

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

**FACTORS INFLUENCING EMERGENCY CONTRACEPTIVE
PRESCRIPTION AMONG HEALTHCARE PROVIDERS IN THE
ACCRA METROPOLIS**

BY

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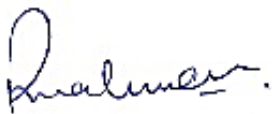
DECEMBER, 2018

DECLARATION

I, Yvonne P.D.D Coleman, the author of this dissertation, do hereby declare that except for references to the literature and works of other researchers, which have been duly cited, in this dissertation the work is the result of my original work.


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DEDICATION

I dedicate this dissertation to my husband, Dr Jerry Coleman, the children, Leroy, Othniel, and Cherie, my mum Sheila Okyne and Elizabeth my adopted daughter.

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Firstly, I thank the Almighty God for seeing me through the completion of this dissertation and for his wisdom and guidance throughout my studies in the school of Public Health.

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ABSTRACT

Introduction

Emergency contraceptive pills (ECP) are one amongst the thirteen essential commodities self-addressed by the United Nations Commission on Life-Saving Commodities for ladies and youngsters. Several studies have shown that inadequate provider knowledge is an important barrier to EC provision and use in a range of settings. This study therefore sought to examine the factors influencing emergency contraceptive prescription among health providers in the Accra Metropolis.

Methodology

The study employed a mixed method approach. The quantitative part was a cross sectional study involving 300 participants selected using proportional quota sampling technique. In addition, 12 participants were purposively selected and interviewed for the qualitative section of the study. Both structured questionnaire and an interview guide were used to obtain information from the participants. The quantitative data was analyzed using STATA (version 13.0). Univariate analysis presented proportions of demographic characteristics, knowledge, perception, attitude and barriers to EC dispensing. Bivariate analysis presented associations between explanatory variables (age, educational level, sex, ethnicity and marital status) and outcome variables (knowledge, perception, attitude and barriers). Binary logistic regression was used to identify factors influencing EC dispensing. The qualitative data was analyzed using inductive thematic analysis.

Results

More than half of the providers 217 (72.3%) did not agree that the correct time for initiation of Progesterone. Contraceptive is 120 hours. Close to half of the providers 144 (48.0%) reported that POEC should be repeated if a woman vomits within two hours. About two-thirds (68%) of the providers in this study had adequate knowledge of EC while 32%

did not have adequate knowledge of EC. About two-thirds of the providers 193 (64.3%) have had the opportunity to prescribe EC. Majority of the providers 262 (87.3 %) agree that the benefits of EC outweighs its risks. More than half 59% of the providers have positive attitude towards EC. Close to half of the providers 131(43.7%) perceived EC use promotes promiscuity. More than a third (36.7% n=110) of the providers feel uncomfortable prescribing EC because of religious and or ethical reasons. About one quarter 79 (26.3 %) of the providers reported that they are reluctant to prescribe EC because of their experiences. Providers with adequate knowledge on EC were more likely to dispense EC compared with those who had inadequate knowledge (AOR=2.26; C.I. = 1.55-3.14). Providers with positive attitude towards EC were more likely to dispense EC compared with those who have significant negative attitude (AOR=3.06; C.I. =1.73-3.73). Having access to EC increased providers' ability to dispense two times compared with having no access (AOR=2.03; C.I. = 1.59-3.18) as well as availability (AOR=2.14; C.I. =1.54-3.09).

Conclusion

Providers had adequate knowledge on the definitions, side effects and mode of action of ECs. A large proportion of the providers in this study have been trained on various aspects of ECs while a small proportion are only using knowledge obtained during their undergraduate studies. A little above half of the providers had positive attitude towards EC dispensing. Per the interviews, providers were not influenced by their religious and cultural beliefs in dispensing ECs. Providers in this study were clearly aware of their professional and social roles in this study. Reproductive health education should be taught in all health institutions as part of their curriculum. This will make all health care providers adequately equipped for dispensing ECs in the Accra metropolis.

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LIST OF ABBREVIATION

EC-	Emergency Contraceptive
ECPs-	Emergency Contraceptive Pills
HIV-	Human Immune Deficiency Virus
IUCD-	Intra-Uterine Contraceptive Device
POEC	Progesterone Only Emergency Contraceptive Pill
RH-	Reproductive Health
STI-	Sexually Transmitted Infection
UNICEF-	United Nations Children's Fund
WHO-	World Health Organisation

CHAPTER ONE

INTRODUCTION

This chapter presents the background of the study, problem statement, specific objectives, research questions, and the significance of the study. In addition, the delimitation, conceptual framework and definition of terms are discussed.

1.1 Background of the study

Emergency Contraceptive Pills (ECP) is among the thirteenth important commodities outlined by the UN Commission on Life-Saving Commodities for Women and Children (Dawson, Howes, Kennedy, 2011; United Nations, 2012). Despite ECP being available for 20 years, access remains a challenge for most women in low and middle-income countries (LMIC) (Westley, Kapp, Palermo & Bleck, 2013).

The Center for Disease Control and Prevention [CDC] (2013) describes EC as an effective birth control method used by women to prevent pregnancy up to about five days following unprotected sexual intercourse. Two main types of Emergency Contraceptives (EC) are available (World Health Organization, 2012) but they differ on the brand: one or two pills taken orally and a copper-bearing intrauterine device (IUD) (WHO, 2012). Both the pill and the IUD have the same mechanism of action. It is established that they both delay the release of the eggs produced by the woman's ovaries, which prevent fertilisation, and eventually reduces the possibility of achieving pregnancy (Planned Parenthood, 2013). The overall benefit is that, ECs offer women a safe means of preventing unwanted and unintended pregnancy following unprotected sexual intercourse or in an event of contraceptive failure (Weisberg & Fraser, 2009; Roni, 2013).

It is worth noting that variations in terms of effectiveness of EC exists. Some ECs can only effectiveness when used 72 hours after unprotected sex (Szabo, 2013). The earlier the EC is taken, the better the outcome (CDC, 2013). Some evidence also suggests that, hitherto, the at-risk population and providers were unaware of this time constraints (Teixiera et al., 2012). This obviously might have affected the success stories of ECs in some areas. Healthcare providers are also often prejudiced by prevailing social norms on appropriateness of EC, for example the extent to which it is considered abortive, and who should have access to it (Fayemi et al., 2010). Another important consideration is the global differences that exist among healthcare providers who prescribe ECP including those who dispense (Dawson et al., 2011).

Proficient and enthused healthcare providers and a well-managed healthcare system are required as part of the efforts to deliver evidence-based packages of care for women to achieve positive reproductive and maternal health outcomes (WHO, 2012). EC can be provided by a wide range of professionals including midwives, nurses, pharmacists, physicians, and paramedics in both the private and public health sector at the various levels of care (Westley, Kapp, Palermo, Bleck, 2013). In some jurisdictions, lay healthcare providers distribute contraceptives to people. For instance, in Bangladesh, family welfare assistants and volunteer female community health worker offer contraceptive services such as condoms during home visits in both rural villages and urban areas (Dawson et al., 2011).

It is a welcoming phenomenon to realise that the private sector is playing a progressively essential advocacy role as part of the changing global trends to make ECP over the counter products instead. ECPs is now commonly sold in pharmacies by either a Pharmacist or retail staff (Westley et al., 2013; Pacque-Margolis, Cox, & Puchett, 2013). The only worrying situation is that quite a number of these drug sellers such as patent

medicine vendors or retailers in some African countries do not have the requisite training in pharmacology yet they sell pharmaceutical products (Brieger, Osamor, Salami, 2004). These providers appear to be the primary source of drugs especially for the poor (Keesbury et al., 2009). “Other providers have been trained to distribute ECP including the police in situations where women have been sexually assaulted” (Pacque-Margolis et al., 2013).

It is well documented that several factors act as barriers to EC provision and utilisation (Ebuehi et al., 2006; Aksu et al., 2010; Szucs et al., 2010). For example, inadequate provider knowledge has been reported as an important barrier in Turkey (Sevil et al., 2006), Nigeria (Fayemi et al., 2010), and India (Tripahi et al., 2003). In the United States of America, it was found that providers had inadequate knowledge on mechanisms of action of ECs and when it should be used (Lawrence et al., 2010; Wallace et al., 2004). The poor knowledge of providers negatively impacts the information they share with their clients as they rarely educate the consumers of their services about EC to determine their unmet needs (Karasz et al, 2004; Ebuehi et al., 2006). “Most studies have concentrated on users of EC with only a few on providers in developed countries. Information on providers’ (doctors, pharmacists and midwives) knowledge and attitude on EC in Africa generally and Ghana is scanty or absent. In view of this, the current study will provide information on the knowledge, attitude and perception of providers on emergency contraception.

1.2 Problem statement

One of the most essential determinants of a healthy society is access to sexual and reproductive health and rights (Singh, Sedgh, Hussain, 2010). Globally, about 214 million women in their reproductive age who desire to avoid pregnancy are not using modern contraceptives methods (WHO, 2018). Recent estimate shows that about 85 million pregnancies in 2012 were unintended (Sedgh, Singh, & Hussain, 2014). Out of these number

of pregnancies, about 50% resulted in abortion, 13% resulted in miscarriage, and 38% ended in unplanned birth.

Each year, 15 million babies are produced by adolescent girls. The most affected regions are low and middle-income countries where over 90% of these births occur (LMIC) (WHO, 2013). Pregnancies and birth related complications are among the primary causes of mortality for young women (Dawson et al., 2011) and have been associated with limited access to healthcare and inadequate information (Mbizvo et al., 2010). In fact, the evidence suggests that in every eight minutes, a woman dies as a consequences of unsafe abortion (WHO) (WHO, 2013). These concealed abortions contribute significantly to the five leading causes of maternal death globally (WHO, 2013). One out of three females have an abortion by age 45 in the United States, (Planned Parenthood, 2013). “The World Health Organization reported in 2014 that 11% of all births were due to women 15-19 years” (WHO, 2014). Almost all (95%) reported teenage pregnancies occur in developing countries where 36.4 million women become mothers before 18 years (United Nations Population Fund, 2013). The highest prevalence of teenage pregnancies occurs in **sub**-Saharan Africa (United Nations Population Fund, 2013). The Ghana Health Service (GHS, 2014) reported 750 thousand teenage pregnancies in that year alone. The Ghana Health Service Report for 2015 indicated a teenage pregnancy prevalence of 14.4% in the Central Region (GHS, 2015).

About 10, 000 teenage pregnancies were recorded in 2015 in the Greater Accra Region. Some of the teenagers were as young as 9 years. Notwithstanding this distressing challenge, usage of EC continues to be very low in developing countries. In a current study in Ghana, 59% of the respondents have heard of EC while only 36% have ever used one (Kofuor & Doku, 2015). Numerous factors have been associated with low usage of EC

among the Ghanaian population with a focus on users. Very scarce studies have focused on providers as a challenge for improving usage of EC. In view of this, the researcher **sought** to determine providers' attitude, practice and perception towards emergency contraceptive use in the Accra Metropolis.

1.3 Main objective

To examine the factors influencing emergency contraceptive prescription among health care providers in the Accra Metropolis.

1.4 Specific objectives

- i. To determine the perception of providers on emergency contraceptives.
- ii. To assess the knowledge and attitude of providers on emergency contraceptive.
- iii. To examine the association between sociodemographic characteristics of providers and knowledge on emergency contraception prescription.
- iv. To investigate the barriers associated with perception of providers on emergency contraceptive.
- v. To investigate the barriers associated with practice of providers on emergency contraceptive.

1.5 Research questions

- i. What is the perception of providers on emergency contraceptives?
- ii. What is the level knowledge and attitude of providers on emergency contraceptive?
- iii. What is the association between sociodemographic characteristics and emergency contraception prescription?

iv. What are the barriers associated with perception of providers on emergency contraceptive?

iv. What are the barriers associated with practice of providers on emergency contraceptive?

