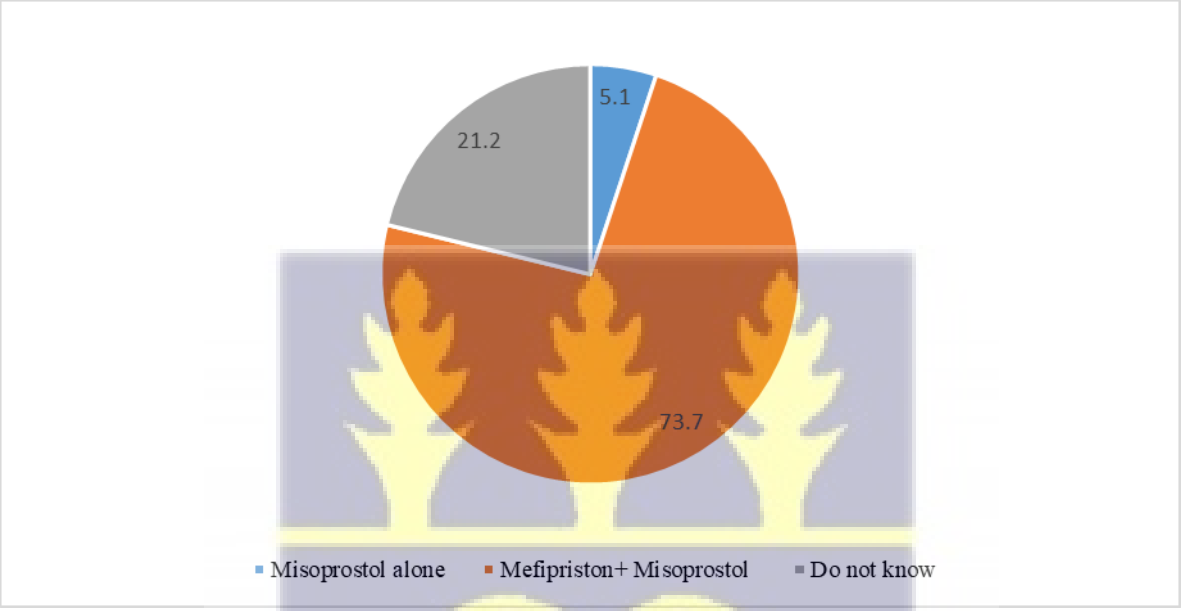

Figure 4.3: Medication used for medical abortion

The type of medication according to most of the participants 160 (73.7%) used for medical abortion is Mifepristone + Misoprostol and 46 (21.2%) of participants did not know the dosage regimen for medical abortion. Most of the participants 82 (37.8%) indicated excessive bleeding as one of the adverse effects of medical abortion. Most of participants 120 (55.3%) indicated medical abortion is effective using misoprostol alone and 38 (17.5%) participants did not know if medical abortion is effective using misoprostol alone. Most of the participants 181 (83.4%) indicated medical abortion is effective using mifepristone and misoprostol and 1 (0.5%) participant did not know if medical abortion is effective using mifepristone and misoprostol.

Table 4.3: Adverse effects, effectiveness of medical abortion using misoprostol and effectiveness of Medical abortion using Mifepristone and Misoprostol

Adverse effects of medical abortion	Frequency	Percentage
Excessive bleeding	82	37.8
Uterine rupture	35	16.1
Infection	26	12.0
Excessive pain	54	24.9
Fever	10	4.6
Retained products of conception	10	4.6
Effectiveness of Medical abortion using Misoprostol alone		
Effective	120	55.3
Not effective	59	27.2
Do not know	38	17.5
Effectiveness of Medical abortion using Mifepristone and Misoprostol		
Effective	181	83.4
Not effective	35	16.1
Do not know	1	0.5

Table 4.5 below shows the overall knowledge level of participants about medical abortion. As shown in the table, the majority of the participants (81.1%) have adequate knowledge about medical abortion, while a few (3.7%) have low knowledge about medical abortion.

Table 4.4: Level of knowledge of participants about medical abortion

Knowledge level	**Frequency**	**Percentage (%)**
Low knowledge	8	3.7
Moderate knowledge	33	15.2
Adequate knowledge	176	81.1
Total	**217**	**100**

4.5 Attitude towards Medical Abortion

Results of the study revealed that 124 (57.1%) participants do not carry out elective medical termination of pregnancy. The major reason given for not carrying out elective medical termination of pregnancy was outside of the scope of practice 59 (47.6%) and against religious practice 43 (34.7%) as shown in Figure 4.5.

Figure 4.4: Reasons for not carrying out medical abortion

Results of the study revealed that 183 (84.3%) participants were comfortable working in a health facility where elective medical abortion is carried out. Most of the participants 107 (49.3%) were indifferent when asked what their perception was of colleagues who practice medical abortion.

Table 4.5: Perception of Colleagues who practice Medical Abortion

	Frequency	Percentage
I have no problem if it is within his domain of practice	94	43.3
I am indifferent	107	49.3
It is not morally right	8	3.7
I see them as unnecessary fetal extermination	8	3.7

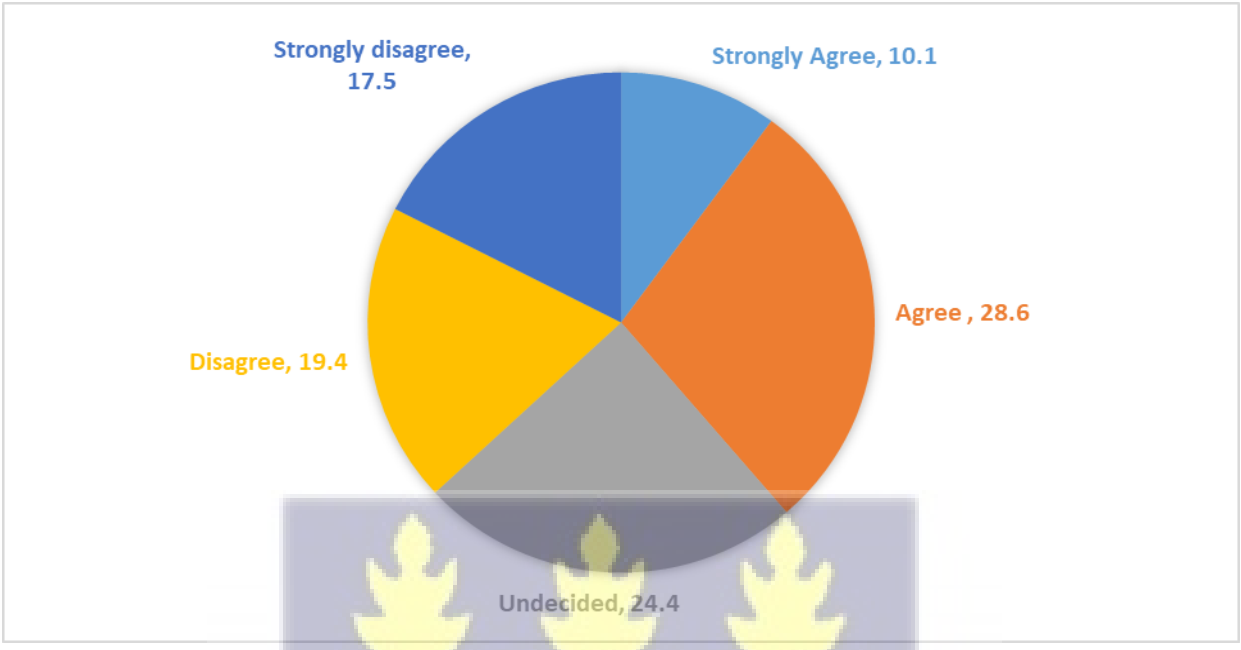

Figure 4.5: Opinion of participants whether on medical abortion to be permitted under any circumstance

About 62 (28.6%) participants agree medical abortion be permitted under any circumstance and 38 (17.5%) strongly disagree as shown in Figure 4.6. Of the participants who disagreed and strongly disagreed, the major reason was based on their religion 38 (47.5%).

