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KNOWLEDGE, ATTITUDE AND PERCEPTION OF CONTRACEPTIVE USE AMONG STUDENTS OF COLLEGES OF EDUCATION IN EASTERN AND GREATER ACCRA REGIONS: IMPLICATIONS FOR COUNSELLING PRACTICE

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A thesis in the Department of Counselling Psychology, Faculty of Educational Studies, submitted to the School of Graduate Studies, in partial fulfilment of the requirements of the degree of Doctor of Philosophy (Guidance and Counselling) in the University of Education, Winneba

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DECLARATION

Student's Declaration

I, Doris Amoako Jnr, declare that with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, the thesis is entirely my original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

Signature……..……..……...

Date: …….

Supervisors' Declarations

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of thesis as laid down by the University of Education, Winneba.

Name of Supervisor: Prof. Stephen Antwi-Danso (Principal)

Signature……..……..…….....

Date: …….

Name of Supervisor: Dr. Samuel Oppong Frimpong

Signature……..……..…….....

Date: …….

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DEDICATION

This piece of work is dedicated to my dearest husband, Felix Nii Teiko Sackey; my children, Felix Nii Kwashie-Kojo Sackey and Benjamin Emmanuel Nii Kwashie-Kojo Kuma Sackey and my nephew Evans Kofi Twum.

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ABSTRACT

The study used a mixed approach involving quantitative and qualitative methods to explore the perceptions, attitudes and knowledge of students from Colleges of Education in the Greater Accra and Eastern regions of Ghana on contraceptive use. Stratified, simple random and convenience, census, proportional sampling techniques were used to sample 434 students from the population for both the quantitative and qualitative approaches. A cross-section survey was initially conducted among 380 students from the Colleges of Education. Those who were engaged in the qualitative aspects were fifty-four. The study used semi-structured questionnaire with closed-ended questions for the survey. Semi-structured interview and focus group discussions guides were also used. The quantitative data were analysed using descriptive statistics, anova, reporting the means and their standard deviations. The independent sample t-test was also used to test the gender difference in contraceptive use among males and females. The qualitative data were analysed thematically. The findings generally indicated that, the College of Education students had satisfactory perceptions, attitudes and knowledge on contraceptive use. More than half of the students had good knowledge on contraceptives and indicated their use in preventing pregnancies and STIs. The perception of students included the use of contraceptive to preventing pregnancy and sexually transmitted infections, affordability and availability perceptions of contraceptives. On attitudes towards contraceptives, some students adhered to using contraceptive due to the risk of unintended pregnancies and STIs. This notwithstanding, there were identified gaps with regard to some of their perceptions and attitudes towards contraceptive use. Perception gaps included fears due to infertility and negative effects associated with the use of contraceptives, embarrassment from use and seeking contraceptive information, contraceptives as a foreign concept and contraceptive use as a woman‘s responsibility. The study also revealed students remarking the difficulty in reaching orgasm when using contraceptives and engaging in unprotected sexual intercourse in the absence of contraceptives. There was a significant difference between the use of contraceptives between males and females. Based on the findings, there is the need for pragmatic steps such as education, formation and strengthening health clubs in schools to provide accurate information to students. The need for adequate counselling and guidance support is critical to improve the perceptions, attitudes and knowledge of students from the Colleges of Education in the Greater Accra and Eastern regions of Ghana.

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CHAPTER ONE

INTRODUCTION

1.0 Overviews

This study focuses on the contraceptive use among students of colleges of education in Eastern and Greater Accra regions: implications for counselling practice. The chapter provides general introduction to the study. It begins with the background to the study and presents the statement of the problem as well as the purpose of the study. The chapter also has a presentation of the research objectives, hypotheses, research questions and significance of the study. Delimitation and limitation of the study and operational definitions of terms and abbreviations are all provided in this chapter. It concludes with a summary of the chapter as well as the organization of the study chapters.

1.1 Background to the Study

Young age is a period in human development characterized by significant physiological, psychological and social changes (Orben et al., 2020; Vijayakumar et al., 2018). This stage of life is also characterized with the development of sexual behaviour which defines a person‘s sexual life. Sexual behaviour is any activity between two persons that induces sexual arousal (Chigbu et al., 2021). Sexual behaviour may be categorised as healthy or risky (Da et al., 2018). Common examples of risky sexual behaviours include unprotected sexual intercourse, sexual promiscuity and sex resulting into unwanted pregnancy (Mirzaei et al., 2016; Othieno et al., 2015). Risky sexual behaviour is a phenomenon which is common among the youth, particularly students worldwide and in Ghana (Amaranganie et al., 2018).

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Sexual activity among the younger generation varies from culture to culture and those who experience first coitus at early ages are less likely to take the necessary precautions to prevent unwanted pregnancy or sexually transmitted diseases (Kitila et al., 2015). The proportion of young women reporting unintended pregnancies and unmet needs for contraceptives remains high in developing countries (WHO, 2019, 2020d). Initiation of sexual activity at an earlier age can lead to an increase life time number of sexual partners and lower probability of modern contraceptive methods (Kitila et al., 2015).

Preventing and protecting the youth including students from the adverse outcomes of risky sexual behaviour require sexuality and reproductive health education, counselling and contraceptive use among other interventions. To this end, a widespread access and rights to sexual and reproductive health are deemed an integral part of a healthy society (Dawson et al., 2014). In order to avert the unintended pregnancies, contraceptive use has been prioritized as a key intervention (Nsubuga et al., 2016).

Contraceptive is the use of birth control methods to determine the number of children a family would have and even after those children are born (Andi et al., 2014). Contraceptive use remains prominent in demographic and health literature because of its numerous health benefits to women and families such as preventing unintended pregnancies, promoting healthy birth spacing, reducing lifetime risk of maternal deaths and enhancing attainment of development goals (Solanke, 2017).

Approximately 210 million pregnancies occur annually across the world, of which 75 million accounting for about 36% are unplanned (Coetzee & Ngunyulu, 2015). It is reported that around the globe, 222 million women want to prevent pregnancy but are

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not using efficient, contraceptive methods. This leads to an approximately 86 million unintended pregnancies, 33 million births that are not planned and 20 million risky abortions per year (Dawson et al., 2014). Worldwide, half of the conception occurring per day are unplanned and about one fourth are unwanted (Kitila et al., 2015). Throughout the world, students are exposed to the risk of unplanned pregnancies as a result of ineffective or non-use of contraceptives (Gbagbo & Nkrumah, 2019).

Sexual education within the schools and colleges are still a challenging issue and of great concern globally (Awusabo-Asare et al., 2017; Keogh et al., 2018). This is due to its sensitive nature and bias acquired from the ways and values that are personal, regional or associated with local traditions. The WHO health statistics showed that more than 3 million students engage in unsafe termination of pregnancies resulting from non-contraceptive use (WHO, 2020b). According to WHO (2020a), about 10 million unintended pregnancies occur each year among students in the developing world. Complications during pregnancy and childbirth are the leading cause of death globally (WHO, 2020a).

In developing countries, one in three women give birth before the age of 20 and pregnancy-related death during childbirth is two times higher compared to women older than 20 years (Nsubuga et al., 2016). The United Nations Sustainable Development Goal (SDG) three seeks among other things to eliminate maternal and child mortality and improve health for all by 2030 (Apanga & Awoonor-Williams, 2018). The use of contraceptive is recognized as an important intervention towards achieving this target (Apanga & Adam, 2015). Evidence from research indicates that contraceptive use by couples to space childbirth by at least two years has the potential to avert 35% of maternal deaths and 13% of child mortalities while 25% of deaths

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occurring in children below five could be prevented from happening if birth intervals were minimum of three years apart (Eliason et al., 2014).