1.6 Significance of the study

The efficient use of emergency contraception could reduce the number of unintended pregnancies and abortions recorded in Ghana. Of great importance is its effect on reducing the high incidence of teenage pregnancies and abortions in the country. Furthermore, reducing the number of abortions each year may also lead to a decrease in sexual violence, and improved women's health. Information on providers' knowledge, attitude and perception on EC will help in understanding how to increase their knowledge and improve on their practice as professionals. Identifying the factors influencing their attitude, practice and perception will also enable policy makers to develop efficient solutions to increase usage of EC in preventing unwanted pregnancies. Information gathered from this study could be used by other researchers in formulating hypothesis for future research.

1.7 Delimitation

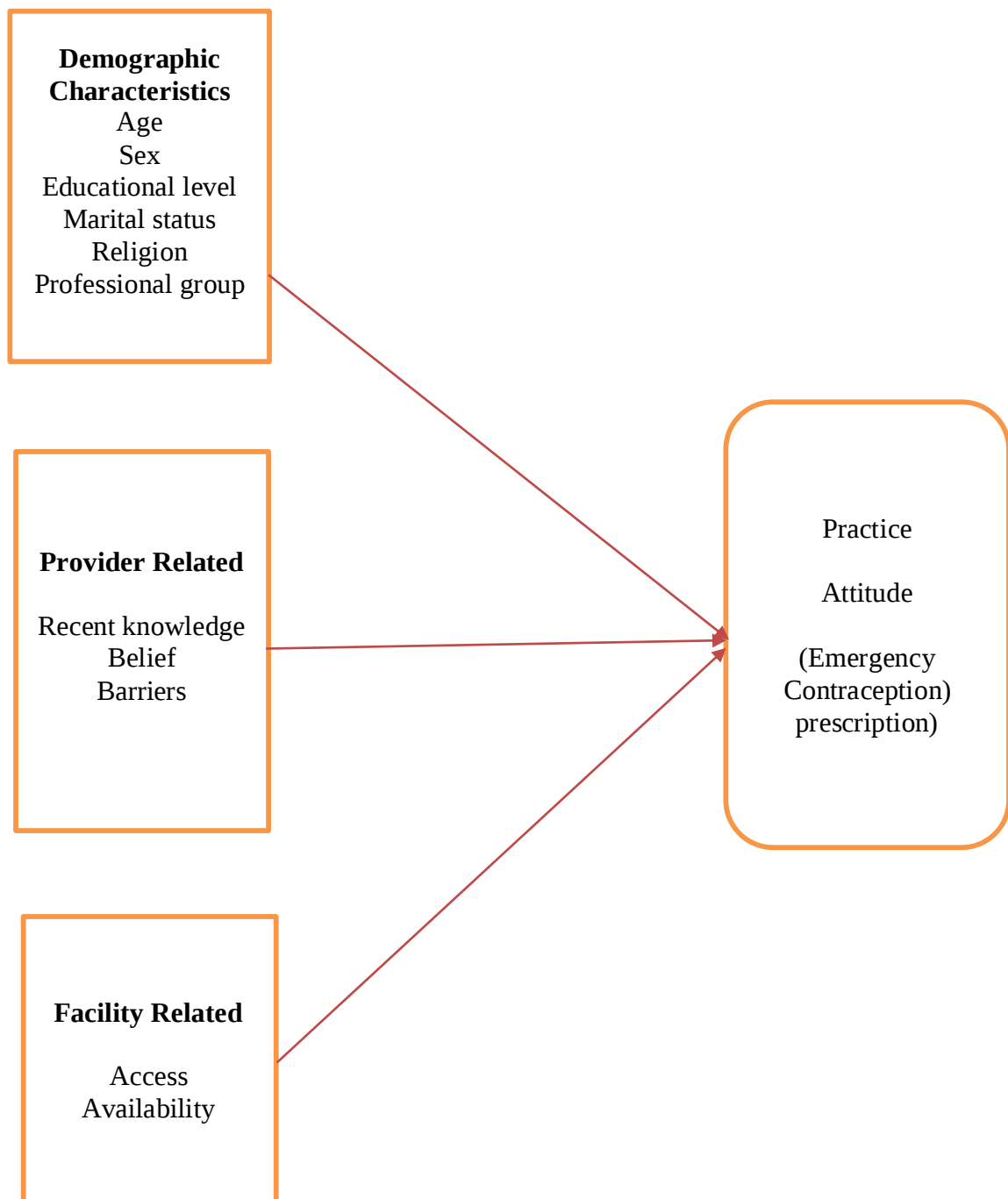
The study was limited to providers working in the selected health facilities (pharmacists, doctors, midwives) in the Accra Metropolis at the time of conducting this study. Data obtained were from a questionnaire developed to answer questions specific to factors influencing EC prescription among health providers.

1.8 Conceptual framework

Wondimu (2008) describes a conceptual framework as the types of questions the researcher needs to answer, as well as how empirical procedures are to be used as an

instrument when answering these questions. The literature reviewed shows that socio-demographic factors and health related factors were considered as independent variables, attitude and practice of contraception as the dependent variables. The independent variables are expected to act individually or as a composite variable in directly or indirectly influencing health provider's perception, attitude and practice towards emergency contraceptives (Godin, Conner, Sheeran, 2005). The theory was developed to address the internal motivational factors as determinants of the likelihood of performing a specific behavior such as dispensing contraceptives to clients (Montano & Kasprzyk, 2002). The knowledge of the provider, attitude toward the behavior (i.e., behavioral beliefs and evaluation of behavioral outcomes) and motivation to comply of the individual are used to determine behavioral intention and thus behavior (to dispense). The constructs in Figure 1 represent key components of contraceptive prescription and may be influenced by attitudes and subjective norms established by (perceived) knowledge. The theory provided a foundation for instrumentation design and creation to measure attitudes, perception and intentions about emergency contraception (Stevens, Steensma, Harrison, Cochran, 2005). The model that has potential benefits for predicting the intention to perform a behaviour based on an individual's knowledge, attitude and perception towards contraceptive prescription and dispensing. Whilst this model has been widely used to evaluate a range of consumer behaviours, there is an argument that they are not suitable to use in evaluating decisions in an organizational context because of the dynamic and intricate multiphase, multi-person, multi-departmental and multi objective nature of the decision processes in organization (Carpenter, Pllock, Leary, 2003). This argument is not as strong or convincing when it comes to small business because by their very nature small set ups such as pharmacies and reproductive health clinics decisions tend to be the domain of a single individual (Provider). Consequently, the predictive capacity inherent in this may well have

relevance to evaluating decision making within the health service provision industry. By way of a brief explanation the theory aimed at exploring the variables that are presumed to be responsible for decision behaviour by individuals (Providers) (Marquardt and Noeger, 2009). The theory is presented in Figure 1. The relationship between the variables is such that the testing phase of the research can be conducted using the structural equation modelling technique. This method provides some benefits for interpretation of results and arguably provides a degree of confirmation of the findings.



1.9 Operational definition

Emergency contraception: A form of oral contraception used immediately after sexual intercourse but before pregnancy is established. (Castle & Coeytaux 2000. In this study,

emergency contraception refers to an effective method of birth control that prevents pregnancy after unprotected sex in adolescent girls and young adult women.

Practice of service providers: In this study, practice of service providers, describes a regular overt behaviour of doctors, pharmacists and midwives service provision regarding EC.

Service providers: Service providers in this study refer to: health professionals (doctors, pharmacists and midwives) who are qualified and certified by their respective professional bodies and have worked for at least 3 years.

Attitudes: This refers to providers' opinion, out-look and intentions towards EC methods. Respondents' willingness to provide the intended service to users, consider EC as useful or recommend EC. Attitude is categorized as positive or negative in this study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents literature on emergency contraceptive perception, attitude, practice and prescriptive practice among healthcare providers. Literature was reviewed in accordance with the stated objectives and research questions. Keywords used include “emergency contraceptives”, “knowledge”, “practices”, “attitude”, and “healthcare providers” Online databases such as Pubmed, Web of Science, Google Scholar, Africa Journal on Line, and Hinari were used for the data search.

2.1 Overview of emergency contraceptives

Emergency contraception is defined as a medication or device used to prevent pregnancy after unprotected intercourse (including sexual assault) or after a recognized contraceptive failure. It has alternatively been called post-coital contraception or the morning after pill. These terms are confusing and imply that EC pills can only be taken immediately, which is incorrect. They can be used, while with decreasing efficacy, for up to five days’ post intercourse” (Calabretto, 2009). The most critical criterion is that EC have to be used as an emergency response but not on a regular basis as the name implies. It is intended as a substitute method only and not as long-term contraceptive (Lindeque, 2008, Steyn & Mason, 2009, NAPPA, 2010). The method is simple, efficient and safe, but does not protect from sexually transmitted diseases (STI) and Human Immunodeficiency Virus (HIV) (Cheng, Gülmezoglu, Piaggio, Ezcurra and Van Look, 2008).

Several published papers suggest that emergency contraceptive reduces the risk of pregnancy of “women who have had unprotected sexual intercourse by approximately 75 %

to 89% if is taken within 72 hours after engaging in unprotected sexual intercourse” (Goodwin, Montoro & Muderspach, 2010). “Emergency contraception prevents pregnancy using similar mode of action as other hormonal contraceptives such as pills and injectable (Depo Provera) or even breast feeding, by inhibition of ovulation, inhibiting fertilization or inhibiting implantation of the fertilized egg by altering endometrial receptivity, or possibly causing regression of the corpus luteum”. This depends on when during the menstrual cycle of a woman initiates the method. In this study, correct time for EC is within 72 hours after unprotected sexual intercourse (Chaudhuri, 2008).

Worldwide, about 45 million unintended pregnancies are terminated yearly. Out of these, 19 million are terminated under unsafe conditions. A higher proportion (40%) of unsafe abortions are done by young people in low income countries (United Nations Childrens Fund (UNICEF, 2011). The five leading causes of maternal mortality are attributed to clandestine abortions among adolescents (WHO, 2003) which result in morbidity (Parker, 2005). “Unintended pregnancies result from contraceptive non-use, misuse, and method failure. Adolescent women are more likely not to use and to misuse contraceptive than older women” (WHO, 2013).

Despite the effectiveness of EC, it does not protect against sexually transmitted infections. The production of EC comes in three ways; the use of progesterone-only, the use of hormonal contraceptive pills either progesterone-only or combined oral contraceptives, and the use of copper releasing intra-uterine contraceptive device (IUCD). The use of EC is not contraindicated for some specific group of women (Deborah 2006). Using emergency contraception (EC), the problem of unintended pregnancy and its complication can be reduced, “which refers to a group of birth control modalities that when used within a defined period of time can markedly reduce the risk of unintended pregnancy” (Moszynki, 2006). For a woman who has had unprotected sexual intercourse and she is not ready for pregnancy,

EC is the only option left to her (Byamugisha, Mirembe & Faxelid, 2006). “Emergency contraception is defined as a medication or device used to prevent pregnancy after unprotected intercourse (including sexual assault) or after a recognized contraceptive failure”. It is also referred to as post-coital contraception or the morning after pill. These terms appear to erroneously imply that EC pills can only be useful when taken immediately after sexual encounter.

According to Calabretto (2009), EC can be used up to five days after sexual intercourse but with decreasing efficacy as the day go by. Nevertheless, EC use should only be encouraged in an emergency situation and not to be consistently used as in the case of other contraceptives considered as a regular. It is intended as a backup method only and not as long-term contraceptive (Lindeque, 2008, Steyn & Mason, 2009, NAPPA, 2010). The method is simple, efficient and safe, but does not protect from sexually transmitted diseases (STI) and Human Immunodeficiency Virus (HIV) (Cheng, Gülmezoglu, Piaggio, Ezcurra & van Look, 2008).