Table 4.6: Reasons for participants who disagreed or strongly disagreed that medical abortion should not be permitted under any circumstance (N=80)

	Frequency	Percentage
My religion does not allow	38	47.5
Culturally not accepted	6	7.5
It is homicide on the fetus	20	25.00
Encourage unwanted pregnancies	11	13.8
Encourages pre−/extra-marital sex	5	6.3

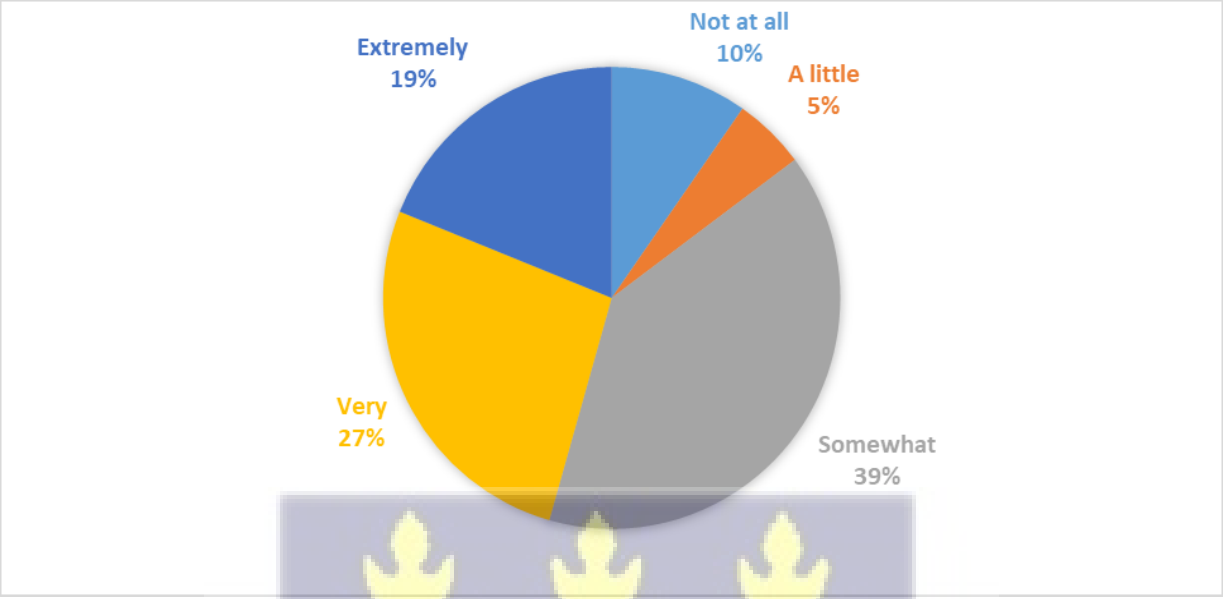

Figure 4.6: Willingness to be provide medical abortion

Most of the participants 86 (39%) were willing to be the provider of patients seeking medical abortion and 41 (19%) were extremely willing as shown in Figure 4.7. Those not willing indicated religion 15 (71.4%) as their major reason.

Table 4.7: Reasons for participants not willing to provide medical abortion (N=21)

	Frequency	Percentage
My religion does not allow	15	71.4
Culturally not accepted	4	19.1
It is homicide on the fetus	1	4.8
Against personal values	1	4.8

4.6 Factors influencing practice of MA

Table 4.8 below shows that, there was a significant difference between doctors at Greater Accra Regional Hospital who practice MA and those who do not practice MA based on age (χ^2= 30.44, p<0.0001), marital status (χ^2= 11.26, p=0.001), specialization (p<0.001), grade (p<0.001), number of years of practice (p<0.0001), comfortable working in MA facility (χ^2=8.77, p=0.003), willingness to provide evidence-based dosing regimen (χ^2=26.64,

p<0.001), experience complication while administering MA (χ^2= 20.59, p<0.001) experience of complication of MA offered by another doctor (χ^2= 30.25, p<0.001) and knowledge level about MA (p<0.001). There was however no significant difference between participants based on sex (χ^2= 0.32, p=0.571), religion (χ2= 0.12, p=0.725), and safe pregnancy termination method (p=0.598).

Table 4.8: Association between medical abortion practice and sociodemographic characteristics and participants' experience and attitude towards MA

Variable	Practice MA				Total		χ2	p-value
	No	N(%)	Yes	N(%)	N(%)			
SEX							0.32	0.571
Male	71	(55)	45	(51.1)	116	(53.5)		
Female	58	(45)	43	(48.9)	101	(46.5)		
AGE							30.44	**<0.001***
20-29	47	(36.4)	6	(6.8)	53	(24.4)		
30-39	58	(45)	48	(54.5)	106	(48.8)		
40-49	16	(12.4)	29	(33)	45	(20.7)		
50 and above	8	(6.2)	5	(5.7)	13	(6)		
MARITAL STATUS							11.26	**0.001***
Single	63	(48.8)	23	(26.1)	86	(39.6)		
Married	66	(51.2)	65	(73.9)	131	(60.4)		
SPECIALIZATION								**<0.001[a]***
General Practitioners	47	(36.4)	9	(10.2)	56	(25.8)		
Obstetrics and Gynaecology	23	(17.8)	36	(40.9)	59	(27.2)		
Physician	32	(24.8)	21	(23.9)	53	(24.4)		
General Surgery	23	(17.8)	13	(14.8)	36	(16.6)		
Child Health	3	(2.3)	0	(0)	3	(1.4)		
Family Medicine	1	(0.8)	9	(10.2)	10	(4.6)		
GRADE								**<0.001[a]***
House officer	51	(39.5)	6	(6.8)	57	(26.3)		
Medical Officer	24	(18.6)	26	(29.5)	50	(23)		
Senior Medical Officer	24	(18.6)	30	(34.1)	54	(24.9)		
Principal Medical Officer	15	(11.6)	13	(14.8)	28	(12.9)		
Junior Resident	7	(5.4)	5	(5.7)	12	(5.5)		
Specialist	5	(3.9)	3	(3.4)	8	(3.7)		
Senior Specialist	3	(2.3)	5	(5.7)	8	(3.7)		
YEARS OF PRACTICE								**<0.001[a]***
Less than 1	13	(10.1)	1	(1.1)	14	(6.5)		
1-5	63	(48.8)	23	(26.1)	86	(39.6)		
6-10	22	(17.1)	25	(28.4)	47	(21.7)		
11-15	12	(9.3)	21	(23.9)	33	(15.2)		
16 and above	19	(14.7)	18	(20.5)	37	(17.1)		
RELIGION							0.12	0.725
Christianity	119	(92.2)	80	(90.9)	199	(91.7)		
Islamic	10	(7.8)	8	(9.1)	18	(8.3)		
SAFE PREGNANCY TERMINATION METHOD								0.598[a]
Manual vacuum aspiration	22	(17.1)	15	(17)	37	(17.1)		
Medical abortion	75	(58.1)	58	(65.9)	133	(61.3)		
Dilatation and Evacuation	19	(14.7)	12	(13.6)	31	(14.3)		
Dilatation and curettage (D&C)	11	(8.5)	3	(3.4)	14	(6.5)		
Evacuation and curettage (E&C)	1	(0.8)	0	(0)	1	(0.5)		
Do not know	1	(0.8)	0	(0)	1	(0.5)		