Young students' sexual activities are a communal, municipal and public health concern. These activities, especially pre-marital sexual activities, seem to be increasing amongst higher educational institution students in countries such as Asia and Africa, because of factors such as rapid urbanisation and exposure to mass media (Mehra et al., 2012). Africa has 53% of its female population in their reproductive age, having high unmet need for contraceptive methods, with the number of females, between the ages of 15 and 24 (WHO, 2020a, 2020b).

Contraceptive use is low in sub-Saharan Africa with a rate of 30% within the sub-region (Ahinkorah et al., 2021; Boadu, 2022). Over the past decade, knowledge and use of contraceptive has increased in many Sub-Saharan African countries, particularly among unmarried women in urban areas (Rokicki & Merten, 2018). The low rate of utilisation of contraceptives among students population could be linked to inadequate knowledge and poor attitudes to contraceptive use (Appiah-Agyekum & Kayi, 2013).

In several studies on contraceptive knowledge and use, contraceptives are generally classified into two types: modern and traditional methods. Modern methods include the pill, intrauterine device, injectable, spermicide, male and female condoms, female and male sterilization and Norplant (WHO, 2020a). Traditional methods usually include periodic abstinence or rhythm, withdrawal and folk methods such as using charms, herbs (Hubacher & Trussell, 2015; Rabiu & Rufai, 2018).

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The two most popular contraceptive methods among emerging adults are oral contraceptives and condoms, followed by injections and withdrawal (Appiah-Agyekum & Kayi, 2013; WHO, 2020a). Westley et al. (2013) explained the percentage of women reporting knowledge and use of contraceptive varies considerably across and within regions as well as across different populations. The rate of premarital sexual activity, unwanted pregnancies and illegal abortions remain higher among students (Somba et al., 2014).

The 2014 Ghana Demographic and Health Survey shows that among females aged 15-19, 73.6% of girls and 96.2% of male students had been involved in sexual activities at least once with 19.4% still in sexually active relationships (Ghana Statistical Service (GSS) et al., 2015). Promoting contraceptive use has always been tagged as being of national importance in the governance of Ghana for some years as a key tool in population control related issues. It is therefore documented in the national development agenda Development Agenda II: 2014-2017 (GSS, 2014).

Among the major sectors requiring urgent attention is the health sector with emphasis on reproductive health and the related commodities such as condoms Security Strategy (2011-2016). With all these efforts, Ghana still records low contraceptive use of (23%). As it pertains in other West African countries, Ghana may miss its desired contraceptive prevalence target of 50% by the year 2020 (Adjei et al., 2015).

Findings from studies among students in Kintampo in the Brong-Ahafo Region of Ghana also revealed that there is high level of inconsistent use of contraceptives among students (Boamah et al., 2014b). In that study, it was evident that some of the respondents were already students and were being confronted with harsh social consequences. Other students had also undergone unsafe abortion procedures and

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might be faced with challenging issues with regard to their fertility in future, while others on the other hand were still carrying their pregnancies which could mean the end of education for such young mothers and bring about immense hardship to both mother and child socially and economically (Boamah et al., 2014b).

There is evidence to suggest that induced abortion and its related complications are the most common outcomes of non-use of modern contraceptives (Beson et al., 2018). For instance, induced abortions account for about 12% of maternal deaths in Ghana, ranking third after haemorrhage (22%) and unclassified causes (14%). In the study by Beson et al. (2018), maternal deaths were estimated to be 1.8 times higher in women without contraceptive use compared to users. Also, just about one in three currently married or in union reported using any method of contraceptives (GSS et al., 2015).

There are however significant variations in contraceptive use among students in Ghana. For example, contraceptive use is highest in Greater Accra and Eastern regions (GSS et al., 2015). In Volta and Northern regions, however, contraceptive use is lowest revolving around only one in every five women (Ghana Health Service, 2018; GSS et al., 2015). The intersection of knowledge and attitudinal factors play an important role in determining the use of contraceptive among students (Ugoji, 2013). This is because it is rather their attitude that influence the knowledge they acquire towards the use of contraceptives (Izugbara et al., 2018; Ugoji, 2013). Misconceptions with regard to the use of contraceptive can lead to limitations in its use including low patronage of available contraceptives among students exposing them to risk of unintended pregnancies as well as contracting reproductive tract illnesses such as HIV/AIDS (Komey, 2016).

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Generally, factors including lack of or inadequate knowledge and awareness, age, culture, ethnicity, religion, poor access to contraceptive services, peer pressure, sources of information, alcohol and substance abuse and lack of partner support (Golbasi et al., 2012). Similarly, in Ethiopia, more than 60% of pregnancies recorded among students are mainly unwanted, leading to unsafe abortion practices that most often end up being the cause of maternal mortality and morbidity (Tessema et al., 2016).

Nsubuga et al. (2016) further explained that many unmarried females who get unintended pregnancies seek abortion services for fear of societal judgment. In the Greater Accra Region of Ghana, for instance, there are over 750,000 young adult females who become pregnant yearly in Ghana (Adabla, 2019). Unintended pregnancies are associated with increased risk of unsafe abortions, maternal morbidity and mortality (Nsubuga et al., 2016).

Knowledge and perceptions about contraceptive use as well as attitude to its use are critical issues in the Ghanaian context especially among college students considering the increase in population and stable fertility rates. Considering limited available data on contraceptives knowledge among college students, this study attempts to provide an insight about college students' knowledge of contraceptives, benefits and types of contraceptives (Nsubuga et al., 2016; Sweya et al., 2016). In research studies conducted worldwide amongst college students, several factors were identified as contributing to the non-utilisation of contraceptives.

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This study aims to explore the knowledge, perception and attitudes of students of colleges of education in both Eastern and Greater Accra regions in Ghana regarding contraceptive use and to provide theoretical explanation about these issues to inform counselling practices.

1.2 Statement of the Problem

Contraceptive use is important in preventing unintended pregnancies, illegal abortion and other complications among students, yet most Colleges of Education students engage in risky sexual behaviours (Boamah et al., 2014b). Globally, the rate of unplanned pregnancies among students at institutions of higher education, continue to increase annually despite the universal awareness and availability of contraceptives to the general population (Mehra et al., 2012; Sedgh & Hussain, 2014).

This situation calls for contraceptive use among students in order to prevent, protect and mitigate the adverse outcomes of unprotected and risky sexual behaviours. In spite of the numerous programmes initiated in Ghanaian basic, second cycle and tertiary institutions to create knowledge and awareness about sexuality and reproductive health as well as contraceptive use among students, there are indications that these programmes have not yielded the desired impact of changing students‘ risky sexual behaviours (Appiah-Agyekum & Kayi, 2013; Othieno et al., 2015). This leads to unwanted pregnancies, illegal and unsafe abortions, school dropout, morbidity and mortality among students (Boamah et al., 2014b; Somba et al., 2014; Tessema et al., 2016).

In Ghana, most Colleges of Education students are sexually active accounting for high levels of unintended pregnancies among students. A media report from the Ghana News Agency in 2013 indicated that five pregnant students from a college in the

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Ashanti Region, Ghana, were sacked from school and suffered denial to write their final year examination because of unintended pregnancies. This punitive measure was meted out to them based on rules and regulations in Teacher Education Division manual by Ghana Education Service for teacher trainees on school attachment. According to Ghana Education Service code of discipline (2021) for teacher trainees, with the special provision on pregnancy, any female student who becomes pregnant will be made to withdraw for a minimum period of one year to apply for re-admission.

This among other incidence results from the low use of contraceptives among students with the unintended pregnancies leading to unplanned deliveries and unsafe abortions and maternal death (Eliason et al., 2014; Westley et al., 2013). This could be attributed to negative perceptions, inadequate knowledge of contraceptives and poor attitudes towards contraceptives usage. While a number of studies such as Appiah-Agyekum and Kayi (2013); Hagan and Buxton (2012); Rokicki and Merten (2018); Tabane and Peu (2015) have been conducted to examine perception of contraceptive use and contraceptive practices and the determinants of contraceptive use among students (Kitila et al., 2015; Nsubuga et al., 2016) only a few empirical studies have been undertaken to understand why contraceptive use among students is low (Amalba et al., 2014).