2.2 Importance of Emergency contraceptive for school learners

The importance of EC is evident in preventing unintended pregnancies and its ill consequences like unintended child delivery or unsafe abortion after unplanned or unprotected sexual intercourse. The concept appears appropriate for adolescents and learners in learning institutions who are subjected to have sex sporadically and occasional sexual intercourse, which makes contraceptive planning difficult (Dereje, 2010). Most victims of unwanted pregnancy are adolescents, who are expelled from school, often ending their formal education and the potential for future employment. For fear of being expelled from school, many adolescent girls resort to clandestine abortion, which often results in serious complications or death (WHO, 2010). ECPs have become available in many

developing countries.

Others experience contraceptive failure and the failure rates may be higher in young people than adults due to their inexperience. Furthermore, few people use the method perfectly every time they have intercourse further highlighting the need for an emergency backup method. Also, many young women experience coerced sex, including rape. EC gives these women practically an option and a critical last chance to prevent unwanted pregnancy and the associated hardships. It is also controlled by the woman thus empowering her to take responsibility for her life. Therefore, EC needs to be available and used appropriately as a backup in case regular contraception is not used or misused (Linere, 2012 & Parker, 2010).

2.3 Correcting myths and misunderstandings on Emergency contraceptive.

There are often a lot of myths and misunderstandings surrounding the use of emergency contraception. It is important that adequate and correct information be provided to the public and potential users of emergency contraception. Emergency contraception does not cause abortion and does not cause birth defects should a pregnancy occur. It is not dangerous to a woman's health and does not make women infertile. One other myth surrounding emergency contraception is the perception that it promotes sexual risk taking. EC should be used only after unprotected sexual intercourse and no evidence exists to support the claim that it promotes sexual risk taking. It should not be used as regularly as other contraception method (Kistnasamy, Reddy & Jordan, 2009).

2.4 Knowledge of health providers on Emergency contraceptive

A study conducted in Switzerland among health providers on the knowledge and practices of EC showed that most of them (89.3%) were knowledgeable of the EC. EC

awareness was positively associated with their level of education and rank. The study concluded that EC awareness and use should be improved through better information and accessibility; especially among providers with less years of practice and low rank (Ottesen, Narring, Renteria & Michaud, 2002). The study done in Lothian, south east Scotland found that 1121 (93.0%) of providers have heard of emergency contraception. One hundred and ninety four (32.7%) had dispensed **it** on several occasions. Knowledge of correct time limits was however poor. About 861 (76.8%) of providers knew alternative sources of EC when they run out of stock. Nine hundred and twenty-five 925 (82.5%) believed emergency contraception to be effective, but (35.5%) considered it more dangerous than the oral contraceptive. The study concluded health education initiatives should target providers. The survey performed in Sweden indicated that nearly half (45.4%) of the providers had adequate knowledge of EC. Many of the providers (67.3%) also knew that ECP prevented implantation (Nordin & Tydén, 2001).

In a study conducted by Kang & Moneyham (2008) among providers in Korea found that they generally lacked knowledge of emergency contraception and held misconceptions in this regard. Less than 20% of the respondents knew that emergency contraception could not prevent Sexually Transmitted Diseases. The descriptive study conducted in Nepal to assess the KAP of providers showed that awareness of EC among respondents was found only 47% among which very few mentioned correct definition (17.02%) and consuming time (9.58%) of the EC. Despite inadequate knowledge of EC, attitudes were found in favour among the respondents (Subedi, 2011).

In Africa, a cross-sectional descriptive study was conducted in a community health post in South West Ethiopia and found that seventeen (16%) of the providers could recite correctly the recommended time for EC use (i.e. within 72 hours of unprotected sex).

Awareness about EC was not found to be affiliated with either age or education level. Whereas the general awareness and detailed knowledge was high their perception was flawed (Tajure, 2010).

Another study of knowledge of providers towards EC was conducted by Alemaleyu, (2012) in Ethiopia. Of the total respondents, 11.6% had ever heard of EC. Sixty-four percent of those ever heard of EC mentioned pills and 48.0% of them identified 72 hours as a time limit to start the first dose of ECP. Around 75% of the respondents had positive attitude towards EC. Another study was done in Thulamela Municipality of Limpopo Province, South Africa. The findings of the study showed that providers were aware of different contraceptive methods that can prevent pregnancy. Only 17% of respondents were aware of emergency contraceptive, intrauterine device (Ramathuba, Khoza & Netshikweta, 2012).

A study undertaken in Kenya found that 57% of providers knew about emergency contraceptives. Of these, only 18% knew about the correct timing of use. Misconceptions were found to exist in respondents' responses, mostly centered around perceived adverse effects of ECs (Michieka & Nyanchae, 2010). Another study done in India to assess the knowledge and attitude of providers regarding contraception and population control showed that most of them considered that condom is an emergency contraceptive. This indicates that their knowledge towards emergency contraception was inadequate (Jahnavi & Patra, 2009). The general attitude of providers towards ECs was positive (Parey et al, 2010).

2.5 Perception of health providers towards Emergency contraceptive

A recent study of pharmacist beliefs concerning the dispensing of hormonal contraceptives in general was conducted in the rural town of Winchester, Virginia. Richard, Kinzey, and Masters (2015) sent surveys to each of the town's 52 pharmacists, who work in 32 pharmacies, in March of 2011. The survey had a 63% response rate. The survey

questioned attitudes toward hormonal contraceptives generally, but not EC specifically. Fifty-four percent of responding pharmacists opposed prescription of hormonal contraception by pharmacists. Ninety-five percent opposed over-the-counter access to any hormonal contraceptives and 71% did not even support behind-the-counter access. Eighty percent of pharmacists responding doubted their patients' ability to self-screen for contraindications (Richard, Kinzey, & Masters, 2015).

Mackin and Clark (2011) found that 38% of pharmacists in Iowa at the time they were surveyed believed EC to function as an abortifacient. Likewise, Richman, et al. (2012) found that 46% of pharmacists responding to the survey believed Plan B induces abortion. In both cases, it is difficult to know where misunderstanding of chemical mechanism of levonorgestrel ends and personal beliefs concerning abortion begin. However, neither study asked pharmacists both what they understood about the chemical function of emergency contraception and their personal beliefs concerning abortion.

Many pharmacists also persist in the belief, shown to be false by Raine and colleagues (2012) and by Manski and Kottke (2015) that levonorgestrel is unsafe for adolescents without medical and adult supervision. For example, Wilkinson and colleagues (2014) found that the same pharmacy staffs that showed confusion and uncertainty as to emergency contraception regulations also resorted to ethical terms when describing their own pharmacy's policies on EC availability. Despite extensive evidence of the absence of abortifacient properties cited above, many pharmacists and other pharmacy workers believe use of or dispensing of levonorgestrel emergency contraceptives to be a form of abortion and therefore morally objectionable (Mackin & Clark, 2011; Richard, Kinzey, & Masters, 2015).

Price (2011) considered the role of sexual ethics and personal morals in the

construction of public policy concerning access to emergency contraception for adolescents and found that desires to maintain parental authority and expectations of sexual “purity” for teenage girls have been the primary causes for the subordination of health policy to personal ethics. The author identified culturally and religiously based fears and anxieties as giving rise to extreme discomfort with the existence of adolescent sexuality. Providers tend to explain that providing access to contraceptives implies adult permission for sexual activity.

Lewis and Sullivan (2012) writing in *Ethics and Medicine* considered the ethical arguments for health care providers and pharmacy staff to refuse to provide emergency contraceptives such as levonorgestrel which have been specifically shown to have no abortifacient properties. Having reviewed all available studies on levonorgestrel’s chemical properties and mechanism, they found that moral claims based on belief that EC functions as an abortifacient are fully baseless and untenable. They argue that such a refusal of care has no basis in medical ethics (Lewis & Sullivan, 2012).

2.6 Attitude of health providers towards Emergency contraceptive.

Several studies have documented the attitudes of healthcare providers toward EC (Ibrahim, Ahmed, & Shaaban, 2013; Harrison, 2014; Abdulghani, Karim, & Irfan, 2009). For example, a study conducted in Egypt using 270 healthcare providers including general practitioners and obstetrics and gynaecology specialist found a positive attitude towards EC among these cadre of health staff. About 27% of the general physicians and 39.5% of the specialists indicated that they have ever prescribed EC (Ibrahim et al., 2013). Similarly, in Pakistan, it was revealed that a number of the physicians had good attitude toward EC (Abdulghani, Karim, & Irfan, 2009).

In Nigeria, it was found that 56% of the study participants had prescribed EC to their clients before but only 10% indicated that they provided information about EC to their

clients (Ebuehi, Ebuehi, & Inem, 2006). On the other hand, the perception that EC could lead to a delayed future pregnancies and possibly present teratogenic effect had influences on the prescription practices of EC among community health providers (Mir & Malik, 2010).

2.7 Barriers to dispensing Emergency contraceptive among providers

2.7.1 Access

Timely access to emergency contraception (EC) is essential. Access has improved considerably, however, barriers to EC access and use continue to exist and are brought about by politics, lack of awareness, lack of clinician discussion of EC and its availability, and other issues. Several researchers have recognized and studied the role of sexual partners and other allies in accessing emergency contraception. Bell, Camacho, and Velásquez, (2014) sent male mystery shoppers into pharmacies in three New York City neighbourhoods to request EC. While almost three-quarters of pharmacies (73.3%) were considered by the authors to have presented some barriers to EC access, the most common barriers to access were found to be limited hours in lower socio-economic status neighbourhoods and higher cost in higher socio-economic status neighbourhoods.

Despite various barriers, the male mystery shoppers in the study could access EC 80% of the time (Bell, Camacho, and Velásquez, 2014). Durrance (2013), writing in *Economic Inquiry* considered a possible correlation between trends in sexually transmitted infections and the increased access to EC. Acting to increase access to emergency contraception many years before over-the-counter status was approved by the FDA in 2006, Washington State officials allowed pharmacists to begin prescribing EC in 1998. Following that change, rates of gonorrhoea infections both in women and in men rose in significant correlation to the increase in EC availability at the county level.

2.7.2 Lack of discussion among health care provider and client

According to data from the 2002 National Survey of Family Growth, only 3% of women reported that a health care provider had discussed EC with them in the previous year. Lack of information from a trusted health care provider further limits women's awareness and knowledge of EC and its availability (Entelemahu, 2007).

2.7.3 Summary

The barriers to the use of EC have not been well studied and documented in Africa. Studies conducted by researchers in other settings have identified lack of knowledge among the users about the correct timing and dosage of EC pills as a barrier to use of EC. The socio-cultural barriers of sexual and reproductive health education and the fears that young girls will take on the irresponsible sexual behavior and that EC may take over the regular effective contraception have also been cited as barriers to use of EC (Colarossi, Billowitz, & Breitbart, 2010; Entelemahu, 2007; Mandiracioglu & Turgul, 2003). Studies on knowledge, attitude and perception of providers on EC is scanty in the literature and absent in most African Countries. Lack or absent of this information makes it difficult for stakeholders to implement effective and efficient policies to improve prescription practices among providers. This study seeks to provide such information to fill this gap.

CHAPTER THREE

METHODS

3.0 Introduction

This chapter presents the methodology that was used in answering the research questions. The chapter consists of the study design, study setting, study population, sampling procedure and sample size calculation, data collection tools and procedure as well as data analysis. The chapter ends with how ethical issues such as confidentiality, withdrawal, voluntariness, risk and beneficence were handled during the research.