COMFORTABLE WORKING IN MA FACILITY							8.77	**0.003***
Not comfortable	28	(21.7)	6	(6.8)	34	(15.7)		
Comfortable	101	(78.3)	82	(93)	183	(84.3)		
WILLINGNESS TO PROVIDE EVIDENCE-BASED DOSING REGIMEN							26.64	**<0.001***
Not willing	51	(39.5)	7	(8)	58	(26.7)		
Willing	78	(60.5)	81	(92)	159	(73.3)		
EXPERIENCED COMPLICATION WHILE ADMINISTERING MA							20.59	**<0.001***
No complication experienced	117	(90.7)	58	(65.9)	175	(80.6)		
Complication experienced	12	(9.3)	30	(34.1)	42	(19.4)		
EXPERIENCED COMPLICATION OF MA OFFERED BY ANOTHER DOCTOR							30.25	**<0.001***
No complication experienced	50	(38.8)	5	(5.7)	55	(25.3)		
Complication experienced	79	(61.2)	83	(94.3)	162	(74.7)		
Knowledge level of MA								<0.001[a*]
Low knowledge	8	(6.2)	0	(0.0)	8	(3.99)		
Moderate knowledge	29	(22.5)	4	(4.6)	33	(15.2)		
Adequate knowledge	92	(71.3)	84	(95.5)	176	(81.1)		

*Statistical significance, p<0.05; [a]Fisher's exact test (expected cell count<5)

Table 4.9 shows multiple logistic regression analysis of variables that showed significant association after simple logistic regression analysis. The analysis shows that, experiencing complications while administering MA was significantly associated with medical abortion. After adjusting for confounding variables, participants who experienced complications while administering MA were 5.56 times more likely to practice medical abortion compared to participants who have not experienced complication while administering MA [AOR=5.56, CI= (2.05-15.10), p value=0.001)].

Table 4.9: Multiple logistic regression analysis of factors associated Medical Abortion among participants

Variable	OR (95% CI) p-value	AOR (95% CI)	p-value
AGE:	**<0.0001***		
20-29	reference	reference	
30-39	6.48 (2.55- 16.46)	2.07(0.45-9.57)	0.352
40-49	14.20(4.99- 40.42)	6.53 (0.66-64.38)	0.108
50 and above	4.90(1.20- 19.93)	1.70(0.10-28.10)	0.711
MARITAL STATUS	**0.001***		
Single	reference	reference	
Married	2.70(1.50- 4.85)	0.92(0.40- 2.16)	0.857
GRADE	**<0.0001***		
House officer	reference	reference	
Medical Officer	9.21(3.35- 25.32)	3.76 (0.53-26.52)	0.183
Senior Medical Officer	10.63(3.90- 28.93)	3.29 (0.45- 23.94)	0.240
Principal Medical Officer	7.37(2.39- 22.71)	2.60(0.31- 21.79)	0.380
Junior Resident	6.07(1.46- 25.26)	0.75 (0.07- 7.83)	0.812
Specialist	5.10(0 .96- 26.89)	0.87 (0.06- 13.60)	
0.922			
Senior Specialist	14.17(2.67- 74.70)	1.57(0.11- 23.43)	0.744
AREA OF SPECIALIZATION	**<0.0001***		
General practitioner	reference	reference	
Obs and Gynae	8.17 (3.38-19.79)	1.30 (0.27- 6.34)	
0.742			
Physician	3.43(1.39- 8.43)	0.74(0.14-3.83)	
0.717			
General surgery	2.95(1.10- 7.91)	0.53(0.09-2.97)	
0.470			
Child health	1	1	
Family medicine	47 (5.28- 418.11)	22.26(1.18-421.18)	0.039
YEARS OF PRACTICE	**<0.001***		
Less than 1	reference	reference	
1 – 5	4.75(0.58- 38.34)	1.19 (0.09-15.23)	
0.893			
6 – 10	14.77(1.78- 122.23)	1.54 (0.10- 22.23)	
0.750			
11 - 15	22.75(2.64- 196.10)	1.42(0.08- 24.56)	
0.811			
16 and above	12.31(1.46- 104.02)	0.61 (0.02-14.32)	
0.761			
COMFORTABLE WORKING IN MA FACILITY	**0.005***		
Not comfortable	reference	reference	
Comfortable	3.79(1.50- 9.50)	1.37 (0.43-4.31)	
0.591			
EXPERIENCED COMPLICATION WHILE ADMINISTERING MA	**<0.0001***		
Not experienced complication	reference	reference	

Experienced complication	5.04(2.41- 10.57)	5.56 (2.05- 15.10)	**0.001***
EXPERIENCED COMPLICATION OF MA OFFERED BY ANOTHER DOCTOR			**<0.0001***
No experience of complication	reference	reference	
Experienced complication	10.51(3.98-27.70)	2.05(0.37- 11.26)	0.409

*Statistical significance, p<0.05, OR=Crude Odds Ratio, AOR=Adjusted Odds Ratio

CHAPTER 5

DISCUSSSION

5.1 Introduction

The objectives of this study were to assess the knowledge, attitudes and practices of medical abortion amongst doctors as well as the factors influencing the practices of medical abortion. The majority of the participants (81%) had adequate knowledge about medical abortion. Results of the study revealed that about (57%) of participants do not carry out elective medical termination of pregnancy. The major reason given for not carrying out elective early medical termination of pregnancy was outside of the scope of practice (48%) and against religious practice (35%). There was a significant difference between doctors at Greater Accra Regional Hospital who practice medical abortion and those who do not practice medical based on age, marital status, specialization, grade, and number of years of practice.

5.2 Knowledge of medical abortion among doctors

The present study revealed that most of the participants (81%) had adequate knowledge about medical abortion. In this study, the majority of participants (92%) defined medical abortion as the termination of pregnancy using medication before the period of viability (28 weeks) and the majority knew the definition of safe and unsafe abortion. A study by Assefa (2019) reported that only 72% of healthcare providers knew the definition of medical abortion, and 53% of them had sufficient knowledge of medical abortion. Results from this study on the methods considered safe for termination of pregnancy showed that (61%) indicated medical abortion, (17%) indicated manual vacuum aspiration and (14%) indicated dilation and evacuation. Another study by Ropmay (2020) revealed that the method most commonly employed for pregnancy termination in the first trimester was medical (61%), dilatation & curettage (27%), and manual vacuum aspiration (10%). This differs from the study by Etuk et al. (2003) where 36% of doctors performed dilatation & curettage, 18% did manual vacuum aspiration, and 18%

a combination of the two in the first trimester of pregnancy however none of the doctors reported using medical methods. Medical abortion may be preferred by doctors in this study owing to its safety in the early weeks of gestation

Regarding the advantages of medical abortion over surgical abortion, most study participants (32%) indicated that medical abortion is associated with reduced infection, while about (28%) indicated medical abortion is safer. According to Hu et al. (2010), medical abortion has been shown to enhance access to safe abortion and to be cost-effective. It is preferred by women who want to avoid surgery and find the method natural and private. Some previous studies comparing medical and surgical methods of abortion provision and treatment of miscarriage have argued that the cost-effectiveness of medical methods is reduced due to complications and method failure (Niinimäki, Karinen, Hartikainen & Pouta, 2009; Rausch et al., 2012). A study by Ropmay et al (2020) revealed that about (44%) of doctors interviewed had encountered complications during the conduct of medical termination of pregnancy. From the study results, it may be possible that complication rates of medical termination of pregnancy are low compared to other methods of terminating pregnancy.

As indicated by WHO (2005), Mifepristone is on the World Health Organization's list of essential medicines and is considered the gold standard for medical abortion (Dunn & Cook, 2014). Mifepristone 200 mg oral and misoprostol 800 mg buccal/vaginal/sublingual is the regimen of choice for medical abortion up to 70 days after the last menstrual period among eligible women (Costescu et al., 2016). In this study, the type of medication according to most of the participants 160 (74%) used for medical abortion is Mifepristone + Misoprostol and about 46 (21%) of participants did not know the type of medication used for medical abortion. A 2010 study among Guatemalan obstetricians and gynecologists found that 92% were aware that misoprostol can be used as an abortifacient, but only 35% knew appropriate dosing regimens (Kestler, 2012). Fiala (2003) indicated that Mifepristone-misoprostol regimens are

more effective than misoprostol alone and ultrasound can be difficult to interpret leading to unnecessary surgical interventions. A study by Sjöström et al. (2016) using a mifepristone and misoprostol regimen and a 3-week follow-up showed an overall efficacy of 98%, which is in line with WHO guidelines. Other authors also found that a combined regimen of mifepristone and misoprostol was found to be more effective in terms of lower rates of ongoing pregnancy and higher rates of successful abortion compared to the misoprostol alone regimen (Blum et al., 2012; Dahiya et al., 2012; Ngoc et al., 2011). The combination of mifepristone and misoprostol has been shown by various studies to be a safe, effective, and well-established method for the termination of pregnancy.