For example, a qualitative study by Rokicki and Merten (2018) in the Greater Accra Region found perception of contraceptive use to be high but did not explore the gender difference to contraceptive use as this study sought to explore. This is a knowledge gap the study provided. Also, a study done by Beson et al. (2018) in the Greater Accra Region found the knowledge level to be high with 98%. Another study done by Komey (2016) on sexual behaviour and contraceptive use showed that among

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unmarried students in Greater Accra and Eastern regions of Ghana, 67% and 78% of the males and females respectively have practiced premarital sex.

These previous studies have shown that knowledge of contraceptives, especially among college students who are the youth remains limited (WHO, 2014). Sexually active students do not have access to contraceptives and reproductive health services and programmes despite their high knowledge in contraceptives (Nsubuga et al., 2016). In addition, college students lack access to basic reproductive health (RH) information because most of them get information from their peers whose views were often inaccurate and based on misconceptions and rumours (Kitila et al., 2015). In this study, an attempt is made to explore some of the misconceptions and rumours students hold with regards student hold with regards to contraceptive use. This is a step forward to add to existing literature. This therefore serves as a literature gap.

Similarly, a number of researchers have examined the attitudes of students towards contraceptive use (Adjei et al., 2015; Amalba et al., 2014; Boamah et al., 2014b; Grindlay et al., 2018; Izugbara et al., 2018; Ugoji, 2013). For instance, a mixed method study done in Greater Accra Region by Grindlay et al. (2018) found that attitudes toward contraceptive use was negative among male students (54%) but did not look at implication of counselling practice which is embedded in scope of this current study.

Although few studies reported on perception of contraceptive use, contraceptive use practices, attitudes of the youth towards contraceptive use, sexual behaviour and contraceptive use, and the determinants of contraceptive use among students in the Greater Accra and Eastern Regions, they were not specifically done in Colleges of Education within these regions (Beson et al., 2018; Grindlay et al., 2018; Komey,

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2016; Rokicki & Merten, 2018). This implies that, there is absence of empirical studies on the subject matter in this study.

To the best of the researcher‘s knowledge, there has not been any systematic study on knowledge, attitudes and perceptions among students in Colleges of Education. This is a contextual gap which the current study intends to fill. Also, there is a gap in most of these previous studies in relation to contraceptive use and implication for counselling practices in Colleges of Education in the two regions of Ghana. Again, there is a gap on knowledge level on specific available contraceptives and adherence to counselling practices were low. Also, there is methodological gap as most studies established the use of either quantitative or qualitative but did not look at mixed method. Some of the studies used small sample size in representing the population. There is therefore, the need to explore the contraceptive use among students in Colleges of Education, and implication for counselling practices in the study settings by using the concurrent mixed methods approved.

1.3 Purpose of the Study

The purpose of the study is to explore the perception, knowledge and attitude of students of Colleges of Education in Greater Accra and Eastern regions of Ghana regarding contraceptive use, and to provide explanations about these issues to inform counselling practices.

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1.4 Objectives of the Study

The objectives of the study are to:

1. explore the perception of college of education students in the Greater Accra and Eastern regions of Ghana about contraceptives use.
2. examine the attitude of college of education students in the Greater Accra and Eastern regions of Ghana towards the use of contraceptives.
3. assess the knowledge level of college of education students in the Greater Accra and Eastern regions of Ghana on available contraceptive use.
4. determine the gender difference in contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana.

1.5 Research Questions

The following research questions guide the study:

1. How does college of education students in the Greater Accra and Eastern regions of Ghana perceive contraceptives use?
2. What are the attitudes of college of education students in the Greater Accra and Eastern regions of Ghana towards the use of contraceptives?
3. What is the knowledge level of college of education students in the Greater Accra and Eastern regions of Ghana on available contraceptive use?
4. How do gender difference influence contraceptive use among college of education students in the Greater Accra and Eastern Regions of Ghana?

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1.6 Research Hypotheses

Three hypotheses were formulated in the study.

Hypothesis One

H_0: There is no statistically significant difference between college of education students of Greater Accra and Eastern regions in terms of knowledge of contraceptive use.

H_1: There is statistically significant difference in contraceptive use between college of education students of Greater Accra and Eastern regions in terms of knowledge of contraceptive use.

Hypothesis Two

H_0: There is no statistically significant difference in contraceptive use between students of Colleges of Education in Greater Accra and Eastern region.

H_1: There is a statistically significant difference in contraceptive use between Colleges of Education students in the Greater Accra and Eastern regions.

Hypothesis Three

H_0: There will be no statistically significant gender differences in contraceptive use between students of College of Education in Greater Accra and Eastern regions of Ghana.

H_1: There will be statistically significant gender differences in contraceptive use between College of Education students in Greater Accra and their counterparts in the Eastern regions of Ghana.

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1.7 Significance of the Study

This research is justified on the grounds that it would provide empirical evidence to guide theory, practice and policy as regards the scientific debate on perception, knowledge, attitude and practices of students regarding sexual behaviour and contraceptive use to inform counselling practices. Theoretically, the findings of the study would fill the knowledge gap on the topic under investigation. Thus, this study is quite significant as it adds to a body of academic knowledge on the phenomenon. That is, it would help fill the gap created as a result of little attention given to sexuality and sexual behaviour, reproductive health, and contraceptive use among Colleges of Education Students in Ghana, particularly in the Greater Accra and Eastern regions.

Practically, the outcome of this study may be beneficial to school counsellors in their practices with regard to education and counselling students on sexuality and sexual behaviours. The findings from the study would also help explore counselling options that would be applicable to student victims of unintended pregnancy and STDs.

With respect to policy, the findings of this research study would be considered at the level for policy makers and interventionists which would inform the Ministry of Education, Ghana Education Service, Ghana Tertiary Education Commission, Ghana Health Service and Colleges of Education to scale-up programmes on students' sexuality and reproductive health in basic, second cycle and tertiary schools.

Secondly, the empirical data on the phenomenon may facilitate policy and programme formulation for the prevention of unintended pregnancy, STDs and HIV/AIDS among students. The results of this research may inform and shape the reproductive health

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policy in all Colleges of Education and by extension cover all levels of schools in Ghana as trained teachers are the major informant of information.

1.8 Delimitations of the Study

The study was restricted to Colleges of Education students within the Greater Accra and Eastern regions in Ghana. Although, addressing all Colleges of Education in Ghana would give in depth information to the study but it will make the scope of the study too broad. The researcher chose Greater Accra Region because Accra is the most populous region in Ghana (GSS et al., 2015) and had increased number of students in the various colleges and universities. In addition, the Eastern Region has more colleges of education. Both Greater Accra and Eastern region are among the five top regions in Ghana with high rate of teenage pregnancy according to the 2018 Ghana Health Service report.

The study focused on perception, knowledge and attitude of Colleges of Education students regarding sexual behaviour and contraceptive use to inform counselling practices in terms of the variables used for the study. Characteristic variables such as age, gender, level or class of the students, religious affiliation, marital status and colleges of the respondents were considered and treated as control.

Also, the study was delimited to only students of colleges of education, excluding academic staff. The justification for selecting only students for the study, in particular, was that most of the students were still in the adolescent stage of life and at the stage of young adulthood and vulnerable because they were in their formative years and any disruptions could have a change in their reproductive health life as well as academic performance. The academic staff were in the prime of their life where any disruption of their reproductive health like unwanted pregnancy may not affect

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them much about their job description, though it may have some influence on that effect. The study considered both male and female students because men have greater influence on women in the case of reproductive health specifically sexuality though women get reproductive health changes in case of pregnancy.

The study did not also focus on other contraceptives such as vasectomy and bilateral tubal ligation which are permanent method of contraceptives as well as traditional method of contraceptive (coitus interruptus, calendar method, cyclical beads and ovulation method). The permanent methods of contraceptives are meant for adult who have completed childbirth and are over 40 years. The traditional method is also meant for those who can monitor their safe period.