3.1 Study design

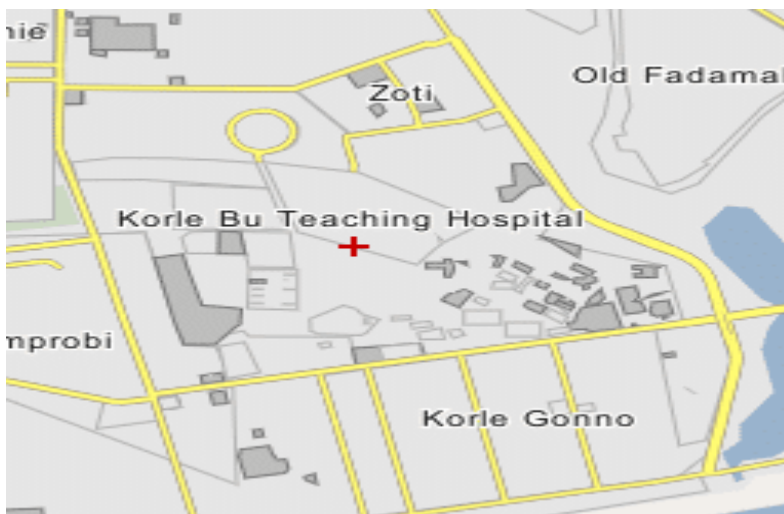
According to Mouton, as cited in De Vos, Strydom, Fouché and Delport (2008), a research design is a plan of how one intends to accomplish the research. This study used the mixed (quantitative and qualitative) methods approach in a hospital based cross-sectional study design among three hundred (300) health service providers from the month of July to September 2018.

The mixed method approach was used to ensure data triangulation. The use of both methods ensured that relevant and accurate information are obtained from the service providers. The aim of the quantitative approach is to quantify providers' perception and attitude as well as knowledge regarding dispensing of EC. The aim of the qualitative approach is to explore the factors and perception of providers in relation to ECs. The major purpose of a cross sectional descriptive study design as applied in this instance is to examine the knowledge, attitudes, beliefs and behaviour of people and how these variables affect one another (Randall and James, 2011).

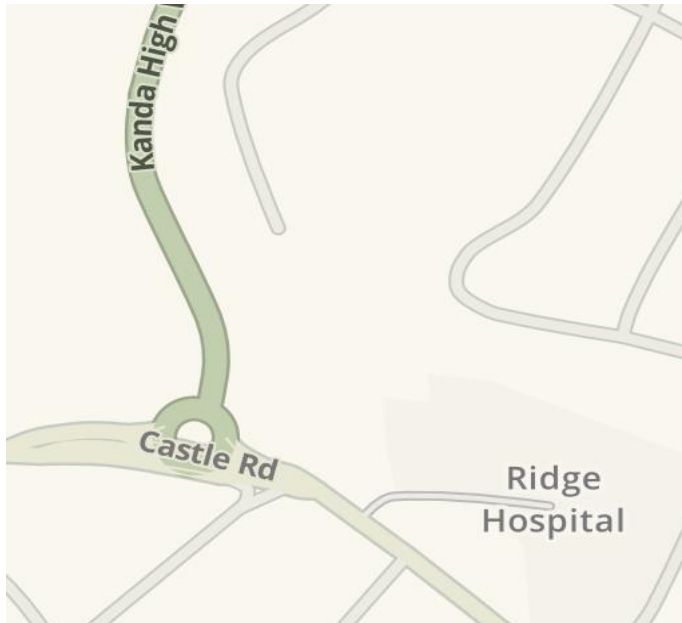
3.2 Study area

The study was conducted in four health facilities (Korle-bu Teaching Hospital, Ridge Hospital, Mamprobi Polyclinic and Adabraka Polyclinic) in the Accra Metropolis. Korle-Bu Teaching Hospital is the largest hospital in West Africa and serves as a referral centre in the sub region. It is a 2000 bed capacity hospital with specialized departments and centres. It has a large Obstetrics and Gynecology Department, which provide reproductive health to surrounding towns and communities. The department is equipped with a well-functioning pharmacy. Ridge Hospital the Regional hospital for the Greater Accra Region. It is 600-bed capacity hospital with a large pharmacy, reproductive health unit as well as an obstetrician and gynaecology department.

Both Mamprobi and Adabraka polyclinics run a family planning clinic for patients living in the surrounding communities. These health facilities were selected because of the availability of study participants and the wide coverage of individuals making it possible to obtain a representative sample of providers. They also report high rates of FP usage compared to other health facilities in the Accra Metropolis. Their proximity to the research area as well as the large number of clients they attend to in terms of emergency contraceptive was an added advantage.



Korle-bu Teaching Hospital Source: Google maps, 2018



Ridge Hospital

Source: Google maps, 2018.

3.3 Study population

The study population is a group or total number of people, events, organization unit, case records or other sampling unit, which helps to address the research questions. The group should have a given set of characteristics, about which the researcher wishes to draw conclusions (Welman, Kruger & Mitchell, 2005). The study population was a sample of health workers (doctors, pharmacist and midwives) in the four health facilities who have been directly involved in administering emergency contraceptives for at least one year and consented to take part in the study.

3.4 Sample size

According to De Vos et al. (2008), a sample can be defined as elements of the population considered for actual inclusion in the study. Is a part of an entire population that possesses attitudes, opinions, habits, or characteristics that a researcher wishes to explore (Dattalo, 2008).

Sample size was calculated using single Cochran's proportion formula

$$n = (Z^2) * p(1-p) / d^2$$

Where

n=minimum sample size needed

d=desired precision (6%)

p=proportion of health workers providing emergency contraceptives during the study period which will be assumed to be 50% since none was available in literature.

$Z^2=1.96$ at confidence level 95 %

Based on the above assumption, the sample size calculated was 267, adding non-response rate of 10 % = 300.

3.5 Sampling procedure

Participants in this study were sampled using quota sampling method selected. This method required that participants in the study are selected appropriately based on their number in each facility by using the hospital registry of the stated health providers in the four health facilities who met the inclusion criteria. Required number of total sample size was proportionally allocated by size of service providers per other health professionals in each of the four health facilities. At each facility, service providers were stratified into three provider categories (doctors, pharmacists and midwives).

The numbers selected from each category were proportional to their size per the calculated sample size. Twelve providers for the interviews were purposively selected. The researcher first interacted with all the four categories of providers at all four health facilities to ascertain their involvement in dispensing family planning and their period of practice. This was to determine if they had adequate experience and knowledge to provide adequate information to answer the research questions. Those found to meet the inclusion criteria were asked to give consent to be part of the interview.

Inclusion criteria: All health providers who were present during the study period and were directly involved in the administering of emergency contraceptives for at least one year and consent to take part in the study.

Exclusion criteria: All health providers directly involved in administering emergency contraceptives during the study period but did not consent to participate in the study. All health providers who are not involved in administering emergency contraceptives in the health facilities.

3.6 Study variables

The variables measured in the study were grouped into dependent and independent.

Independent

The independent variables were:

Socio demographic factors: Age, religion, educational level, marital status, profession

Individual and facility related factors: knowledge on EC, access to EC, availability of EC, barriers.

Dependent /outcome variables

Attitude, practice and profession/social roles towards emergency contraception prescription.

3.7 Data collection tools

A self-administered structured questionnaire with open and closed ended questions written in English was used for data collections. The inclusion of both types of questions allowed the researcher to obtain more insight into the respondents' opinion (De vos, Strydom, Fouché & Delport, 2008). The items in the questionnaire were based on the research objectives and reviewed literature and was designed to capture all the relevant

information regarding the proposed research topic by means of a variety of question types. The study used a structured self-administered questionnaire developed in English addressing socio-demographic characteristics, health facility factors, perception, attitude and practice. The questionnaire and interview guide were pretested, and researcher and supervisors addressed anomalies detected.

3.8 Data collection procedure

Four research assistants were recruited and trained to be data collection facilitators and supervisors respectively. The questionnaire and interview guide were introduced to data collection facilitators and supervisors through a one-day training and pretested in another health facility with similar characteristics as the four selected. The training included the objectives of the study, introduction of questionnaire format, procedures of giving self-administered questionnaire & guiding them and methods of reporting to supervisor. The role and communication of supervisors to data collection were thoroughly explained. Following a pre-test, there was a discussion concerning the filled formats, guiding procedures and communication between data collection facilitators and the researcher. Some corrections were made on questions found to be ambiguous. The data collection facilitators collected the filled administered questionnaires and submitted to the researcher. Same procedure was used for the interview guide. In the quantitative approach, a validated questionnaire was used to obtain information pertaining to emergency contraception from 300 participants whereas in the qualitative approach 12 participants were interviewed using interview guide.

3.9 Data quality control

The quality of data was ensured at different levels for completeness and consistency; first by data collectors and by researcher and finally by supervisor. The researcher undertook computer data cleaning and checking.

3.9.1 Reliability

Reliability can be defined as the degree to which an assessment tool produces stable and consisted results. This means that the variable that is measured will produce the exact measurements or all items in a test or scale calculate the same concept, if measured under the same conditions each time (Cohen, Manion & Marrison, 2011). In this study, the researcher considered only internal consistency. Internal consistency refers to the degree to which all items in a test or scale, calculate the same concept (Brink, van der Walt, & van Rensburg, 2006, Bureau of Justice Assistance, 2010). A Pilot test was conducted to identify any possible practical problems and to ensure that the questionnaire and interview guide were easy to understand and complete.

3.9.2 Validity

Validity can be defined as how well a test measures what it is purported to measure (Cohen, Manion & Marrison, 2011). This includes content validity whereby an instrument represents all the components of the variable to be measured, face validity refers to the measurement technique, **that is** if it appears to be measuring what it is supposed to measure (Brink, van der Walt, & van Rensburg, 2006). The researcher in this study constructed questionnaire and interview guide based on the literature reviews. Such review reveals the essential aspect of the variables that must be included in the questionnaire. The intention of the questionnaire was to determine knowledge, attitudes, perception and prescription practice of providers towards the EC, which was ensured by presenting the questionnaire to

an expert in the field of family planning and statistician for the evaluation of content validity of the questionnaire and to ensure that statistical analysis was possible. This preceded the actual data collection. The pilot test also ensured that the questionnaire was free from ambiguity and inaccuracies, thus ensuring the validity.

3.9.3 Pilot test

The researcher piloted the data collection instruments before the commencement of the main study. This was done in 37 Military Hospital and Dansoman Polyclinic by randomly selecting 10 providers from these health facilities to complete the proposed questionnaire. The respondents involved, and data obtained in the pilot test were not included in the main study. The pilot test took place over a period of one week, from 02 March, 2018 until 09 March, 2018. A minimum of 10 providers from the health facilities took part in the pilot test and regular cross checking, inspection on the research questionnaire was conducted by a researcher to ensure accuracy, relevance, completeness, consistency and uniformity of the data until no further changes needed to be made to the questionnaire as recommended by the statistician. In addition, the interview protocol was pretested using two participants from Dansoman Polyclinic.

3.10 Data processing and analysis

After data have been collected, each questionnaire was checked for completeness. Data was coded on pre-arranged coding sheet by the researcher and entered into a computer using STATA 12.0 and NVIVO 8.0 software. Frequencies was produced to check for missing data. Data was then cleaned accordingly for analysis. Descriptive statistics such as frequencies, percentages, means and standard deviations were computed and presented. Each response to questions on knowledge, attitude and practice was scored “1” for a correct response and “0” for a wrong response. The composite score was then summed up and

percentages computed. A composite variable was computed as dichotomous variable. Specifically, knowledge percentage 50% and below was coded “0” = inadequate knowledge and above 50% was coded ‘1’= adequate knowledge. Same was computed for attitude and practice. The chi-square test of associations was employed where appropriate. Multivariate analysis was done to see the relative effects the predictors have on the dependent variables. Both p-value and 95% confidence intervals were used to determine statistical significance. A p-value less than 0.05 was interpreted as significant.