Most of the participants 82 (38%) indicated excessive bleeding as one of the adverse effects of medical abortion and about 54 (25%) indicated excessive pain. As designated by Goldstone, Walker & Hawtin, (2017), the complication rates from international and national data include retained products of conception requiring surgical intervention up to 5%, continuing viable pregnancy – 0.8%, upper genital tract infection requiring intravenous antibiotics – 0.1–0.2%, haemorrhage requiring transfusion – 0.1%. The WHO (2018) also added that common symptoms of medical abortion include vaginal bleeding and abdominal pain. Incomplete abortion should also be suspected upon visual examination. Complications of early medical abortion are uncommon, but important to recognize and manage appropriately.

5.3 Attitude of doctors towards medical termination

Results of the study revealed that about 124 (57%) participants do not carry out elective medical termination of pregnancy. The major reason given for not carrying out elective early medical termination of pregnancy was outside of the scope of practice 59 (48%) and against religious practice 43 (35%). Also remarkable is the fact that the majority of doctors in a study by Ropmay et al. (2020) refused to terminate unwanted pregnancies due to religious beliefs (80%), while obedience to the law was the reason for 11.6% of physicians. Onah et al. (2009)

studied the attitudes and practices of private medical practitioners towards abortion in Nigeria, where they observed religious belief as the reason for refusal in 79% of participants, and obedience to the law in 29%. Recent work by Chiweshe and Macleod using in-depth interviews with six health care providers in Harare found that providers framed women seeking abortions as transgressors of acceptable norms, irresponsible, manipulative, and ignorant, based on cultural, religious, gender, and trauma discourses that portray abortion negatively (Chiweshe, Mavuso & Macleod, 2017). Religion might affect the decision-making process related to the provision of safe abortion services. The negative views of health professionals were principally underpinned by religion and morality. Such beliefs have been widely reported in the literature (Chiweshe & Macleod, 2017; Rehnström Loi et al., 2015). Evidence shows that religious beliefs can influence views on abortion. In other studies, religious views have even been reported to influence healthcare providers' willingness to be trained in post-abortion care for fear of being labelled as pro-choice (Lamina & Lamina, 2013). In a study by Aniteye and Mayhew (2013) health-care providers across different levels of management in three hospitals in Accra, religious views were identified as key potential barriers in the provision of safe abortion care.

5.4 Factors influencing the practices of medical abortion among the doctors

There was a significant difference between doctors at Greater Accra Regional Hospital who practice medical abortion and those who do not practice medical based on age, marital status, specialization, grade, number of years of practice, comfortable working in a medical abortion facility, and experience of complication of medical offered by another doctor. There was however no significant difference between participants based on sex, religion, and safe pregnancy termination method. A study by Zahed, Nabulsi, and Tamim (2002) found that socio-demographic factors such as gender, age, marital status, religion, and the importance of religion in daily life as well as cultural differences inherent to a country determines the attitude

of the health professional's towards termination of pregnancy (Zahed, Nabulsi & Tamim, 2002). A study conducted by Balcha et al. (2022) found that factors that were significantly associated with the attitudes of the healthcare care providers toward safe abortion care were sex, ever trained on safe abortion, being familiar with current abortion law, preferring unrestricted law of safe abortion, and knowledge of safe abortion. Furthermore, there is more recent health information, as well as a rise in interest from a variety of stakeholders in giving advanced training on safe abortion care.

In a study by Balcha et al. (2022), male providers were nearly three times more likely to have a favorable attitude toward safe abortion care as compared to females. Some physicians are more likely to support abortion access than others.

5.5 Limitations of the Study

First of all, because the data were gathered from a single hospital, they cannot be extrapolated to apply to other regions of Ghana, especially given the variations in religious practices between regions. Given that abortion is a very delicate subject, in-depth interviews may give researchers more information about the factors influencing the participants' practice regarding abortion. Furthermore, getting doctors to fill out the questionnaire was difficult as most of them were having virtual meetings.

5.6 Strength of the Study

The study was carried on in a major referral and teaching hospital with great participation and a self-administered questionnaire

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Doctors generally have adequate knowledge about medical abortion. The practice of medical abortion is significantly influenced by personal, religious, and cultural beliefs. The attitude of medical doctors towards medical abortion was influenced greatly by their knowledge, religious beliefs and having received training. Those who have been trained in abortion procedures were more comfortable practicing or referring patients. General practitioners must all be trained to make safe medical abortion services available and accessible to women.

6.2 Recommendations

1. Ministry of Health (MOH) must ensure that health professionals are trained on medical abortion.
2. GARH/Ghana Health Service should embark on creating and training health workers on the abortion law and early medical abortion.
3. MOH/GARH: Stakeholder engagement regarding the provision of medical abortion in hospitals should be undertaken.

6.3 Further research

1. Similar study in other levels of health facilities or among midwives because they are also trained to perform safe abortions should be conducted.
2. A similar study can be conducted among midwives because they are also trained to perform safe abortions should be conducted.
3. Harm Reduction: Qualitative or mixed method study on medical abortion practices among major stakeholders
4. A study to determine the willingness of women to accept evidence-based knowledge on medical abortion

REFERENCES

Atakro, C. A., Addo, S. B., Aboagye, J. S., Menlah, A., Garti, I., Amoa-Gyarteng, K. G., ... & Boni, G. S. (2019). Contributing factors to unsafe abortion practices among women of reproductive age at selected district hospitals in the Ashanti region of Ghana. *BMC women's health*, *19*(1), 1-17.

Aniteye, P., O'Brien, B., & Mayhew, S. H. (2016). Stigmatized by association: challenges for abortion service providers in Ghana. *BMC health services research*, *16*(1), 1-10.

Berdzuli, N., Pestvenidze, E., Lomia, N., & Stray-Pedersen, B. (2017). A maternal death from self-induced medical abortion: a call for action. *The European Journal of Contraception & Reproductive Health Care*, *22*(5), 393-395.

Brenan, M. (2018). Nurses again outpace other professions for honesty, ethics. *Gallup. com*, *20*.

Chuang, C. H., Martenis, M. E., Parisi, S. M., Delano, R. E., Sobota, M., Nothnagle, M., & Schwarz, E. B. (2012). Contraception and abortion coverage: what do primary care physicians think?. *Contraception*, *86*(2), 153-156.

Dahlbäck, E., Maimbolwa, M., Kasonka, L., Bergström, S., & Ransjö-Arvidson, A. B. (2007). Unsafe induced abortions among adolescent girls in Lusaka. *Health care for women international*, *28*(7), 654-676.

Dawson, A., Bateson, D., Estoesta, J., & Sullivan, E. (2016). Towards comprehensive early abortion service delivery in high income countries: insights for improving universal access to abortion in Australia. *BMC health services research*, *16*(1), 1-23.

Desai, S., Jones, R. K., & Castle, K. (2018). Estimating abortion provision and abortion referrals among United States obstetrician-gynecologists in private practice. *Contraception*, *97*(4), 297-302.

Dodge, L. E., Haider, S., & Hacker, M. R. (2016). Attitudes toward abortion among providers of reproductive health care. *Women's Health Issues*, *26*(5), 511-516.

Doran, F. M., & Hornibrook, J. (2016). Barriers around access to abortion experienced by rural women in New South Wales, Australia. *Rural and remote health*, *16*(1), 1-12.

Guttmacher Institute. (2018). Abortion worldwide 2017: uneven progress and unequal access. https://www.guttmacher. org/report/abortion-worldwide-2017

Higgins, J. A., Schmuhl, N. B., Wautlet, C. K., & Rice, L. W. (2021). The importance of physician concern and expertise in increasing abortion health care access in local contexts. *American Journal of Public Health*, *111*(1), 33-36.