1.9 Limitations of the Study

The study had some limitations even though, the researcher employed several methods to control the occurrences of biases. The sample of the study was limited to only students and the findings limited to only the colleges of education in the two regions under study. The researcher admits that, the situation as revealed in this study may differ from other settings. However, the use of appropriate sample determination techniques allows inferences to be drawn from the findings of this study and contribute to existing knowledge on the subject.

It was assumed that the selected students from the colleges had sufficient knowledge and understanding of contraceptive use to answer the items in the instruments accurately and truthfully. Thus, the study depended on self-reported data which runs the risk of being biased and selective recall on the part of the respondents.

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Another limitation of the study was the use of both qualitative and quantitative data together. This approach has the potential to produce different results since mixed method used for the study was based on different theoretical and philosophical assumptions. Also, the results of the study may not be anticipated for the future since issues relating to knowledge, attitude and perception of contraceptive use keep changing with time especially as information flow and dissemination has become widely variable.

Another significant limitation was the conclusion that male uses contraceptives more than females could be problematic in that in the domain of contraceptive, male use only condoms, the rest are female. In this sense, it can be difficult to compare contraceptive use between male and female as reported in this study.

1.10 Definition of Terms

Contraceptive: This refers to any device or substance that are used to prevent unwanted pregnancy, sexually transmitted diseases and other health related problems.

Health: Health is the social, economic, cultural, spiritual and political wellness of the individual in a particular period of time.

Reproductive health: It is the totality of the individual life regarding his physical, social and psychological being in all matters relating to reproductive life.

Sexuality: It is anything that has to do with the individual sexual life or sexual activity.

Sexual behaviour: It is a person's sexual practices i.e., the way and manner in he/she engages in sexual activity.

Availability: This is how easy respondents say contraceptives are to them**.**

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Cultural beliefs: These are the beliefs of the respondents about contraceptives.

Side effects: These are negative experiences respondents have about contraceptives.

Use of contraceptive: This is the consistent use of contraceptives to prevent pregnancy.

1.11 Abbreviation

HIV: Human Immune-Deficiency Syndrome

MoE: Ministry of Education

RH: Reproductive health

NGOs: Non-Governmental Organizations

STIs: Sexually transmitted infections

UNAIDS: Joint United Nations Program on HIV/AIDS

UNICEF: United Nations International Children's Emergency Fund

PHC: Population and Housing Census

AIDS: Acquired Immune Deficiency Syndrome

HIV: Human Immunodeficiency Virus

SRH: Sexual and Reproductive Health

RTI: Reproductive Tract Infection

GDHS: Ghana Demographic Health Survey

GSS: Ghana Statistical Services

SPSS: Statistical Package for Social Scientists

WHO: World Health Organization

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EC: Emergency Contraceptive

IUCD: Intra-Uterine Copper Device

LARC: Long-Acting Reversible Contraceptive

MOH: Ministry of Health

SDG: Sustainable Development Goals

1.12 Organization of the Study

The study is organized into six chapters. Chapter One deals with the general introduction which includes the background to the study, statement of problem, purpose of the study, study objectives, research questions, hypothesis, significance of the study, delimitations and limitations of the study. The chapter also provides the list of abbreviations and operational definitions of terminologies as well as the summary of the chapter. Chapter Two reviews available literature relevant to the various aspect of the study. These aspects are the theoretical framework, empirical studies with relevant sub-headings of the contraceptive use and conceptual framework of the study. The chapter concludes with a summary of the literature review.

Chapter Three focuses on the study methodology that comprises ontological and epistemological philosophy underpinning the study, research approach, research design, population, sample and sampling procedures and ethical consideration. The instrumentation, data collection procedures, data processing and analysis are discussed in this chapter. Chapter Four presents the research results, while the fifth chapter discusses the study findings. Chapter six focuses on the summary of the research findings, conclusions, recommendations, counselling implication and suggestions for further research.

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1.13 Summary of Chapter One

Chapter One introduced the research area and presented the background, problem statement, the research objectives, research question and hypotheses. The significance of the study, delimitation and limitations of the study were outlined. The study also proceeded with detailed description of the research, with a complete review of related literature in chapter two.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter deals with literature related to the topic under investigation. The review presents the theoretical framework underlying the study as well as review of empirical studies conducted on the subject. The theoretical literature focuses on the social learning theory, health belief model and theory of planned behaviour. The review of empirical studies considers works done in Ghana and other developing countries and it has grouped under five sub-headings. These include the concept of contraceptive, sexual behaviour of students, perception of contraceptives usage, attitude towards contraceptive usage and knowledge of contraceptive usage among the students.

2.1 Theoretical Framework

Theoretical framework comprises two words, ―theory" and ―framework". Theories are generalised statements of ideas that seek to explain the relationships in phenomena using appropriate assumptions (Kivunja, 2018). Kivunja (2018) provides a definition for theory by Kerlinger and Lee as ―a set of interrelated constructs, definition and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomenon." Theories therefore, consist of a set of propositions that are logically related, expressing the relations among different constructs (Varpio et al., 2020).

A theoretical framework seeks to develop a structure from previously tested knowledge, concepts and theories to assist the researcher in interpreting the meaning from a research (Kivunja, 2018). The theoretical framework therefore logically develops and connects the individual theories and concepts to answer research

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questions (Varpio et al., 2020). Therefore, it is used to provide the rationale for conducting the research and serves as a foundation for the parameters or boundaries of a study. This review will cover the social learning theory as well as health belief model and the theory of planned behaviour.

2.1.1 Social learning theory

The Social Learning Theory (SLT) is one of the commonly used theories in understanding behaviours as it relates with the environment (Brady, 2017; Nabavi, 2012). It is credited to Bandura, a psychologist of human behaviour (Fitzgibbons, 2019). Brady (2017) indicates that, the theory has been applied to several fields of learning and research viewing behaviour to be learned through a process of socialization. The SLT provides that learning and knowledge acquisition cannot happen without an influence of environmental factors (Lu & Lee, 2016). Thus, according to the SLT, the learning of good and bad behaviours and their cues occurs through a process of differential reinforcement (Brauer & Tittle, 2012).

According to Brady (2017) four main concepts of the SLT include differential association, differential reinforcement, imitation and definitions which influences the initial as well as the continuous process of behaviour change. The outside environment within which a person operates can influence observation, comprehension and action (Heide, 2007). Behaviour is therefore, affected by structural factors, such as service availability and policies, as well as by social factors, such as social norms and association such as peer influence (Akers & Jennings, 2015). The theory gives the importance of creating an enabling environment, in which the desired behaviour change is made easier.

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The theory portrays that the behaviour in practice can help others adopt through models such as observational learning, imitation, and modelling. SLT is thus, robust in predicting learned behaviours (Jennings & Henderson, 2014). Universal principles of social learning theory acquired through observation allows individuals to learn from others (Lyons & Berge, 2012).

The application of the social learning theory to understanding the knowledge, attitudes and perceptions of students on contraceptive use stems from the important role social factors and the environment play in influencing these factors and their ultimate contribution to contraceptive use among adolescents and young adults (Igras et al., 2017). The ultimate use of contraceptives as a behaviour can be influenced by their knowledge and perception which influence attitudes resulting from the combination of past, present and future positive or negative effects and information from their environment and space (Brauer & Tittle, 2012).

The SLT explains the relationship between environmental behavioural and cognitive or personal factors as illustrated in the framework (Figure 2.1). The Social Learning Theory as indicated in the model shows the relationship between environmental, individual and their influence on behaviour. It involves attention, retention, reproduction and motivation as people learn through the principles of observation, imitation and modelling (Fitzgibbons, 2019; Nabavi, 2012). Based on the review of the social learning theory, the construct below indicates its application to students' learned behaviour and contraceptive use.