In the case of the qualitative data, qualitative Content analysis was used to analyse the data. The recorded interview was listened to over and over again and transcribed word-to-word. After reading the transcripts at least two times, significant statements were identified line by line, without making any assumptions. The data was compared between researcher and another transcriber for similarities and also to determine differences in the codes. Data reduction was obtained through the use of Nvivo version 8.0., Codes and groupings were formed as nodes. The loaded software also helped for easy access to quotations needed to support the findings. A table was generated to display the codes after which the codes were sorted according to the groupings. The final step, interpretation of findings was done, and conclusion was drawn based on the frame of reference defined by the research questions to categorize the data identified to enable description of codes and themes. The conclusion was taken back to participants for accuracy and representativeness review. Intercoder comparison was done on categories identified in the analysis of the data and no major discrepancy identified but rather additional information was obtained, as in one provider reported that she was not asked any question on cultural and religious beliefs. Also, an in-depth literature review further helped to confirm themes.

3.11 Ethical clearance

Ethical clearance was obtained from the Ghana Health Service Ethical Review Committee. Reference number GHS-ERC 105/12/17. A written letter from the School of Public Health was obtained to introduce researcher to the four health facilities. Permission was sought from the Heads of all the four health facilities. Written informed consent was obtained from the participants, using a language which the participants felt comfortable using. Participants were assured that withdrawal or refusal to participate in the study will not have any negative impact upon them or compromise their work.

Respondents were assured of confidentiality and anonymity. No respondent names, identity, or their staff identification number were collected in this study, and questionnaires were not made available to anyone, except the investigator and data collectors. The study did not have any risk to the participants. Completed questionnaires were locked in a safe place to ensure confidentiality. Original questionnaires would be destroyed after a period of five years. A copy of the report will be submitted to all four health facilities.

3.12 Dissemination of study result

The results of the study will be submitted to the School of Public Health and disseminated to the four health facilities. In addition, the findings of the research will be presented to professional association meetings and manuscripts will be submitted to peer reviewed journals.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the findings of the study in accordance with the stated objectives and research questions. The findings are presented in tables and charts.

4.2 Socio-demographic characteristics

Three hundred (300) providers were surveyed in this study. Their minimum age was 24 years and a maximum 58 years were observed in this study. The average age of all the participants in this study was 31.4 ± 7.2 years. Close to half 141 (47.0%) of the providers were 30-39 years, 122 (40.7%) 20-29 years. Only 25 (25 8.3%) were in age group 40-49 years. More than half of the providers 216 (72.0%) in the study were females. Almost all the providers 284 (94.7%) in the study had tertiary level education. More than half 182 (60.7%) of the providers were married and 109 (36.3%) were single. Almost all the providers 272 (90.7%) were Christian. Also, more than half of the providers 76.7% (230) were midwives while only (14) 4.7% were doctors. Table 4.1 below.

Table 4.1: Sociodemographic characteristics of providers

Variables	Frequency n=300	Percent 100
Age group (years)		
20-29 years	126	52.0
30-39 years	141	47.0
40-49 years	25	8.3
Above 49 years	8	2.7
Sex		
Male	84	28.0
Female	216	72.0
Educational level		
No formal education	0	0.0
Primary	0	0.0
Technical/Vocation/SHS	16	5.3
Tertiary	284	94.7
Marital status		
Single	109	36.3
Married	182	60.7
Divorced	9	3.0
Religion		
Christian	272	90.7
Moslem	25	8.3
Traditionalist	3	1.0
Professional group		
Doctor	14	4.7
Pharmacist	56	18.7
Midwife	230	76.7

Twelve health professionals from two of the four health facilities were interviewed (Table 4.2).

Table 4.2: Participants' profile

PERSONAL PROFILE	
Age in years	Number of participants
20-29	7
30-39	5
Religion	
Christians	10
Muslims	2
Education	
Tertiary	10
Secondary	2
Basic	0
No education	0
Marital status	
Married	9
Not married	3
Professional group	
Doctor	0
Pharmacist	2
Midwife	10
Sex	
Male	0
Female	12

Table 4. 3: Summary of the Thematic Findings

	THEMES	SUB-THEMES
1	Professional knowledge	Awareness Knowledge
2	Skills	Trained Experience
3	Roles	Professional Social
4	Beliefs	Cultural Religious
5	Challenges	Perception Access Availability

4.3 Knowledge of health professional on Emergency Contraceptive.

Table 4.4 shows the level of knowledge of providers on EC. Majority of the providers 262 (87.3%) reported that they know about EC. More than half of the providers 217 (72.3%) did not agree that the correct time for initiation of POEC. However, a third of the providers 83 (27.7%) thought the correct time for initiation of POEC was 120 hours. About a fifth 59 (19.7%) of the providers reported that EC has been shown to be an abortifacient. A little above half 172 (57.3%) of the providers reported that a pregnancy test is necessary before EC. More than half of the providers 188 (62.7%) agree that most common side effect of EC is menstrual irregularities. About a fifth of the providers 65 (21.7%) reported that IUD can be effective after fertilization. Close to half of the providers 144 (48.0%) reported that POEC should be repeated if a woman vomits within two hours. Majority of the providers 237 (79.0%) in this study have had the opportunity to learn about EC.

Table 4.4: Providers knowledge on Emergency Contraceptive

Knowledge factors	Frequency n=300	Percent %=100
Knows about EC		
Yes	262	87.3
No	38	12.7
Correct time for initiation of POEC		
Yes	83	27.7
No	217	72.3
EC acts as an abortifacient		
Yes	59	19.7
No	241	80.3
Pregnancy test necessary before EC		
Yes	172	57.3
No	128	42.7
Most common side effect of EC is menstrual irregularities		
Yes	188	62.7
No	112	37.3
IUD can be effective after fertilization		
Yes	65	21.7
No	235	78.3
POEC should be repeated if woman vomits within two hours		
Yes	144	48.0
No	156	52.0
Have an opportunity to learn about EC		
Yes	237	79.0
No	63	21.0

Professional knowledge

This theme represents provider knowledge and awareness on different aspects of EC. Providers provided their opinion on what they thought EC was and why it was given to clients. Two sub themes ‘knowledge’ and ‘awareness’ were identified in this theme.

Awareness

Some providers indicated that they had an idea of the existence of EC as a method of family planning and indicated that they have seen and heard clients talking about it on several occasions, again they indicated they have seen it prescribed and dispensed for some clients.

All five providers interviewed have heard of EC, have seen, and dispensed several of them.

Some participants recounted their level of awareness of EC;

“I have heard of ECs and seen it been dispensed to clients for the last 5 years, so I’m aware of its use” (Afia)

I am very much aware of EC and what they are used for “I know what ECs are and I have been giving it to my clients who require them” (Adwoa)

Knowledge of providers

Some participants indicated

This sub-theme represents provider’s level of knowledge on what EC is and what it represents as well. Providers interviewed in this study had adequate knowledge on ECs from their education and the fact that they have been prescribing for a long period.

Some participants explained what EC all is about as follows:

“I know about EC, they are a type of contraceptives taken after unprotected sex with a period of 72 hours. One has to first check if client is within this period and not pregnant before administering the drug” (Mansa)

“ECs are taken to prevent unwanted pregnancies with a period of 72 hours after having sexual intercourse and this is taken by women who thinks they are not protected after a sexual intercourse”(Abena)

“ECs should be taken at a goal and within 5 days of having unprotected sex but clients must be checked if they are not already pregnant as this could be the case and could lead to suing of the health facility. Some of the effects includes bleeding and vomiting” (Yaa)

Skills of providers

This theme represents the skills available to providers that enable them to provide EC services to clients. This theme also looked at the level of skill preparedness among providers. This theme also comprised of two subthemes ‘trained’ and ‘experience’.

Trained providers

This refers to formal training in skills training, workshops, in-service training and continuous professional development courses on ECS. Some participants had gone through training on way or the other.

I have gone through several trainings and workshops on ECs and that has enlightened my understanding of ECs and made me confident in dispensing them to my clients when the need be. Now I am an expert in providing Ec to clients who need it” (Ama)

“I have had several trainings on EC and hands on dispensing of ECs among adolescents in my facility. I even have a certificate to that effect and I call myself and EC specialist” (Abena)

Providers experience

This refers to experience gained by providers because of years of practice. These providers do not have formal training in EC except what they were taught while in school. However, through experience they have gained adequate knowledge on the prescription and dispensation of EC. A participant recounts her experience about EC

“I have not had any training in EC dispensing but have learnt from my colleagues throughout the years in this department and I know everything about it even more than those who have undergone training” (Yaa.)

4.3.1 Level of knowledge of providers on EC

More than half, 68% of the providers in this study had adequate knowledge of EC while 32% did not have adequate knowledge of EC. This is shown in Figure 4.1 below.