Kapp, N., Grossman, D., Jackson, E., Castleman, L., & Brahmi, D. (2017). A research agenda for moving early medical pregnancy termination over the counter. *BJOG: An International Journal of Obstetrics & Gynaecology*, *124*(11), 1646-1652.

Kulier, R., Kapp, N., Gülmezoglu, A. M., Hofmeyr, G. J., Cheng, L., & Campana, A. (2011). Medical methods for first trimester abortion. *Cochrane database of systematic reviews*, (11).

Harper, C. C., Blanchard, K., Grossman, D., Henderson, J. T., & Darney, P. D. (2007). Reducing maternal mortality due to elective abortion: potential impact of misoprostol in low-resource settings. *International Journal of Gynecology & Obstetrics*, *98*(1), 66-69.

Hodgson, J. E. (Ed.). (2014). *Abortion and sterilization: medical and social aspects*. Academic Press.

Holt, K., Janiak, E., McCormick, M. C., Lieberman, E., Dehlendorf, C., Kajeepeta, S., ... & Langer, A. (2017). Pregnancy options counseling and abortion referrals among US primary care physicians. *Fam Med*, *49*, 527-36.

Homaifar, N., Freedman, L., & French, V. (2017). "She's on her own": a thematic analysis of clinicians' comments on abortion referral. *Contraception*, *95*(5), 470-476.

Louie, K. S., Chong, E., Tsereteli, T., Avagyan, G., Vardanyan, S., & Winikoff, B. (2014). The introduction of first trimester medical abortion in Armenia. *Reproductive Health Matters*, *22*(sup44), 56-66.

Martin, L. A., Seewald, M., Johnson, T. R., & Harris, L. H. (2020). Trusted colleagues or incompetent hacks? Development of the attitudes about abortion-providing physicians scale. *Women's Health Issues*, *30*(1), 16-24.

Mazza, D., Burton, G., Wilson, S., Boulton, E., Fairweather, J., & Black, K. I. (2020). Medical abortion. *Australian Journal of General Practice*, *49*(6), 324-330.

Nash, E. (2019). Abortion rights in peril—what clinicians need to know. *New England Journal of Medicine*, *381*(6), 497-499.

Newhall, E. P., & Winikoff, B. (2000). Abortion with mifepristone and misoprostol: regimens, efficacy, acceptability and future directions. *American journal of obstetrics and gynecology*, *183*(2), S44-S53.

Newton, D., Bayly, C., McNamee, K., Hardiman, A., Bismark, M., Webster, A., & Keogh, L. (2016). How do women seeking abortion choose between surgical and medical abortion? Perspectives from abortion service providers. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, *56*(5), 523-529.

Riddle, J. M. (1992). *Contraception and Abortion from the Ancient World to the Renaissance*. Harvard University Press.

Stulberg, D. B., Dude, A. M., Dahlquist, I., & Curlin, F. A. (2011). Abortion provision among practicing obstetrician–gynecologists. *Obstetrics and gynecology*, *118*(3), 609.

Summit, A. K., Casey, L. M., Bennett, A. H., Karasz, A., & Gold, M. (2016). I don't want to go anywhere else": patient experiences of abortion in family medicine. *Fam Med*, *48*(1), 30-34.

Tomnay, J. E., Coelli, L., Davidson, A., Hulme-Chambers, A., Orr, C., & Hocking, J. S. (2018). Providing accessible medical abortion services in a Victorian rural community: a description and audit of service delivery and contraception follow up. *Sexual & reproductive healthcare*, *16*, 175-180.

Tylee, A., Haller, D. M., Graham, T., Churchill, R., & Sanci, L. A. (2007). Youth-friendly primary-care services: how are we doing and what more needs to be done?. *The Lancet*, *369*(9572), 1565-1573.

Van Look, P. F., & Cottingham, J. C. (2002). Unsafe abortion: an avoidable tragedy. *Best Practice & Research Clinical Obstetrics & Gynaecology*, *16*(2), 205-220.

Virk, J., Zhang, J., & Olsen, J. (2007). Medical abortion and the risk of subsequent adverse pregnancy outcomes. *New England Journal of Medicine*, *357*(7), 648-653.

Von Hertzen, H., Honkanen, H., Piaggio, G., Bartfai, G., Erdenetungalag, R., Gemzell-Danielsson, K., ... & WHO Research Group on Post-Ovulatory Methods for Fertility Regulation. (2003). WHO multinational study of three misoprostol regimens after mifepristone for early medical abortion. I: Efficacy. *BJOG: an international journal of obstetrics and gynaecology*, *110*(9), 808-818.

World Health Organization (WHO). (2018). Medical management of abortion (Licence: CC BY-NC-SA 3.0 IGO. Geneva, Switzerland: WHO.

Wells, E., Coeytaux, F., Azasi, E., Danmusa, S., Geressu, T., McNally, T., ... & Tibebu, S. (2016). Evaluation of different models of access to misoprostol at the community level to improve maternal health outcomes in Ethiopia, Ghana, and Nigeria. *International Journal of Gynecology & Obstetrics*, *133*(3), 261-265.

Dodge, L. E., Haider, S., & Hacker, M. R. (2016). Attitudes toward abortion among providers of reproductive health care. *Women's Health Issues*, *26*(5), 511-516.

Harries, J., Stinson, K., & Orner, P. (2009). Health care providers' attitudes towards termination of pregnancy: A qualitative study in South Africa. *BMC public health*, *9*(1), 1-11.

Loi, U. R., Gemzell-Danielsson, K., Faxelid, E., & Klingberg-Allvin, M. (2015). Health care providers' perceptions of and attitudes towards induced abortions in sub-Saharan Africa and Southeast Asia: a systematic literature review of qualitative and quantitative data. *BMC public health*, *15*(1), 1-13.

Onah, H. E., Ogbuokiri, C. M., Obi, S. N., & Oguanuo, T. C. (2009). Knowledge, attitude and practice of private medical practitioners towards abortion and post-abortion care in Enugu, south-eastern Nigeria. *Journal of obstetrics and gynaecology*, *29*(5), 415-418.

Turner, K. L. & Chapman, K. (2008). Abortion attitude transformation: a values clarification toolkit for global audiences**.**

Ganatra, B., Tuncalp, O., Johnston, H. B., Johnson Jr, B. R., Gulmezoglu, A. M., & Temmerman, M. (2014). From concept to measurement: operationalizing WHO's definition of unsafe abortion. *Bulletin of the World Health Organization*, *92*, 155-155.

Haddad, L. B., & Nour, N. M. (2009). Unsafe abortion: unnecessary maternal mortality. *Reviews in obstetrics and gynecology*, *2*(2), 122.

Kapp, N., & Lohr, P. A. (2020). Modern methods to induce abortion: Safety, efficacy and choice. *Best Practice & Research Clinical Obstetrics & Gynaecology*, *63*, 37-44.

Moseson, H., Herold, S., Filippa, S., Barr-Walker, J., Baum, S. E., & Gerdts, C. (2020). Self-managed abortion: a systematic scoping review. *Best practice & research Clinical obstetrics & gynaecology*, *63*, 87-110.

Ganatra, B., Gerdts, C., Rossier, C., Johnson Jr, B. R., Tunçalp, Ö., Assifi, A., ... & Alkema, L. (2017). Global, regional, and subregional classification of abortions by safety, 2010–14: estimates from a Bayesian hierarchical model. *The Lancet*, *390*(10110), 2372-2381.

Singh, S., & Maddow-Zimet, I. (2016). Facility-based treatment for medical complications resulting from unsafe pregnancy termination in the developing world, 2012: a review of evidence from 26 countries. *BJOG: An International Journal of Obstetrics & Gynaecology*, *123*(9), 1489-1498.

Salifu, M. G., & Mohammed, K. (2020). Prevalence and Predictors of Contraceptives Use among Women Aged (15–49 years) with Induced Abortion History in Ghana. *Advances in Preventive Medicine*, *2020*.