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2.1.1.1 Environmental factors

The availability of accurate information, parental and educational support systems, beliefs, social norms and values, access to services and counselling opportunities are important environmental factors that influence the individual as well as behaviour. People learn by watching and interacting with other people within their environment. Vicarious learning occurs as people acquire knowledge of contraceptive use from the environment through social media, social support group, families and friends and acquire enactive learning by doing or imitating them. Most students are influenced by their peers and social norms as part of their socialization.

Accessibility to contraceptive resources within the community or the environment including hospitals, clinics or health facilities, pharmacy shops and chemical sellers, enhances access of students to contraceptives. Within the environment, students are susceptible to sexually transmitted infections such as HIV/AIDS and gonorrhoea. The influence of such environmental factors contributes to the utilization of contraceptives which is necessary for the prevention of unintended pregnancies and sexually transmitted infections.

2.1.1.2 Personal or Individual factors

At the individual level, the interaction with environmental factors and behavioural factors affects the knowledge, perceptions and attitudes towards the use of contraceptives. The availability of avenues to learn and model behaviour contributes significantly to knowledge acquisition. The presence of accurate information on contraceptives underscores the stimulation of knowledge which influences perceptions and individual attitudes. The influence of social norms and risks and

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effects of unintended pregnancies and sexually transmitted infections shape the attitudes of students towards sex and contraceptive use.

Within the social learning theory construct, knowledge, attitudes and perceptions can be influenced either positively or negatively depended on the factors within the environment that model and reinforce the learning process. The intentional provision of positively engaging determinants and interventions will go a long way to influence contraceptive use among students.

2.1.1.3 Behavioural factors

A positive interaction between the environmental, individual and behavioural factors ultimately contribute to the determination of human behaviour (Aninanya et al., 2015; Lu & Lee, 2016). Once knowledge, perception and attitudes are acquired and formed, students express what they have learned through behaviour. Positive behaviours such as adequate contraceptive use and prudent sexual behaviours have the influence of positively acquired knowledge, attitudes and perceptions. Where formation of ideas, knowledge and attitudes are negative, the expressed behaviour may be negative.

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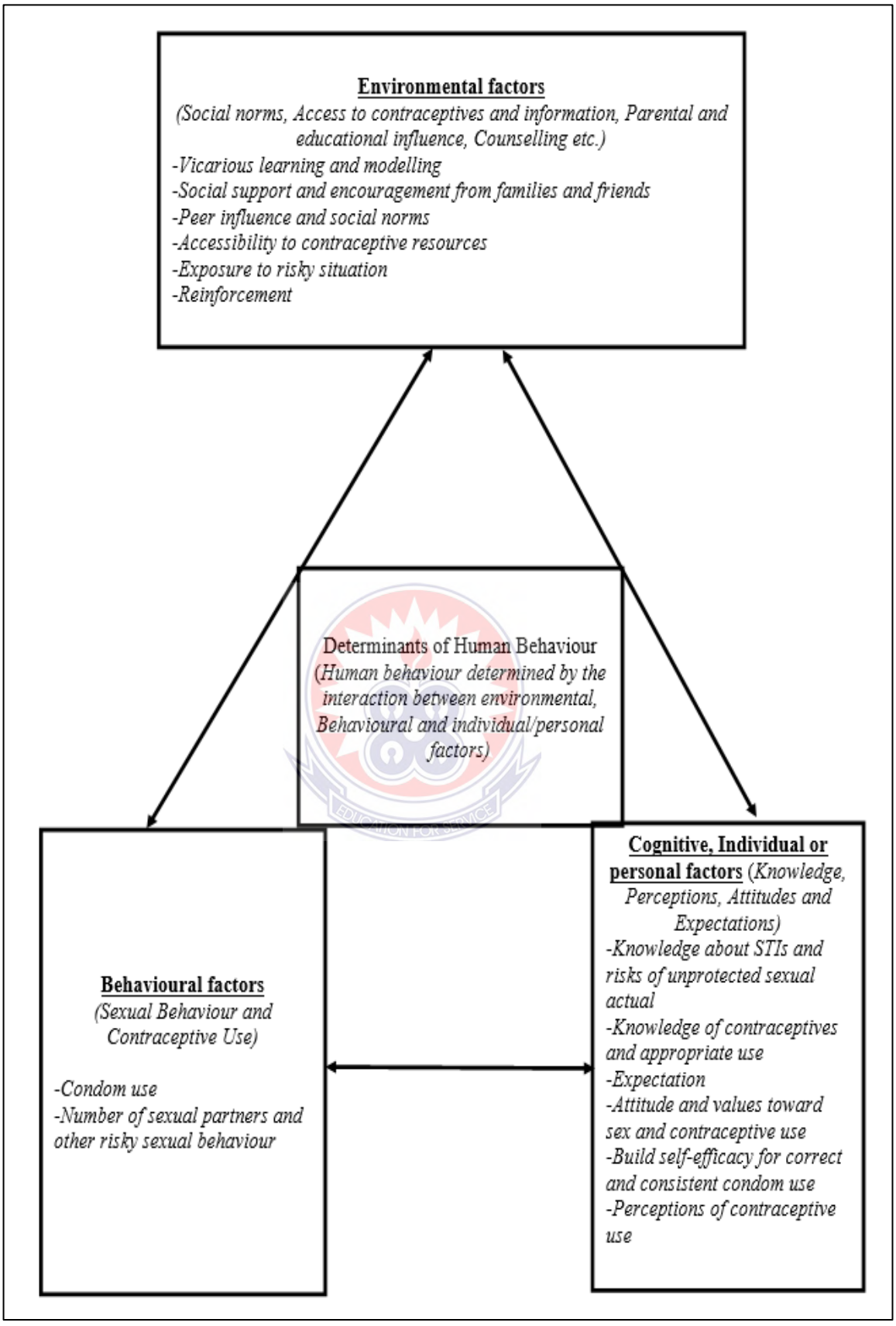

Figure 2.1: Social Learning Theory

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2.1.2 Theory of planned behaviour

The theory of planned behaviour (TPB) has objectively been one of the most applied theories of predicting human social behaviour (Ajzen, 2011). It was proposed by Icek Ajzen and provides that, the most important determinant of behaviour was a person‘s intention to perform the behaviour such as contraceptive use (Cooke et al., 2016; Tornikoski & Maalaoui, 2019) as illustrated in Figure 2.2. The main variables making up the TPB construct include attitudes, subjective norms and perceived behavioural control (Cooke et al., 2016). The TPB has been used in explaining several health behaviours in predicting intention of the health behaviour. This includes its use by (Demaria et al., 2019) in examining and understanding contraceptive decision and use among women.

The interaction of the attitudes of students, their subjective norms and self-efficacy or behavioural control are the critical indicators or markers for behaviour change under the TPB. Thus, when under stable conditions, they can have long term effects with appropriate modifying interventions while it will be difficult to achieve long term effects under fluctuation conditions (Eggers et al., 2015). The TPB has received several criticisms and come under intense debate (Ajzen, 2011). This includes the report by (Sniehotta et al., 2014).

According to Sniehotta et al. (2014), the TPB can be criticized on the basis of the balance between rigidity and validity as well as the basis of behaviour on only four factors. In addition, its exclusive focus on rational reasoning excluding unconscious influences on behaviour has also come under criticisms. The static explanatory nature of the TPB has also been indicated by Sniehotta et al. (2014) as limiting to the provisions of the TPB. These criticisms notwithstanding, Ajzen (2014) has provided

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further reasons and response in his commentary _the theory of planned behaviour is alive and well, and not ready to retire.' The interaction between the factors is indicated in the framework below.