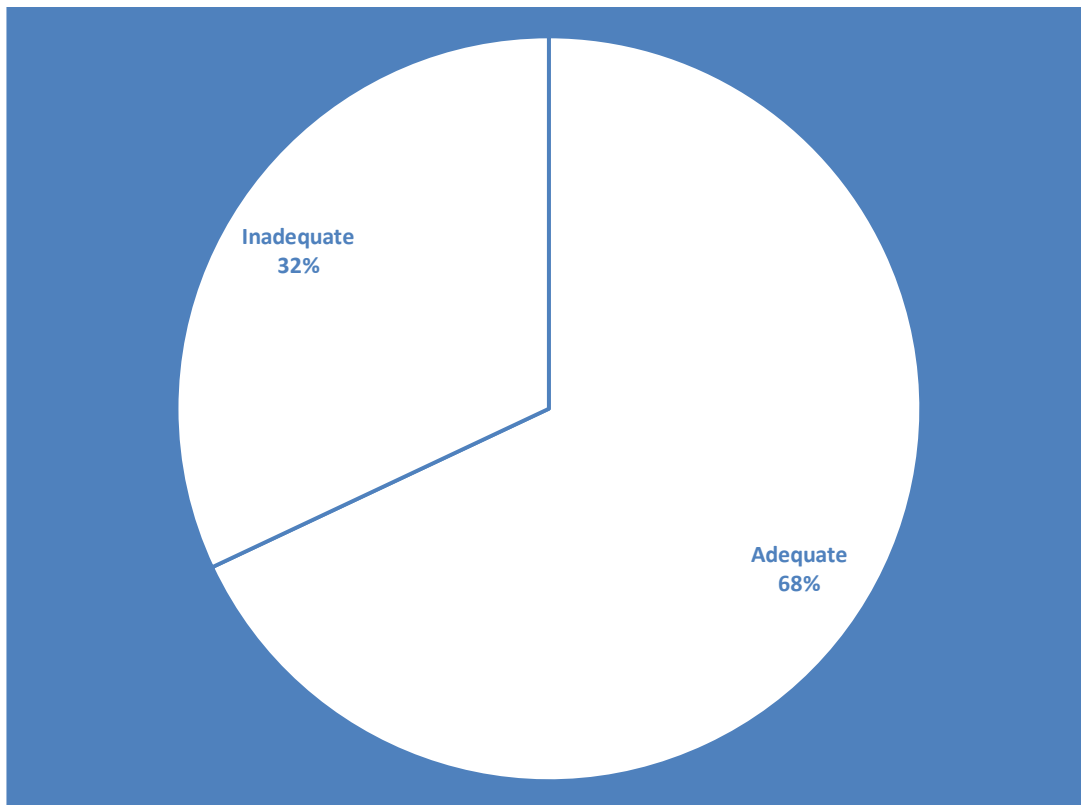


Figure 4.1: Providers level of knowledge on EC

4.4 Attitude and belief factors

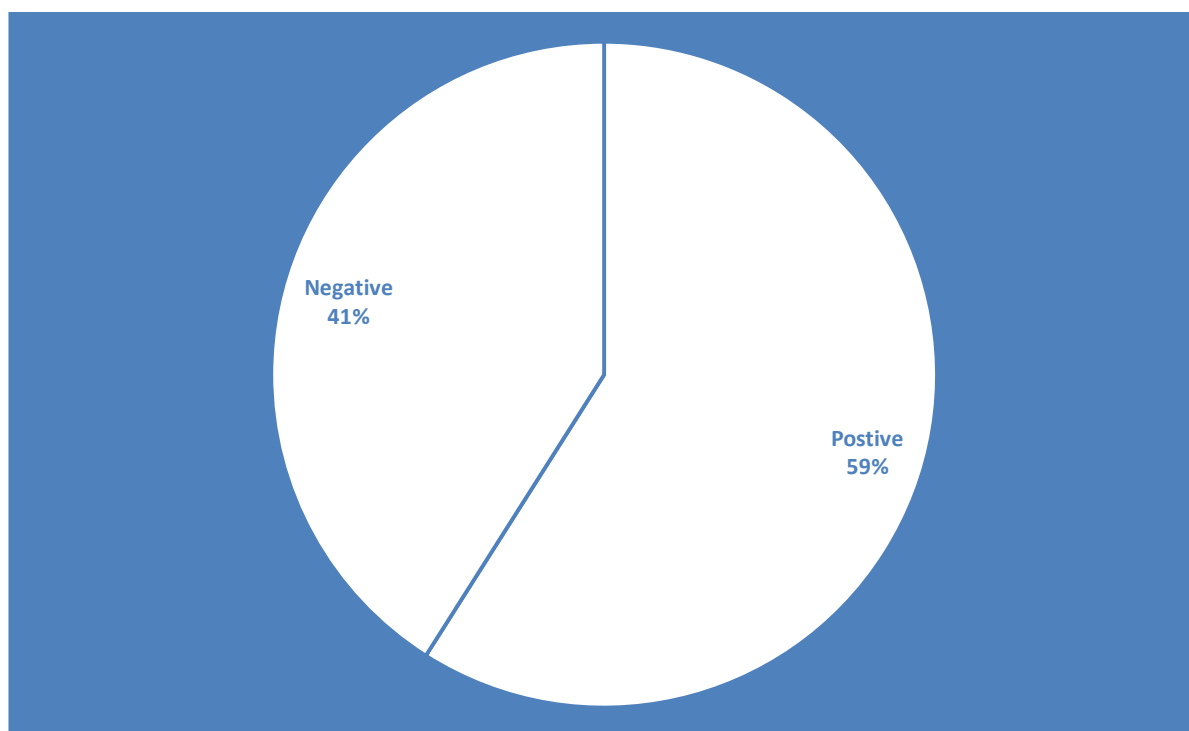
This section shows attitude and beliefs of providers towards EC. More than half of the providers 193(64.3%) have had the opportunity to prescribe EC. Majority of the providers 262 (87.3%) agree that the benefits of EC outweighs its risks. More than half 204 (68%) of the providers agree that EC should be discusses at routine consultations. However, more than half of the providers 186 (62%) agree that EC use discourages regular contraceptive use. A little above half 180 (60%) of the providers are satisfied with their current knowledge on EC. Less than half of the providers142 (44%) agree that they will refer a case to a gynaecologist for EC prescription. Majority of the providers 83% (n=249) in this study are interested in learning more about EC. More than half of the providers 64.3% (n=194) of the providers believed EC should be widely advertised. These are shown in Table 4.5.

Table 4.5: Providers attitude and belief about Emergency Contraceptive prescription

	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
Have opportunity to prescribed EC	60 (20.0)	133 (44.3)	81 (27.0)	26 (8.7)
Benefits of EC outweighs its risks	114 (38.0)	148 (49.3)	24 (8.0)	14 (4.7)
EC can be discussed at routine consultations	93 (31.0)	111 (37.0)	60 (20.0)	36 (12.0)
EC use discourages regular contraceptive use	49 (16.3)	137 (45.7)	87 (29.0)	27 (9.0)
Satisfied with current knowledge of EC	27 (9.0)	153 (51.0)	91 (30.3)	29 (9.7)
I will refer a case to a Gynecologist for EC prescription	57 (19.0)	75 (25.0)	116 (38.7)	52 (17.3)
I am interested in learning more about EC	142 (47.3)	107 (35.7)	36 (12.0)	15 (5.0)
EC should be widely advertised	75 (25.0)	118 (39.3)	58 (19.3)	49 (16.3)

4.4.1 Level of attitude of providers towards Emergency Contraceptive

Figure 4.2 shows providers' level of attitude towards EC. More than half of the providers 59% have positive attitude towards EC.

**Figure 4.2: Providers level of attitude towards Emergency Contraceptive**

Roles of providers

This theme represents the various roles played by providers in dispensing ECs. Two main subthemes ‘social’ and ‘professional’ roles were identified under this theme.

Professional roles towards EC

These are roles and responsibilities of providers in their professional capacities as health professionals. This involves administering ECs correctly in terms of timing and dosage as well. Some participants indicated how they played their professional roles.

“I ask my clients important questions to ascertain the timing and condition of the client in relation to the EC and I also explain the process of taking EC as well as the side effect they are likely to experience and what to do when they experience it.” (Abena)

“I request for pregnancy tests on my entire client before prescribing EC for them. I also ask them about their menstrual cycle history before giving them the EC” (Ama)

Social roles of providers

This role involves providing the needed support in terms of counselling and correcting deceptions and beliefs about ECs.

Some providers reported how they played their social roles,

“I counsel all my clients to help them understand the use of EC and how they work on the human body. I try to understand their beliefs and fears when counselling them so that they will have adequate information to make informed decisions” (Mansa.)

“I ask them questions about their cultural and religious beliefs and help them to understand the use of EC and its role”

Beliefs of providers

This theme represents providers’ beliefs on use and prescription of EC that is the opinion, a feeling of certainty, and standards of the providers on the EC. Two sub-themes ‘cultural’ and ‘religious’ beliefs.

Cultural beliefs of providers

This subtheme represents cultural beliefs of providers, these may be behavior patterns, arts, thoughts and any **other man-made** work that is, learned and shared which influence their dispensing of ECs. None of the twelve providers interviewed reported that cultural beliefs influence their practice.

“I have no cultural belief that influence my duties and roles as a provider. I see it a professional duty that must not be influenced by beliefs because of that I detach my cultural belief and think rather about the consequences of the client not receiving the EC” (Yaa)

“I have no cultural belief to prevent me from dispensing EC to my clients. I also try to help my clients who come such beliefs to understand the work of EC”. (Ama)

Religious beliefs of providers

This represents religious beliefs of providers that is the belief in the reality of a supernatural being, which influence their dispensing of ECs. None of the twelve providers interviewed reported that religious beliefs influence their practice.

“The use of EC does not mean abortion and this make it easy for me to recommend it to my clients. Also, I see my duty as a way of preventing unwanted pregnancy especially among the youth and preventing maternal death.”(Mansa)

My religion has never influenced my duties and roles as an EC provider. I always ensure that clients are provided with the right counsel on EC that will prevent unwanted pregnancies” (Adwoa)

4.5 Perceived barriers to EC

Table 4.6 shows providers’ perception on barriers to EC prescription. Close to half of the providers 131(43.7%) perceived EC use promotes promiscuity. More than a third 110 (36.7%) of the providers feel uncomfortable prescribing EC because of religious/ethical reasons. More than half of the providers 153 (51%) are concerned about liability when prescribing EC. Also, more than half of the providers 193 (64.3%) reported that they are

concerned about birth defects when prescribing EC. About a third 79 (26.3%) of the providers reported that they are reluctant to prescribe EC because of their experiences. Finally, about a third 93 (31%) of the providers reported that their religion influences their practice as providers.

Table 4.6: Providers perceived barriers to EC prescription

Barriers		Frequency	Percent
EC use promote promiscuity	Yes	131	43.7
	No	169	56.3
	Total	300	100
Feel uncomfortable prescribing EC religious/ethical reasons	Yes	110	36.7
	No	190	63.3
	Total	300	100
Concerned about liability when prescribing	Yes	153	51.0
	No	147	49.0
	Total	300	100
Concerned about birth/side-effects	Yes	193	64.3
	No	107	35.7
	Total	300	100
Reluctant to prescribe EC because of experience	Yes	79	26.3
	No	221	73.7
	Total	300	100
My religion influences your practice as a provider	Yes	93	31.0
	No	207	69.0
	Total	300	100

Challenges to dispensing ECs among providers

This theme represents providers' challenges to dispensing of ECs. Three subthemes were identified in this theme. 'Perception', 'access' and 'availability'

Perception of providers towards EC

This subtheme has to do with perception of clients about ECs and their side effects. That are the ways providers think or the impression that they have made about the product. This can influence decisions among clients and delays their coming to the clinic for ECs. Others see ECs as drugs for abortion.

“Clients sometimes lie about the time they had sexual intercourse because they are aware they are pregnant and want to abort the child” (Mansa)

“Most clients who come to me have wrong perception about ECs and their side effects. I spend a lot of time to educate them and provide them with accurate knowledge” (Abena)

Access to EC among providers

This subtheme represent access to ECs. Clients do not know where to find ECs and are sometime afraid of being stigmatized by health workers. Some health facilities do not have provisions for ECs.

“Teenagers do not have access to ECs because of stigmatization by other health workers because of their age this usually inhibits them from having access to the EC” (Yaa)

“In some health facilities, finding public services is difficult and sometimes absent. The unit are not easily accessible making it difficult for clients to access them”. (Adwoa)

Availability of EC to providers

This subtheme has to do with availability of ECs at health facilities. When EC are not available at the facility because the facility has run out of the stock client turns to go for alternate mean of avoiding the pregnancy which may be detrimental to their health.

“We sometimes run short of ECs and it’s a long time for us to receive some from the region. So sometimes I ask clients to go and buy it from pharmacies close by and let them take the pill in front of me to be sure they have really bought it”. (Abena)

“There are times that ECs are not available, so I ask them to go for it from other sources. It is difficult to know if they got some or not, it’s not easy oooo” (yaa)

“Clients some of them very young come, when we tell them we don’t have stock they feel we do not want to give them the drug as a punishment and sometimes blame us for their unwanted pregnancy” (Mansa)

4.6 Associations between selected characteristics and level of knowledge of providers on emergency contraceptive

Table 4.7 presents age group, sex, marital status, educational level, religion, and professional groups and their associations with level of knowledge of providers on EC. Age group ($p=0.011$), sex ($p=0.027$) and religion ($p=0.035$) were significantly associated with level of knowledge on EC among providers. However, level of education, professional groups and marital status were not associated with knowledge on EC (Table 4.5).

Table 4.7: Associations between selected characteristics and level of knowledge of providers on EC

Characteristics	Inadequate	Adequate	χ^2	p-value
Age group (years)				
Less than 30	32.3	26.6	7.468	0.011*
30 and above	67.7	73.4		
Level of education				
Secondary	74.6	11.6	2.821	0.143
Tertiary	25.4	88.4		
Marital Status				
Single	65.5	24.0	1.981	0.645
Married	19.4	65.6		
Divorced	2.9	10.4		
Sex				
Male	63.1	46.6	8.623	0.027*
Female	36.9	53.4		
Religion				
Christianity	7.7	72.4	16.07	0.035*
Moslem	86.3	24.1		
Traditionalist	6.0	3.5		
Professional group				
Doctor	16.7	33.6	2.428	0.286
Pharmacist	69.0	36.7		
Midwife	14.3	29.7		

*Significant at 0.05

**Significant at 0.01

4.7 Associations between selected characteristics and level of attitude of providers towards emergency contraceptive.

Table 4.8 presents age group, sex, marital status, educational level, religion, and professional groups and their associations with attitude of providers towards EC. Age group ($p=0.031$), sex ($p=0.015$) and religion ($p=0.023$) were significantly associated with level of attitude on EC among providers. However, level of education, professional groups and marital status were not associated with providers' attitude on EC (Table 4.6).