Adisah-Atta, I., & Dim, E. E. (2019). Justification of abortion in West Africa and interplay of sociodemographic predictors: A comparative study of Ghana and Nigeria. *SAGE Open*, *9*(1), 2158244019834368.

Morhee, R. A. S., & Morhee, E. S. K. (2006). Overview of the law and availability of abortion services in Ghana. *Ghana medical journal*, *40*(3).

Appiah-Agyekum, N. N. (2018). Medical abortions among university students in Ghana: implications for reproductive health education and management. *International journal of women's health*, *10*, 515.

Rominski, S. D., Lori, J. R., & Morhe, E. S. (2017). "My friend who bought it for me, she has had an abortion before." The influence of Ghanaian women's social networks in determining the pathway to induced abortion. *Journal of Family Planning and Reproductive Health Care*, *43*(3), 216-221.

Kyilleh, J. M., Tabong, P. T. N., & Konlaan, B. B. (2018). Adolescents' reproductive health knowledge, choices and factors affecting reproductive health choices: a qualitative study in the West Gonja District in Northern region, Ghana. *BMC international health and human rights*, *18*(1), 1-12.

World Health Organisation. (2019). Preventing unsafe abortion. https://www.who.int/news-room/fact-sheets/detail/preventing-unsafe-abortion

Acharya, R., & Kalyanwala, S. (2012). Knowledge, attitudes, and practices of certified providers of medical abortion: evidence from Bihar and Maharashtra, India. *International Journal of Gynecology & Obstetrics*, *118*, S40-S46.

Assefa, E. M. (2019). Knowledge, attitude and practice (KAP) of health providers towards safe abortion provision in Addis Ababa health centers. *BMC women's health*, *19*(1), 1-10.

Assifi, A. R., Berger, B., Tunçalp, Ö., Khosla, R., & Ganatra, B. (2016). Women's awareness and knowledge of abortion laws: A systematic review. *PloS one*, *11*(3), e0152224.

Banerjee, S. K., Andersen, K. L., Buchanan, R. M., & Warvadekar, J. (2012). Woman-centered research on access to safe abortion services and implications for behavioral change communication interventions: a cross-sectional study of women in Bihar and Jharkhand, India. *BMC Public Health*, *12*(1), 1-13.

Chiweshe, M., Mavuso, J., & Macleod, C. (2017). Reproductive justice in context: South African and Zimbabwean women's narratives of their abortion decision. *Feminism & Psychology*, *27*(2), 203-224.

Costescu, D., Guilbert, E., Bernardin, J., Black, A., Dunn, S., Fitzsimmons, B., ... & Wiebe, E. (2016). Medical abortion. *Journal of Obstetrics and Gynaecology Canada*, *38*(4), 366-389.

Dodge, L. E., Haider, S., & Hacker, M. R. (2016). Attitudes toward abortion among providers of reproductive health care. *Women's Health Issues*, *26*(5), 511-516.

Dunn, S., & Cook, R. (2014). Medical abortion in Canada: behind the times. *CMAJ*, *186*(1), 13-14.

García-Núñez, N. N., Atienzo, E. E., Dayananda, I., & Walker, D. (2013). Legislation, knowledge and attitudes of health professionals in Mexico regarding abortion. *Salud colectiva*, *9*(2), 235-246.

Ganatra, B., Tuncalp, O., Johnston, H. B., Johnson Jr, B. R., Gulmezoglu, A. M., & Temmerman, M. (2014). From concept to measurement: operationalizing WHO's definition of unsafe abortion. *Bulletin of the World Health Organization*, *92*, 155-155.

Grimes, D. A., Benson, J., Singh, S., Romero, M., Ganatra, B., Okonofua, F. E., & Shah, I. H. (2006). Unsafe abortion: the preventable pandemic. *The lancet*, *368*(9550), 1908-1919.

Jones, R. K., & Henshaw, S. K. (2002). Mifepristone for early medical abortion: experiences in France, Great Britain and Sweden. *Perspectives on sexual and reproductive health*, *34*(3), 154-161.

Madziyire, M. G., Moore, A., Riley, T., Sully, E., & Chipato, T. (2019). Knowledge and attitudes towards abortion from health care providers and abortion experts in Zimbabwe: a cross sectional study. *The Pan African Medical Journal*, *34*.

Ngo, T. D., Free, C., Le, H. T., Edwards, P., Pham, K. H., Nguyen, Y. B., & Nguyen, T. H. (2014). Knowledge and provision practices regarding medical abortion among public providers in Hanoi, Khanh Hoa, and Ho Chi Minh City, Vietnam. *International Journal of Gynecology & Obstetrics*, *124*(3), 216-221.

Oppong-Darko, P., Amponsa-Achiano, K., & Darj, E. (2017). "I Am Ready and Willing to Provide the Service… Though My Religion Frowns on Abortion"—Ghanaian Midwives' Mixed Attitudes to Abortion Services: A Qualitative Study. *International Journal of Environmental Research and Public Health*, *14*(12), 1501.

Puri, M. C., Harper, C. C., Maharjan, D., Blum, M., & Rocca, C. H. (2018). Pharmacy access to medical abortion from trained providers and post-abortion contraception in Nepal. *International Journal of Gynecology & Obstetrics*, *143*(2), 211-216.

Ramos, S., Romero, M., & Ramón Michel, A. (2014). Health care providers' opinions on abortion: a study for the implementation of the legal abortion public policy in the Province of Santa Fe, Argentina. *Reproductive health*, *11*(1), 1-10.

Thakur, A., Dabar, D., Mangal, A., Daral, S., Yadav, V., & Raut, D. K. (2020). Perceptions and Practices of Married Women Regarding Medical Abortion in an Urbanized Village of South Delhi, India. *International Journal of Medicine and Public Health*, *10*(1).

Woldetsadik, M. A., Sendekie, T. Y., White, M. T., & Zegeye, D. T. (2011). Client preferences and acceptability for medical abortion and MVA as early pregnancy termination method in Northwest Ethiopia. *Reproductive health*, *8*(1), 1-5.

World Health Organization (2005). WHO model lists of essential medicines. https://www.who.int/medicines/publications/essentialmedicines/en/.

World Health Organization. (2012). *Safe abortion: technical and policy guidance for health systems*. World Health Organization.

Royal College of Obstetricians and Gynaecologists. (2004). The care of women requesting induced abortion. London: Royal College of Obstetricians and Gynaecologists.

World Health Organization. (2004). Unsafe Abortion: global estimates of the incidence of unsafe abortion and associated mortality in 2000. 4th ed. Geneva: World Health Organization.

Karim, S. M. M. (1971). Once-a-month vaginal administration of prostaglandins E2 and F2α for fertility control. *Contraception*, *3*(3), 173-183.

Karim, S. M. M. (1970). Use of prostaglandin E2 in the management of missed abortion, missed labour, and hydatidiform mole. *Br Med J*, *3*(5716), 196-197.

Karim, S. M. M., Rao, B., Ratnam, S. S., Prasad, R. N. V., Wong, Y. M., & Ilancheran, A. (1977). Termination of early pregnancy (menstrual induction) with 16-phenoxy-ω-tetranor PGE2 methylsulfonylamide. *Contraception*, *16*(4), 377-381.

Rehnström Loi, U., Gemzell-Danielsson, K., Faxelid, E., & Klingberg-Allvin, M. (2015). Health care providers' perceptions of and attitudes towards induced abortions in sub-Saharan Africa and Southeast Asia: a systematic literature review of qualitative and quantitative data. *BMC Public Health*, *15*(1), 1-13.

Bandewar, S. (2003). Abortion Services and Providers' Perceptions: Gender Dimensions. *Economic and Political Weekly*, 2075-2081.

Banerjee, S. K., Clark, K. A., & Warvadekar, J. (2009). Results of a Government and NGO partnership for provision of safe abortion services in Uttarakhand, India. *New Delhi, India: Ipas India*.