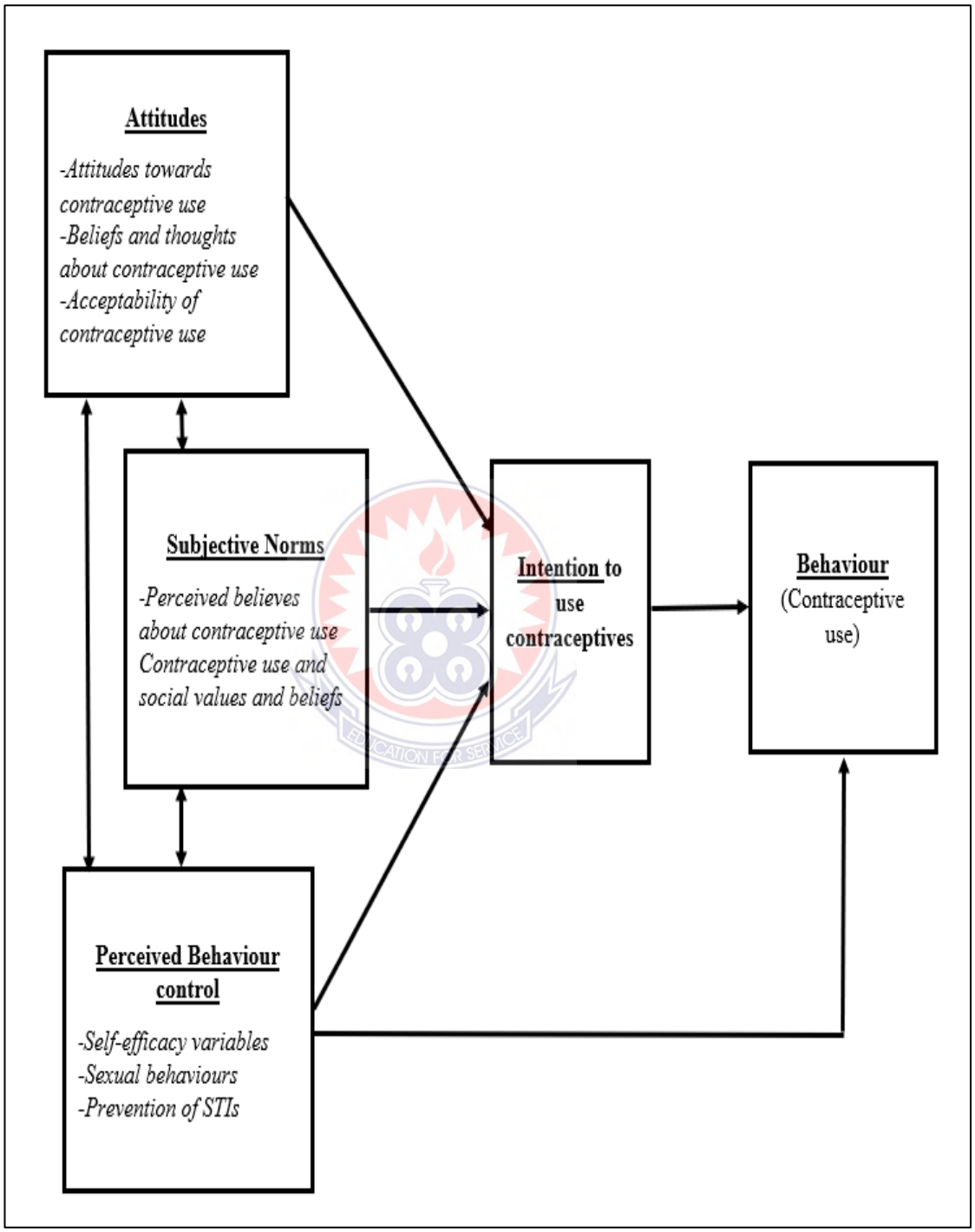

Figure 2.2 Theory of Planned Action (Adapted from Der et al. (2021) based on Azjen (1991)

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2.1.2.1 Personal attitude

This refers to the individual‘s positive or negative beliefs in relation to a specific behaviour (Der et al., 2021). It is the extent to which an individual has a favourable or unfavourable outcome evaluation of the specific behaviour (Dang Vu & Nielsen, 2022). The model shows the relationship between the attitudes of students and their subjective norms and perceived behaviour control which influences the intention to use contraceptives and the ultimate behaviour of contraceptive use (Watsi & Tarkang, 2022).

2.1.2.2 Subjective norm

This refers to the influence of social values and norms that are perceived by an individual to perform or avoid a particular behaviour. The social norms include the influences of societal values, religious beliefs, concerns of parents, teachers, guardians who are referred to as significant others or groups from the individual‘s environment (Dang Vu & Nielsen, 2022). Subjective norms are function of a person‘s beliefs regarding how they perceive contraceptives and the motivation to use such methods (Watsi & Tarkang, 2022).

2.1.2.3 Perceived behaviour control

It is the perception about the ease or difficulty in putting up a particular behaviour. It reflects past experiences and foreseen obstacles. The more positive the attitude and subjective norm regarding the behaviour and the greater the perceived behavioural control, the stronger the individual‘s intention to exhibit the behaviour will be (Der et al., 2021). The theory of planned behaviour may be regarded as useful for dealing with the complexities of human social behaviour like students‘ behaviour regarding contraceptive use (Kiene et al., 2014). Attitudes and subjective norms towards the

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behaviour, and perceived control with respect to the behaviour help to foresee behaviour intentions with a great mark of correctness (Der et al., 2021).

2.1.3 Health belief model

The relationship between health beliefs and resulting behaviours have been postulated for assessing changes in behaviour (Abraham & Sheeran, 2014). This has been illustrated in the Figure 2.3. According to Abraham and Sheeran (2014), the health belief model (HBM) focuses on threat perception and behavioural evaluation as the two sides of an individual‘s health and health behaviour.

The HBM posits its constructs on six domains including perceived susceptibility, perceived severity, perceived barriers, perceived benefit, cue to action and perceived self-efficacy (Yakubu et al., 2019). The HBM explains action of individuals by three main factors including individual perceptions, modifying factors and likelihood of action (Mckellar & Sillence, 2020). At the individual perception level, factors include the perception of illness which is made up of perceived susceptibility and perceived severity. Modifying variables include demographic and psychological characteristics, perceived threats and cues of actions. The likelihood of action is made up of the perceived benefits without the barriers of taking the health action (Mckellar & Sillence, 2020). The HBM construct is provided in the framework below (Figure 2.3).