Table 4.8: Associations between selected characteristics and level of attitude of providers towards Emergency Contraceptive

Characteristics	Negative attitude	Positive attitude	χ^2	p-value
Age group (years)				
Less than 30	28.3	66.6	5.523	0.031*
30 and above	72.7	33.7		
Level of education				
Secondary	65.5	47.2	1.379	0.259
Tertiary	34.5	52.8		
Marital Status				
Single	33.7	34.4	2.732	0.583
Married	23.4	35.5		
Divorced	42.9	30.1		
Sex				
Male	32.4	32.2	6.328	0.015*
Female	67.6	67.6		
Religion				
Christianity	31.7	69.1	12.14	0.023*
Moslem	58.3	24.1		
Traditionalist	10.0	6.8		
Professional group				
Doctor	32.7	26.2	1.268	0.625
Pharmacist	42.0	23.8		
Midwife	25.3	50.0		

*Significant at 0.05

**Significant at 0.05

4.8 Factors influencing emergency contraceptive prescription among providers

Logistic regression analysis showed significant predictors of emergency contraceptive dispensing. These were gender, knowledge, attitude, access, availability and skills. When adjusted for those significant at 0.20 gender, knowledge, attitude, access, availability and skills were significant predictors of dispensing of emergency contraception. Males were 3 times more likely to dispense compared with females (AOR=3.65; 95% C.I. 1.29-4.38). Providers with adequate knowledge on EC were more likely to dispense EC compared with those who had inadequate knowledge (AOR=2.26; 95% C.I. 1.55-3.14).

Providers with positive attitude towards EC were more likely to dispense EC compared with those who negative attitude (AOR=3.06; 95% C.I. 1.73-3.73). Having access to EC increased providers ability to dispense two times compared with having no access (AOR=2.03; 95% C.I. 1.59-3.18) as well as availability (AOR=2.14; 95% C.I. 1.54-3.09). Finally, trained EC providers were more likely to dispense EC compared to those who were untrained (AOR=2.14; 95% C.I. 1.02-2.29). (Table 4.9).

Table 4.9: Predictors of emergency contraceptive prescription among providers

Characteristics	Unadjusted Odds Ratio OR (95% CI)	Adjusted Odds Ratio OR (95% CI)
Age group (years)		
Less than 30	1.41 (0.87-1.86)	1.26 (0.93-1.91)
30 and above	Reference	Reference
Gender		
Male	3.83 (1.38-4.72)*	3.65 (1.29-4.38)*
Female	Reference	Reference
Religion		
Christian	1.79 (0.95-1.86)	1.36 (0.79-1.76)
Moslem	1.86 (0.78-1.97)	1.56 (0.65-1.84)
Traditionalist	Reference	Reference
Knowledge		
Adequate	2.31 (1.63-3.29)*	2.26 (1.55-3.14)*
Inadequate	Reference	Reference
Attitude		
Positive	3.28 (1.86-3.92)*	3.06 (1.73-3.73)*
Negative	Reference	Reference
Access		
Yes	2.17 (1.71-3.28)*	2.03 (1.59-3.18)*
No	Reference	Reference
Availability		
Yes	2.33 (1.62-3.22)*	2.14 (1.54-3.09)*
No	Reference	Reference
Skills		
Trained	1.85 (1.08-2.38)*	1.73 (1.02-2.29)*
Untrained	Reference	Reference

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter discusses the findings of the study in relation to literature reviewed on providers' attitude and perception on emergency contraceptives. Furthermore, the findings are also discussed in accordance with the stated objectives and research questions.

5.1 Socio-demographic characteristics

In this study, the youngest provider was 24 years while the oldest was 58 years. The professions used in this study (midwives, pharmacists and doctors) mostly require a tertiary level education. Most Ghanaians complete their tertiary education around the age of 23 years. The health facilities used in this study are government facilities and the retirement age is 60 years. Thus, the oldest age of 58 years in this study is in line with the retirement age of providers in this study. The age range in the study suggests a mix of new, fairly experienced and more experienced providers in this study. This distribution is also supported by the age group distribution observed in this study. There were more females in this study than males. This is expected as there are generally more females in Ghana compared with males. This is supported by the 2010 national census and the Ghana Demographic Health Survey of 2014 (GSS, 2011). Also, almost all the midwives in this study are females. This may also account for the higher proportion of females in this study compared with males. A greater proportion of the providers had tertiary level education. This distribution is expected as all three professions used in this study require a minimum of diploma degree to practice. Because of the age distribution observed in this study, almost all the providers in the study were married with a few single. The study also showed that majority of the providers were Christians. This distribution is also in agreement with the

national religious distribution where about 75% of Ghanaians are Christians (Ghana Statistical Service (GSS), 2011). The distribution of providers' professional group in this study was also in line with existing proportions in all four hospitals used in this study. The study also interviewed 12 providers with similar distributions.

5.2 Knowledge of health professional on EC

In this study, awareness of EC was high as majority of the providers reported that they know about EC. This is to be expected as all the participants were health professionals who might have learnt about EC during their formal training. Also, while practicing they encounter EC dispensing. This may account for the high awareness of EC in this study. Among those interviewed, majority of them were aware of EC and have heard of EC as well as dispensed them in the last 12 months. In a similar study conducted by Kang and Moneyham (2008) among providers (48%) in Korea found that providers generally lacked knowledge about emergency contraception and held misconceptions in this regard. More than half of the providers in this study did not agree that the correct time for initiation of POEC was 120 hours or 5 days while a third reported 120 hours. This is to be expected as the ideal time has always been 72 hours. Much research suggests that emergency contraceptive reduces the risk of pregnancy of women who have had unprotected sexual intercourse by approximately 75 % to 89% if is taken within 72 hours after engaging in unprotected sexual intercourse (Goodwin, Montoro & Muderspach, 2010).

However, recent studies have shown that EC can be very effective within 120 hours if taking right after pregnancy as fertilization occurs within 5-7 days after unprotected sex. In a similar study, Szabo (2013), reported that to be effective, EC must be used within 72 hours of unprotected or poorly protected sex. Contrary to the findings of this study, Teixeira

et al., (2012), reported in their study that people at risk and the providers to whom they turn are not always aware of this time constraint.

About a fifth of the providers reported that EC has been shown to be an abortifacient. Contrary to this finding, recent studies have shown that EC is not abortive because of its method of action. Mackin and Clark (2011) found that 38% of pharmacists in Iowa at the time they were surveyed believed EC to function as an abortifacient. Likewise, Richman, et al. (2012) found that 46% of pharmacists responding to the survey believed EC induces abortion. In both cases, it is difficult to know where misunderstanding of chemical mechanism of levonorgestrel ends and personal beliefs concerning abortion begin. It prevents the sperm from fertilizing the egg and as such once there is fertilization, its action is irrelevant. Research has shown that the primary mechanism of action is by the prevention or postponement of ovulation through its effect on the luteinizing hormone (LH) surge (Allen and Goldberg, 2007), but that will work only if given at least two days before ovulation (Baird, 2009).

A little above half of the providers reported that a pregnancy test is necessary before EC. This finding is correct and in agreement with best practice when it comes to emergency contraceptive dispensing. EC is not effective when used after pregnancy. This will lead to unwanted pregnancies among clients. It is therefore important for anyone dispensing EC to confirm if the client is pregnant or not. More than half of the providers agree that most common side effect of EC is menstrual irregularities. This finding is true as most ECs have been reported to alter the patterns of menstrual cycles among those who take them. Having knowledge on the side effects of EC will enable the provider to explain these side effects to the clients before dispensing. However, there are no contraindications. Specifically, Deborah (2006) reported that all women can use EC, including women who have contra-

indications for oral contraceptives, as there are no absolute contra-indications for its use. About a fifth of the providers reported that IUD can be effective after fertilization. Several studies shown that inadequate provider knowledge is an important barrier to EC provision and use in a range of settings (Nigeria: Ebuehi et al., 2006; Fayemi et al., 2010; Northern India: Tripahi et al., 2003; Turkey: Sevil et al., 2006; Aksu et al., 2010; Laos: Sychareun et al., 2010; and Europe: Uzuner et al., 2005; Szucs et al., 2010). Studies from the United States indicate that even “knowledgeable” providers do not always have accurate knowledge of how and when EC should be taken or of its mechanisms of action (Sherman et al., 2001; Wallace et al., 2004; Lawrence et al., 2010; Farris et al., 2010).

Providers’ knowledge on this was not adequate as IUD is effective in preventing pregnancy over a long period (5-10 years). After pregnancy, IUD cannot prevent or abort the pregnancy. Close to half of the providers reported that POEC should be repeated if a woman vomits within two hours. Majority of the providers in this study have had the opportunity to learn about EC. This finding is important as trainings, workshops and seminars increase the knowledge, awareness and practice among providers. This leads to improved level of knowledge among providers leading to improved services to them. In this study, majority of the providers reported that they have been trained on several aspects of EC dispensing and its side effect. However, about a third have not been trained in the dispensing, side effects and challenges of EC usage. Trained providers have been reported to dispense EC much better than untrained providers. This can be attributed to lack awareness and knowledge among such population. Finally, more than half of the respondents in this study have adequate knowledge about EC dispensing and usage. This is to be expected as majority of the providers are working in health-related field. This finding is also as result of experience through practice that can inform our practice. This finding is supported by several studies. Specifically, Aksu et al. (2010) reported in their study that

lack of awareness and knowledge among providers who have not been trained was responsible barriers to usage of emergency contraceptive among clients. Contrary to this finding, Sychareun et al., (2010) also reported a higher knowledge on the mechanisms of IUD before and after pregnancy. This was also recently supported by Szucs et al. (2010).

5.3 Attitude and belief factors

More than half of the providers have had the opportunity to prescribe EC. Having the opportunity to prescribe medication improves providers' knowledge, awareness and practice of EC dispensing. Majority of the providers agree that the benefits of EC outweighs its risks. This finding is expected as most papers and research have reported that the benefits of EC outweighs its risks. Despite the enormous findings of the benefit of EC, its main side effect has been disruption in the menstrual cycle of clients. More than half of the providers agree that EC should be discussed at routine consultations. This finding is of utmost importance as this can lead to prevention of unwanted pregnancies and abortion. Understanding the role of EC and its challenges will adequately inform clients on best practices and usage of EC. Studies have found that providers seldom educate their clients about EC and do not proactively assess their need for EC in routine health and family planning visits, either in Northern or Southern countries (Delbanco et al., 1998; Karasz et al, 2004) or in Africa (Ebuehi et al., 2006).

However, more than half of the providers in this study agree that EC use discourages regular contraceptive use. This finding agrees with other studies (Aksu et al., 2010; Sychareun et al., 2010; Szucs et al., 2010) who have reported that some adolescents do not practice family planning because of EC as well as unprotected sex leading to unwanted pregnancies. A little above half of the providers are satisfied with their current knowledge on EC. This is to be expected as the three professions in this study have been adequately

educated on EC and have gain adequate knowledge, awareness and practice of EC over the years of practice. Less than half of the providers agree that they will refer a case to the appropriate health personnel for EC prescription. Most users of EC do not consult their gynaecologist before using EC. This may result in unwanted pregnancies as well as contraindications. Majority of the providers in this study are interested in learning more about EC. This finding is expected as new ECs with more advanced mode of action and side effects as well as therapeutic effects have been developed recently developed. In order to maintain current and accurate knowledge on this ECs, providers must be abreast with current knowledge on ECs. More than half of the providers believed EC should be widely advertised. To increase awareness and practice of ECs, adverts explaining their mode of action, usage, importance and side effects must be adequately advertised. This will improve on awareness, knowledge and practice of ECs in the Accra metropolis. In view of the above findings, this study revealed that more than half of the respondents have positive attitude toward EC dispensing. This finding is to be expected as most providers in this study have adequate awareness, knowledge, practice and perception about ECs. This will strengthen the dispensing patterns and reduce the prevalence of unwanted pregnancies as well as abortions in the Accra metropolis. In this study, providers had to roles namely, professional and social roles. In a similar study by Sullivan (2012), providers suggested improving provider knowledge and perception through seminars and workshops positively impacted on their knowledge and improved their cultural and religious perception.