Chowdhury, S. (2017). Developing a scale to measure obstetric and gynaecology professionals' attitudes towards Medical Termination of Pregnancy and Emergency Contraception Services, Kerala, India. *Journal of Health Management*, *19*(2), 304-319.

Chuang, C. H., Martenis, M. E., Parisi, S. M., Delano, R. E., Sobota, M., Nothnagle, M., & Schwarz, E. B. (2012). Contraception and abortion coverage: what do primary care physicians think?. *Contraception*, *86*(2), 153-156.

Creanga, A. A., Roy, P., & Tsui, A. O. (2008). Characteristics of abortion service providers in two northern Indian states. *Contraception*, *78*(6), 500-506.

Deepa, N., Gulati, S., Wavadekar, J., & Banarjee, S. K. (2010). Improving comprehensive abortion care services in Chhattisgarh through state Government-Ipas partnership: A facility baseline assessment. *New Delhi, India: Ipas India*.

Desai, S., Jones, R. K., & Castle, K. (2018). Estimating abortion provision and abortion referrals among United States obstetrician-gynecologists in private practice. *Contraception*, *97*(4), 297-302.

Dodge, L. E., Haider, S., & Hacker, M. R. (2016). Attitudes toward abortion among providers of reproductive health care. *Women's Health Issues*, *26*(5), 511-516.

Duggal, R., & Ramachandran, V. (2004). The abortion assessment project—India: key findings and recommendations. *Reproductive health matters*, *12*(sup24), 122-129.

Holt, K., Janiak, E., McCormick, M. C., Lieberman, E., Dehlendorf, C., Kajeepeta, S., ... & Langer, A. (2017). Pregnancy options counseling and abortion referrals among US primary care physicians. *Fam Med*, *49*, 527-36.

Homaifar, N., Freedman, L., & French, V. (2017). "She's on her own": a thematic analysis of clinicians' comments on abortion referral. *Contraception*, *95*(5), 470-476.

Lipp, A. (2008). A review of termination of pregnancy: prevalent health care professional attitudes and ways of influencing them. *Journal of Clinical Nursing*, *17*(13), 1683-1688.

Marshall, S. L., Gould, D., & Roberts, J. (1994). Nurses' attitudes towards termination of pregnancy. *Journal of Advanced Nursing*, *20*(3), 567-576.

Myran, D. T., Carew, C. L., Tang, J., Whyte, H., & Fisher, W. A. (2015). Medical students' intentions to seek abortion training and to provide abortion services in future practice. *Journal of obstetrics and gynaecology Canada*, *37*(3), 236-244.

Navin, D., Gulati, S., Warvadekar, J., & Banerjee, S. K. (2011). Improving Comprehensive Abortion Care Services in Chhattisgarh through State Government-Ipas Partnership-A Facility Baseline Assessment, 2010. *New Delhi, India: Ipas*.

Pyne, S., & Ravindran, T. K. S. (2020). Availability, Utilization, and Health Providers' Attitudes Towards Safe Abortion Services in Public Health Facilities of a District in West Bengal, India. *Women's Health Reports*, *1*(1), 80-88.

Ravindran, T. K. S. (2002). Gender Gaps in Research on Abortion in India: A critical review of selected studies. *The Gender and Reproductive Health Research Initiative. CREA. New Delhi*, 1-28.

Rehan, N. (2003). Attitudes of health care providers to induced abortion in Pakistan. *Consultant*, *4*, 3-5.

Schmuhl, N. B., Rice, L. W., Wautlet, C. K., & Higgins, J. A. (2020). Physician attitudes about abortion at a Midwestern academic medical center. *medRxiv*.

Stulberg, D. B., Dude, A. M., Dahlquist, I., & Curlin, F. A. (2011). Abortion provision among practicing obstetrician–gynecologists. *Obstetrics and gynecology*, *118*(3), 609.

Silva, M., Billings, D. L., García, S. G., & Lara, D. (2009). Physicians' agreement with and willingness to provide abortion services in the case of pregnancy from rape in Mexico. *Contraception*, *79*(1), 56-64.

Sjöström, S., Essén, B., Sydén, F., Gemzell-Danielsson, K., & Klingberg-Allvin, M. (2014). Medical students' attitudes and perceptions on abortion: a cross-sectional survey among medical interns in Maharastra, India. *Contraception*, *90*(1), 42-46.

Acharya, R., & Kalyanwala, S. (2012). Knowledge, attitudes, and practices of certified providers of medical abortion: evidence from Bihar and Maharashtra, India. *International Journal of Gynecology & Obstetrics*, *118*, S40-S46.

Alhassan, A. Y., Abdul-Rahim, A., & Akaabre, P. B. (2016). Knowledge, awareness and perceptions of females on clandestine abortion in Kintampo North Municipality, Ghana. *European Scientific Journal*, *12*(12).

Khongji, P. (2014). Determinants and trends of ideal family size in a matrilineal set-up.

Etuk, S. J., Ebong, I. F., & Okonofua, F. E. (2003). Knowledge, attitude and practice of private medical practitioners in Calabar towards post-abortion care. *African journal of reproductive health*, 55-64.

Munro, S., Guilbert, E., Wagner, M. S., Wilcox, E. S., Devane, C., Dunn, S., ... & Norman, W. V. (2020). Perspectives among Canadian physicians on factors influencing implementation of mifepristone medical abortion: a national qualitative study. *The Annals of Family Medicine*, *18*(5), 413-421.

Morales, R. E. (2018). *Predictors of Medical Students' Attitudes Towards Abortion and Their Changes Overtime*. Old Dominion University.

Elliott, R. L., Chowdhury, M., Wilson, L., & Dane, F. C. (2012). Does religion affect medical students' attitudes tovvard ethical dilemmas?

Steinauer, J., Landy, U., Filippone, H., Laube, D., Darney, P. D., & Jackson, R. A. (2008). Predictors of abortion provision among practicing obstetrician-gynecologists: a national survey. *American journal of obstetrics and gynecology*, *198*(1), 39-e1.

Aiyer, A. N., Ruiz, G., Steinman, A., & Ho, G. Y. (1999). Influence of physician attitudes on willingness to perform abortion. *Obstetrics & Gynecology*, *93*(4), 576-580.

Aniteye, P., & Mayhew, S. H. (2013). Shaping legal abortion provision in Ghana: using policy theory to understand provider-related obstacles to policy implementation. *Health Research Policy and Systems*, *11*, 1-14.

Carson, A., Stirling-Cameron, E., Paynter, M., Munro, S., Norman, W. V., Kilpatrick, K., ... & Martin-Misener, R. (2023). Barriers and enablers to nurse practitioner implementation of medication abortion in Canada: A qualitative study. *Plos one*, *18*(1), e0280757.

Dawson, A. J., Nicolls, R., Bateson, D., Doab, A., Estoesta, J., Brassil, A., & Sullivan, E. A. (2017). Medical termination of pregnancy in general practice in Australia: a descriptive-interpretive qualitative study. *Reproductive health*, *14*(1), 1-13.

Assifi, A. R., Berger, B., Tunçalp, Ö., Khosla, R., & Ganatra, B. (2016). Women's awareness and knowledge of abortion laws: A systematic review. *PloS one*, *11*(3), e0152224.

Baird, B. (2015). Medical abortion in Australia: a short history. *Reproductive Health Matters*, *23*(46), 169-176.

APPENDICES

Appendix 1: Questionnaire

I am post-graduate student at the School of Public Health, University of Ghana, and conducting research on the topic: Medical abortion: attitudes and practices of medical abortion amongst doctors at the Greater Accra Regional Hospital. The goal of this research is to find out the attitudes and practices of medication abortion amongst doctors at the Greater Accra Regional Hospital. I would like to request your participation in this study. Participation in this study is **voluntary and withdrawal would not affect your health care**. The information that will be given shall be treated with confidentiality and for academic purposes. **Confidentiality of the answers given is assured**. The answers will be kept under lock and key and only used for the intended purpose. Thank you very much for your participation.