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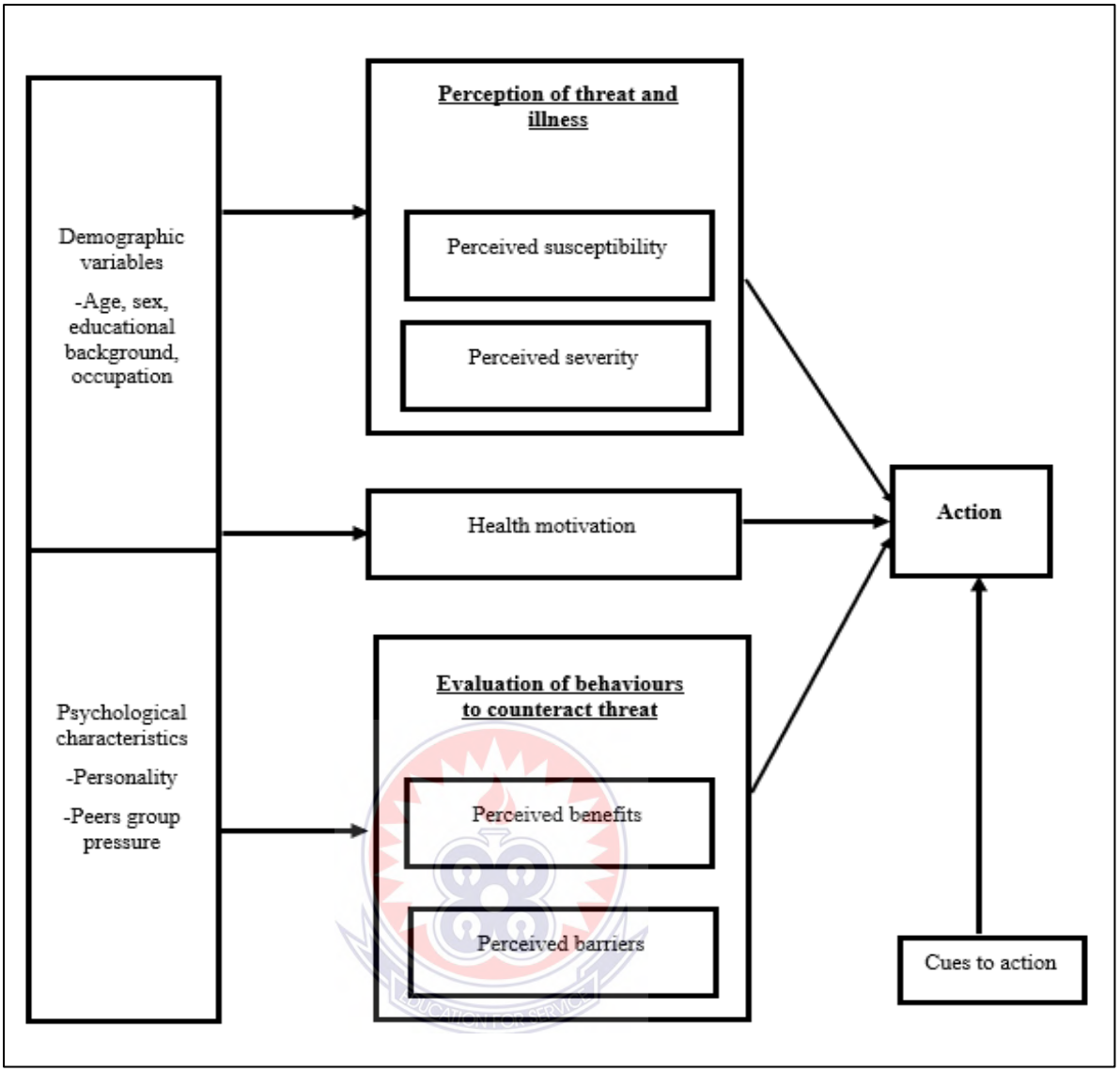

Figure 2.3 Health Belief Model (Adapted from Abraham & Sheeran (2014))

The HBM explains that, for students to take action which is the use of contraceptives, there should be the perception of the susceptibility of having unintended pregnancies and sexually transmitted diseases which are noted to be severe and have grave consequences. There should also be the perception of benefits to using contraceptives which include the efficacy of the contraceptives to prevent unintended pregnancies and sexually transmitted diseases (Yakubu et al., 2019). There should be the identification of possible barriers to be addressed. Barriers could be socio-cultural, financial, geographic access, poor attitudes among others.

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There should be adequate health motivation to mediate the perception of threat and illness and the evaluation of behaviours to counter threats. The availability of triggers to stimulate the health behaviour may be internal or external. Internal factors are intrinsic desire and consciousness to take action the external factors include those such as counselling and parental guidance and support. A positive interaction between the domains of the HBM is expected to produce positive behaviours resulting in contraceptive use (Mckellar & Sillence, 2020). However, where the interaction is negative, students maybe unlikely to use contraceptives.

2.2 Sexual Behaviour of Students

Sexual behaviour especially among adolescents and young adults have had considerable discussion owing to the high levels of unintended pregnancies and sexually transmitted diseases (Fearon et al., 2015). Early sexual initiators are less likely to have knowledge on how to prevent STIs including HIV and other health related consequences of unsafe sexual behaviour (Majer et al., 2019). They are equally not able to negotiate condom use compared to those who delay sexual intercourse at an early age and this poses extra risk due to their physiological, social, health and educational lives (Lanari et al., 2020). Cheney et al. (2014) highlight the danger in which adolescents place their sexual health when adhering to social norms.

Sexual behaviour is any activity between two persons that induces sexual arousal. Sexual behaviour is defined as a person‘ sexual life and pertains to all forms of sexual activities (Sweya et al., 2016)(Sweya et al., 2016). The age of sexual initiation varies from one person to another in different geographic contexts (Majer et al., 2019). Sexual initiation age of every woman either within or outside marital union symbolizes the beginning point of her risk exposure to pregnancy and childbearing

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which equally necessitated contraceptives demand and use among women, and especially sexually active adolescents (Blanc et al., 2018; Bongaarts et al., 2017; Finer & Philbin, 2013).

There are implications of health outcome of students to have a significant relationship to the fertility age of childbearing and an increased health risks which are related to students‘ unintended pregnancies, complications from unsafe abortion and maternal complications and death (Lanari et al., 2020). This adds to the consequences of the negative effect on educational attainment and lower economic class of the family. The design of programme interventions to improve students sexual behaviour is necessary to reduce the occurrence of poor sexual decisions and its associated complications (Borges et al., 2015; Cheney et al., 2014).

Sexual behaviour can be healthy or risky depending on the expression of the activity among students (Da et al., 2018). Sexual activity is a normal physiological function and a person‘s sexual behaviour is considered healthy if it can be controlled. Improving sexual and reproductive health among students are important considerations for positive adolescent behaviours (de Castro et al., 2018). This includes appropriately expressing desire to have sex or not to have sex; as well as negotiating sexual limits and accepting refusals of sex without hostility or feeling insulted. In sexual relationships, healthy behaviour is devoid of exploitation but tools that prevents mental stress on either member of the relationship and build security (Duru et al., 2015).

Risky sexual behaviours include those activities that increase the chances of unintended pregnancies and sexually transmitted diseases (Othieno et al., 2015). Among these behaviours are unprotected intercourse, sexual promiscuity,

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transactional sex sexual violence (Amaranganie et al., 2018; Menon et al., 2016; Mirzaei et al., 2016). Other forms of risky sexual behaviours include inappropriate sexual exposure such as the concept of sex activity with children, engaging in sexual behaviours in public or bestiality, and precocious sexual gestures amongst others (Okpokumoku et al., 2017).

With the global and public health effects of risky sexual behaviours in view, interventions and education programmes including counselling should be offered to students to control the growing rate of risky behaviours which contributes to the difficulty in achieving the public health objectives of HIV/AIDS control, controlling unintended pregnancies, unsafe abortion and maternal deaths (Bizuwork et al., 2022; Derbie et al., 2016). The development of frameworks in the current education system to meet contextual needs of the society is critical for improving positive sexual behaviours (González-Marugán et al., 2021; Wana et al., 2019). The involvement of parents in communication and monitoring adolescent sexual behaviours will also contribute to making interventions effective (Oluyemi et al., 2017).

2.3 The Concept of Contraceptive

Contraceptive is the use of various health or medical devices to prevent pregnancy (WHO, 2020). Contraceptive simply means ‗against conception' (Mgbachi, 2016). Some of these devices are mostly in the form of drugs, agents, sexual practices or surgical procedures. Contraceptives are usually referred to as birth control methods and are mostly discussed as fertility control or family planning methods (WHO, 2019). Contraceptive use has been described as a voluntarily practice based on attitudes, knowledge and responsible decisions individuals with the aim of promoting

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the health (WHO, 2014). According to the WHO (2014), contraceptive enables people to make informed choices about their sexual and reproductive lives.

Contraceptive use among students have assumed a topical issue worldwide in many health care settings across the world and this is as a result of the increasing global acceptance and concern about population maternal increasing and child mortality, particularly in developing nations (Appiah-Agyekum & Kayi, 2013). Contraceptives have achieved worldwide acceptance because of its importance to couples and individuals to attain their basic right of deciding without any coercion which method to use when they want to protect and prevent themselves from sexually transmitted disease and unwanted pregnancy and taking responsibility of their decision (WHO, 2019, 2020).