In terms of professional roles, providers ensured that in the conduct of their duties, they do not flout their professional responsibilities while upholding their social roles. This requires providers to have a balanced view of the dispensing procedures of ECs. In this study, providers identified the role of cultural beliefs and religious beliefs. In this regard, some religious organizations frown upon the use of ECs as this may be equivalent to

abortion. Such believers argue that the ECs have abortive properties. These beliefs and findings have been debunked by recent findings on the abortive properties of ECs. In this study, providers reported that their religious and cultural beliefs do not influence their dispensing decisions. This is to be expected as providers in this study have been adequately taught about the various aspects of ECs usage and dispensing. This is supported by Ahmed & Shaaban (2013) who reported similar findings in this study. However, Abdujolghani et al. (2009) reported contrary findings in their study. In their study, providers were influenced by their cultural and religious beliefs toward contraceptives.

5.4 Perceived Barriers to EC

In this study, about half of the providers' perceived EC use to promotes promiscuity. Most clients come to the health facility without knowing that ECs do not prevent STIs as well as abort pregnancies after fertilizations. These false beliefs have led to majority of teenagers developing STIs and unwanted pregnancies. More than a third of the providers feel uncomfortable prescribing EC because of religious/ethical reasons. These findings contradict findings from the interview which showed that providers were not influenced by their religious and cultural beliefs. Reasons for this disparity is unclear but may be due to the difference in data collection methods. Providers' concerns include: reluctance to actively promote EC for fear that it will encourage unprotected sex and therefore increase risk of HIV and sexually transmitted infections (STI) (Ziebland, 1999; PPAG, 2001; Karasz et al., 2004); concern for health side-effects of frequent use of high-dose pills (PPAG, 2001); and concerns about the potential for regular EC use to replace regular family planning, though this has been refuted (Marston et al., 2005).

More than half of the providers are concerned about liability when prescribing EC. This is to be expected as some clients have come to the health facilities already pregnant

and have blamed clients for their pregnancy. This experience has led to providers being reluctant to dispensing ECs in the Accra metropolis. Also, more than half of the providers reported that they are concerned about birth/side-effects when prescribing EC. This finding may be due to misconceptions about the use of ECs. Providers may have the notion that ECs influence the outcome of pregnancies. However, recent studies have shown that ECs do not influence birth outcomes. According to Sychareun et al (2010), providers fear that they may be held reliable for any outcome of the use of EC they have directly dispensed. Another study, Szucs et al. (2010) also reported that providers negative perception about EC limits them from prescribing or dispensing EC to clients.

About a third of the providers reported that they are reluctant to dispense EC because of their past experiences. In this study, perceptions such as abortive behavior of ECs, cost of ECs, access to ECs and side effects of ECs have prevented clients from coming to health facilities on time to prevent unwanted pregnancies. In some health facilities, ECs were not available at the time clients needed them due to bureaucracies at the ministry of health and delays in supplies.

In this study, age group, sex and religion were significantly associated with level of knowledge on EC among providers. However, level of education, professional groups and marital status were not associated with knowledge on EC. Age group, sex and religion were significantly associated with level of attitude on EC among providers. However, level of education, professional groups and marital status were not associated with providers' attitude on EC. Contrary to the findings of this study, a study conducted in Switzerland among health providers on the knowledge and practices of EC showed that most of them (89.3%) were knowledgeable in use of EC. EC awareness was positively associated with their level of education and rank (Mackin & Clark, 2011).

Males were more likely to dispense ECs compared with females. Providers with

adequate knowledge on EC were more likely to dispense EC compared with those who had inadequate knowledge. Providers with positive attitude towards EC were more likely to dispense EC compared with those with negative attitude. Having access to EC increased providers' ability to dispense two times compared with having no access as well as availability. Contrary to findings of the study past, part of a global trend to move ECP from a prescription to an over the counter (OTC) product, the commercial private sector is playing an increasingly important role. ECP are widely available in pharmacies (Westley et al., 2013) and sold by pharmacists and retail staff also known as drug vendors or patent medicine vendors (Pacque-Margolis, Cox & Puchett, 2013). Finally, in this study, trained EC providers were more likely to dispense EC compared to those who were untrained. Like the finding of this study, Pacque-Margolis et al. (2013) providers have been trained to distribute ECP including the police in situations where women have been sexually assaulted.

5.5 Limitation

1. The non-probability sampling technique of this study was one of its major limitations. The number of health facilities were selected based on limited time and resources, the sample may not be representative of the entire metropolis.
2. Since the interviews were semi-structured, questioning and responses were often altered by participants based on the unanticipated flow of conversation. Generally, the researcher tried to follow the structured interview guide but occasionally the interviewees' responses or tone of voice caused the researcher to ask questions differently due to such occurrences. This may have caused the researcher to digress from the interview guide.

3. The use of questionnaires and interview guide as data collection tools may have introduced some recall bias and this might introduce some bias in the findings of the study and prevented generalization of the findings.

CHAPTER SIX

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 Conclusion

In this study, more than half of the providers had adequate knowledge on ECs and awareness was very high. Providers had adequate knowledge on the definitions, side effects and mode of action of ECs. A large proportion of the providers in this study have been trained on various aspects of ECs while a small proportion were only using knowledge obtained during their undergraduate studies. A little above half of the providers had positive attitude towards EC dispensing. Per the interviews, providers were not influenced by their religious and cultural beliefs in dispensing ECs. Providers in this study were clearly aware of their professional and social roles and this did not influence their dispensing patterns. Barriers in this study were gender of provider, religion and age group. In addition, access, availability and cost of ECs also influenced providers dispensing patterns. In a few cases, religious and cultural beliefs influenced providers EC dispensing patterns. Finally, past experiences and perceived side effects of ECs also influenced providers' attitude towards ECs.

6.2 Recommendation

The findings of this study make provisions for the under listed recommendations to;

A. Health service providers and training institutions

1. Reproductive health education should be taught in all health institutions as part of their curriculum. This will make all health personnel adequately equipped for dispensing ECs in the Accra metropolis.

B. Ghana Health Service

2. Emergency contraception should be popularized among potential users like college students. This can be done through advocacies in the media, seminars, and video shows etc. This can reduce the burden of unintended pregnancies and hence abortions among the youth in the Accra metropolis.
3. Advocacy and information/education/communication (IEC) activities about emergency contraception should be strengthened and materials provided where needed.
4. Emergency contraception should be made available to all reproductive health facilities and to all women who seek it provided no contraindications are present.
- 5 Health care providers should receive more training on how to accurately and knowledgeably counsel anyone seeking EC.

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APPENDICES

Appendix A: Questionnaire

PROVIDER KNOWLEDGE AND ATTITUDE ON EMERGENCY

CONTRACEPTIVE IN THE ACCRA METROPOLIS

PARTICIPANT CONSENT

I am Yvonne P.D.D. Coleman a student of the School of Public Health, University of Ghana. I am conducting a study on Provider Knowledge and Attitude on Emergency Contraceptive in the Accra Metropolis. The response you give will assist in the establishment of facts relating to providers' knowledge and attitude, practice and perception on EC. All information provided will be strictly for academic purposes and will be highly treated with the greatest level of confidentiality. Kindly tick (✓) the most appropriate response in all three sections.

Thank you.

Participants consent: Yes [☐] No [☐], If No, end of interview

Questions	CODE	Questions	Code
Questionnaire ID	QID	Interview code	ICODE
Question number	QN		
Date	DATE		

Q NO.	Sociodemographic Characteristics	Coding categories	Skip to	CODES
Section A: Demographic characteristics of respondents				
1	Age of respondents	 years		
2	Sex	Male.....1 Female..... 2		
3	Educational level of respondents	No formal education.....1 Primary.....2 Middle School/ JHS.....3 Technical/Vocational/SHS.....4 Tertiary.....5		
4	Marital status	Single.....1 Married.....2 Divorced.....3 Widowed.....4		
5	Religion	Christian.....1 Moslem.....2 Traditionalist.....3		
6	What is your professional group?	Doctor.....1 Pharmacist.....2 Midwife3		

Section B: Knowledge

Q NO.	Knowledge factors	Coding categories	Skip to	CODES
Section B: Knowledge factors				
1	Do you know about EC?	Yes.....1 No.....2		
2	The correct time for initiation of POEC is 120 hours.	Yes.....1 No.....2		
3	Does research show that EC acts as an abortifacient?	Yes.....1 No.....2		

4	Is pregnancy test necessary before prescribing EC?	Yes.....1 No.....2		
5	Is menstrual irregularity the most common side-effect of EC?	Yes.....1 No.....2		
6	After fertilization, can an IUD be effective for EC?	Yes.....1 No.....2		
7	Should POEC be repeated if a woman vomits within two hours?	Yes.....1 No.....2		
8	Did you have an opportunity to learn about EC?	Yes.....1 No.....2		

Section C: Attitude and beliefs

Q NO.	Attitude and belief factors	Coding categories	Skip to	CODES
Section C: Attitude and belief factors				
1	I have had an opportunity to prescribe EC?	Strongly agree..... 1 Agree.....2 Disagree.....3 Strongly disagree....4		
2	Do you feel that benefits of EC outweigh the risks?	Strongly agree..... 1 Agree.....2 Disagree.....3 Strongly disagree....4		
3	Is EC appropriate for discussion at routine consultation?	Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree.... 4		
4	Does EC-use discourage regular contraceptive-use?	Strongly agree..... 1 Agree.....2 Disagree.....3 Strongly disagree....4		
5	Are you satisfied with your current knowledge of EC?	Strongly agree..... 1 Agree.....2 Disagree.....3 Strongly disagree....4		
6	Would you refer a case to a gynaecologist for prescription of EC?	Strongly agree..... 1 Agree.....2 Disagree.....3 Strongly disagree....4		
7	Are you interested in learning more about EC?	Strongly agree..... 1 Agree.....2		

		Disagree.....3 Strongly disagree....4		
8	Should EC be more widely advertised?	Strongly agree.....1 Agree.....2 Disagree.....3 Strongly disagree....4		

Section d: Perceived barrier

Q NO.	Barriers	Coding categories	Skip to	CODES
Section D: Barriers				
1	Does EC-use promote promiscuity?	Yes.....1 No.....2		
2	Do you feel uncomfortable prescribing EC for religious/ethical reasons?	Yes.....1 No.....2		
3	Are you concerned about liability when you prescribe EC?	Yes.....1 No.....2		
4	Are you concerned about birth-defects/side-effects?	Yes.....1 No.....2		
5	Are you reluctant to prescribe EC because of an experience with its use?	Yes.....1 No.....2		
6	Does your religion influence your practice as a provider?	Yes.....1 No.....2		

THANK YOU

Appendix B: Interview Guide

Demographics

Tell me about yourself

Knowledge

Are you aware of Emergency Contraceptive (EC)?

What is your understanding of this EC?

Skills

Have you had any training to dispense EC? What kind of training?

What skills are required to supply EC to someone? Are there any specific areas of difficulty?

Social/professional role and identity

Why do you provide the EC in your facility?

Do you think it is an appropriate part of your role to be dispensing EC?

Does your ethical position affect your practice with regard to the EC?

How do you reconcile this with your duty of care?

Beliefs about capabilities

Do you find it difficult to apply a guideline to assess whether someone should receive the EC?

What problems have you encountered?

What would help you to overcome these problems?

Do you think you have the skills to provide the EC?

Do you fear that you might miss something when assessing whether someone should receive the EC?

Memory, attention and decision processes

What thought processes might guide your decision to provide the EC to someone?

Beliefs about consequences

In your experience of providing the EC, have you come across problems in your population?

What do you think about the evidence behind the EC?