Date		Interviewer	
Participant ID			
DEMOGRAPHIC CHARACTERISTICS (PART 1)			
1. What is your sex?	Male	Female	
2. What was your age at your last birthday?			
3. What is your marital status? a) Single ( ) b) Married ( ) c) Divorced ( ) d) Widow(er) ( ) e) Other (Specify)……			
4. Area of specialization? 1. General Practitioner 2. Obstetrics and Gynaecology 3. Physician 4. General Surgery 5. Child Health 6. Public Health			

7. Family Medicine
8. Others (Please specify)

5. Grade of doctor

a) House officer
b) Medical Officer
c) Senior Medical officer
d) Principal Medical Officer
e) Junior resident
f) Specialist
g) Senior Specialist
h) Consultant
i) Senior Consultant
j) Others (Please Specify)

6. Number of years of practice

7. What is your religion?

a) Christianity ( )
b) Islamic ( )
c) Traditional ( )
d) Other (Please specify)……

KNOWLEDGE OF MEDICAL ABORTION (PART 11)

1. Definition of abortion in Ghana

a) Termination of pregnancy < 20 weeks from last normal menstrual cycle ( )
b) Termination of pregnancy < 24 weeks from last normal menstrual cycle ( )
c) Termination of pregnancy < 28 weeks from last normal menstrual cycle ( )
d) I do not know ( )

2. What is unsafe abortion?

3. What is safe abortion?

4. What Method(s)/procedure(s) are considered safe for termination of early pregnancy (select the best answer)

a) Manual vacuum aspiration ( )
b) Medical abortion ( )
c) Dilatation and Evacuation ( )

d) Dilation and curettage (D & C) ( )
e) Evacuation and curettage (E & C) ( )
f) Don't know any

5. What does medical abortion involve?

6. What are the advantages of medical abortion over surgical abortion?

7. Gestational age limit for medical abortion according to national guidelines?

a) 28 weeks
b) 24 weeks
c) 20 weeks
d) 18 weeks
e) 12 weeks

8. What dosage regimen is used for early medical abortion?

9. Adverse effects of medical abortion?

a) Excessive bleeding
b) Uterine rupture
c) Infection
d) Excessive pain
e) Fever
f) Others (Please specify)

10. What is the effectiveness of medical abortion using Misoprostol alone?

11. What is the effect of medical abortion using Mifepristone followed by Misoprostol?

12. What are the advantages of physician-led supervision of medical abortion over client acquisition of medical abortion services from people who are not physicians?

13. Briefly explain what you know about Ghana's abortion law.

ATTITUDE TOWARDS MEDICAL ABORTION (PART III)

1. Are you comfortable working in a health facility where elective medical abortion is performed?

Yes ( ) No ( )

2. Do you carry out elective early medical termination of pregnancy?

Yes ( ) No. ( )

3. If the answer to the question above is No, reasons why I do not practice medical abortion?

a) Outside of the scope of my practice
b) Against my religious practice
c) Against my personal values
d) I did not have the opportunity to be trained in abortion technique
e) I do not know
f) Other (Please specify)

4. What will be your perception of a colleague who provides elective early medical abortion?

a) I have no problem if it is within his domain of practice
b) I do not like colleagues who provide medical abortion with medical indication
c) I am indifferent
d) It is not morally right
e) I see them as unnecessary fetal extermination
f) Other (please specify)……

6. Medical abortion should be permitted under any circumstances

Strongly agree ( ) Agree ( ) Undecided ( ) Disagree ( ) Strongly disagree ( )

7. If the answer to the above question (6) is disagree or strongly disagree, what are the reasons?

(choose all that apply)

a) My religion does not allow
b) Culturally not accepted
c) It is homicide on the fetus
d) Encourage unwanted pregnancies
e) Encourages pre−/extra-marital sex
f) Other (Please specify)……..

8. How willing would you be to be a provider in the care of any patient seeking medical abortion?

Not at all ( ) A little ( ) Somewhat ( ) Very ( ) Extremely ( )

9. If the answer to the above question (8) is Not at all, what are the reasons?

a) My religion does not allow
b) Culturally not accepted
c) It is homicide on the fetus
d) Encourage to have unwanted pregnancies
e) Encourages pre−/extra-marital sex
f) Other (Please specify)……

10. Will you provide an appropriate evidence-based dosing regimen for women seeking abortion so they could administer on their own?

Not at all ( ) A little ( ) Somewhat ( ) Very ( ) Extremely ( )

THANK YOU

Appendix 2: Respondent Information Sheet

General information

Project Title: **KNOWLEDGE, ATTITUDES AND PRACTICES OF MEDICAL ABORTION AMONGST DOCTORS AT THE GREATER ACCRA REGIONAL HOSPITAL**

I am ……. (interviewer), a student of the Population, Family & Reproductive Health, University of Ghana Legon pursuing a Master of Public Health Degree Programme. I am here with my research assistants to carry out a survey to find out the knowledge, attitudes and practices of medical abortion amongst doctors at the Greater Accra Regional Hospital. This is purely for academic purposes and forms part of the requirement for the award of Master of Public Health Degree. The researcher has no conflict of interest in this study.

Procedure

The study will involve answering questions from a questionnaire about knowledge, attitudes and practices of medical abortion amongst doctors at the Greater Accra Regional Hospital. The information you provide will add to knowledge and inform policy about medical abortion.

Benefits and Risks

There will be no direct benefit to you from the study. There will be no monetary or material compensation for the study. Some questions are sensitive and embarrassing which constitute some form of risk. I am always available to assist with any questions.

Confidentiality

No name will be recorded. Your name and identity are not needed in the study. However, the information you are going to provide will be coded and will be treated strictly confidential. You are assured of total confidentiality to the information you will give. Apart from the researcher and supervisor of this research, no one else will have access to information provided whether in part or whole. Data collected will be stored under lock and key then destroyed after a minimum of three years as per research protocol.

Right to refuse

Participation in this study is voluntary. You are free to answer part or the entire questionnaire. You can choose to withdraw from the study or stop the interview at any time you want. You can also choose not to answer any question(s) you find uncomfortable about. Should you choose not to participate, it will not affect you or your hospital in any way. However, you are encouraged to participate fully in this study to help understand knowledge, attitudes and practices of medical abortion amongst doctors at the Greater Accra Regional Hospital.

Dissemination of results

Findings and recommendations would be available at the School of Public Health and it will also be disseminated through a meeting with different stakeholders at the end of the study.

Before Taking Consent

Do you have any questions you wish to ask about the study? Yes/No

If yes, please indicate the questions below

……

……

……

If you have any question(s) or further clarification concerning this study and/or the conduct of the researcher and research assistants, please do not hesitate to contact the following;

Ackon Alex (M.D.), School of Public Health, University of Ghana, Legon lexicouk@gmail.com. Tel: 0244878618; Dr. Ernest Maya, School of Public Health, University of Ghana, emaya@ug.edu.gh; Nana Abena Apatu, GHS ERC Administrator. Tel: 0503539896, ethics.research@ghs.gov.gh

Appendix 3: Consent Form

STUDY TITLE: **KNOWLEDGE, ATTITUDES AND PRACTICES OF MEDICAL ABORTION AMONGST DOCTORS AT THE GREATER ACCRA REGIONAL HOSPITAL.**

PARTICIPANTS' STATEMENT

I acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and all questions satisfactorily explained to me in a language I understand (*English*). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name of Participant……..

Participants' Signature ……...OR Thumb Print……

Date:……

STATEMENT OF WITNESS

I was present when the purpose and contents of the Participant Information Sheet were read and explained satisfactorily to the participant in the language he/she understood (….*name of language*)

I confirm that he/she was allowed to ask questions/seek clarifications and same were duly answered to his/her satisfaction before voluntarily agreeing to be part of the research.

Name:……

Signature…….... OR Thumb Print …….....

Date:……

INVESTIGATOR STATEMENT AND SIGNATURE

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name…….

Signature …….

Date…….