Thus, achieving higher levels of contraceptive use indicates the reduction and control of unwanted pregnancies, unsafe abortion, maternal and infant mortality (WHO, 2014). The use of contraceptives is therefore, seen as a reliable intervention or tool for combating population explosion and an avenue for improving the socio-economic development especially among developing countries (Apanga & Adam, 2015). The promotion of contraception advances human rights as it supports individuals to determine the number of children they want and how to space them (WHO, 2019).

Although contraceptives have been globally promoted, there remains huge unmet needs especially in developing countries. The WHO (2019) reports that about 1.6 billion women in their reproductive age in developing countries had unmet family planning needs as of 2017. This had increased to 1.9 billion in 2019 (WHO, 2020). Among the main reasons for the unmet needs include inadequate access and limited choices of methods, fear of side effects, poor services and gender based barriers

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(WHO, 2019). This calls for concerted efforts to address the factors leading to unmet needs using contextual solutions.

2.4 Types of Contraceptives

There are about fifteen different types of contraceptives. These include oral contraceptive pills, implants, injectables, patches, vaginal rings, intrauterine devices, condoms, sterilization methods for male and females, withdrawal lactational amenorrhoea methods (WHO, 2020). Contraceptive methods can be classified as natural or artificial (Mgbachi, 2016); and modern or traditional (Hubacher & Trussell, 2015). According to Hubacher and Trussell (2015), modern methods of contraceptives include the methods that have used the advantage of technology to overcome biological processes by interfering with the reproduction process following sexual intercourse. All other methods of contraceptives with this mechanism are traditional or non-modern ones and these include lactational amenorrhoea, fertility awareness and celibacy. The modern forms of contraceptives can be grouped as barrier method, hormonal methods, intrauterine devices (IUDs), Permanent methods such as sterilization and Emergency Contraceptive Pills (ECP) (Hubacher & Trussell, 2015).

2.5.1 Barrier methods of contraceptive

Barrier methods work by preventing the sperms from reaching the females ovaries (Kendall & Lebari, 2019). The male condom is the most common and effective type of the barrier methods (Mane & Maid, 2021). Condoms prevent sperms from meeting the female egg. Spermicides are chemicals that are placed in the vagina before sexual intercourse. They prevent pregnancy by killing sperms so that none can reach and fertilise an egg (Bartz et al., 2022; Mgbachi, 2016). Onoxynol-9 (N-9) is the

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commonest spermicidal agent which is available in several concentrations and forms, including foam, jelly, cream, suppository, and film (Mgbachi, 2016).

The diaphragm is also another barrier method of contraceptive (Bartz et al., 2022). It is made of a rubber and shaped like a dome that is placed over the cervix. A cervical cap is yet another type of barrier method. ―A cervical cap is a thimble-shaped latex rubber barrier device that fits over the cervix and blocks sperm from entering the uterus". The cap should be about one-third filled with spermicide before inserting. It stays in place by suction (Bartz et al., 2022). Contraceptive sponge is another example of barrier method. These are ―soft, disposable, spermicide-filled foam sponges". It is placed in the vagina before sexual intercourse. ―The sponge blocks sperms from entering the uterus, and the spermicide also kills the sperm cells" (Bartz et al., 2022; Mgbachi, 2016).

2.5.2 Hormonal methods

Hormonal methods of contraceptives are among the most common methods of reversible contraceptive and contains either oestrogen and progestin or progestin only to control or stop ovulation and intercept pregnancy (Halpern et al., 2013; Kaunitz, 2021). Hormones can be introduced into the body through various methods, including pills, injections, skin patches, transdermal gels, vaginal rings, intrauterine systems, and implantable rods (Kaunitz, 2021).

The combined oral contraceptive pills (COCs) contains different combinations of the synthetic oestrogens and progestins and act together to stop ovulation (Lopez et al., 2015). Progestin-only pills (POPs) are another hormonal method. POPs are contraceptive pills taken once a day (Kaunitz, 2021). POPs may inhibit ovulation or sperm function. They thicken cervical mucus, making it difficult for sperm to swim

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into the uterus or to enter the fallopian tube. POPs alter the normal cyclical changes in the uterine lining and may result in unscheduled or breakthrough bleeding (Lopez et al., 2015).

Another hormonal method of contraceptive is the patch which is a thin, plastic patch worn on the lower abdomen, buttocks, outer arm, or upper body to release the hormones progestin and oestrogen (Horejs, 2019; Parasrampuria et al., 2020). It also thickens the cervical mucus, which keeps the sperm from joining with the egg (SyamRoy, 2017). The contraceptive injection is an example of hormonal contraceptive, which is a progestin-only, long-acting, reversible contraceptive (Horejs, 2019; Parasrampuria et. al, 2020).

It stops the woman from releasing an egg, and it provides other contraceptive effects. Vaginal ring, another hormonal contraceptive is a thin, flexible ring that releases the hormones progestin and oestrogen. It works by stopping the ovaries from releasing eggs. It also thickens the cervical mucus, which keeps the sperm from joining the egg (Kaunitz, 2021). The ring is worn for 3 weeks, taken out during the menstruation week (Sultan & Genazzani, 2017). The vaginal ring is not recommended for any woman with a history of blot clots, stroke, or heart attack, or with certain types of cancer (Kaunitz, 2021).

2.5.3 Intrauterine Contraceptives Device (IUCD or IUD)

The IUDs are one of the most effective contraceptive methods with high rates of preventing unintended pregnancies (Hooda et al., 2016; Lanzola & Ketvertis, 2022). The device is a small, flexible T-shape that is placed in the uterus by a health care provider and allowed to stay in place as long as pregnancy is not desired (Kassa et al., 2021). An IUD can stay and function effectively for many years at a time and further

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regarded as a safe and cost-effective method of preventing pregnancy (Ouyang et al., 2019). The two types of IUDS include the copper-T and the levonorgestrel types (Lanzola & Ketvertis, 2022). IUDs are long-acting reversible contraceptives (Dereje et al., 2020; Ouyang et al., 2019; Thapa et al., 2019).

2.5.3.4 Sterilization

Sterilization involves surgical procedures by disconnecting the tubes through a method called tubal ligation among women (Erlenwein et al., 2015). The surgical procedure results in a permanent or irreversible method of contraceptive and it is known among men as vasectomy (Ross & Hardee, 2017). The procedures among men and women either prevents a woman from getting pregnant or prevents a man from releasing sperm. A health care provider must perform the sterilization procedure.

2.5.5 Emergency Contraceptive (ECs)

Emergency Contraceptives are used to prevent unintended pregnancies within three to five days after an unprotected sexual intercourse (Amaniampong et al., 2022; Arisukwu et al., 2019; Darteh & Doku, 2015). Usually emergency contraceptives are pills containing levonorgestrel or ulipristal although copper and levonorgestrel IUDs are available (Kirchner, 2022; Said et al., 2019) . Emergency contraceptive is safe and effective in preventing unintended pregnancy (Babatunde et al., 2016). The IUCD forms of emergency contraceptives have been identified to be more effective than the orally administered emergency contraceptives (Cheung et al., 2021).

The use of emergency contraceptives can offer immediate solution and relief following unprotected sexual intercourse and plans made for regular contraception (Dam et al., 2022). The IUCD can offer protection after five days after exposure at which time the oral emergency contraceptives would be ineffective (Yeboah et al.,

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2022). The oral emergency contraceptive may be effective up to 72 hours (Kirchner, 2022; Yeboah et al., 2022). Reproductive health education remains a critical approach to improving awareness, knowledge and addressing misconceptions to the use of emergency contraceptives (Joseph et al., 2016).

2.6 Perception of Contraceptives Use

Perception is seen as ~~"~~the way in which something is regarded, understood or interpreted" (Alspaugh et al, 2020). An individual is to make subjective and personal inferences as well as making meaning of the world or environment within which the individual lives through perception. Perceptions are also influenced by the information available within the social and physical environment (Kinaro et al., 2015). The way by which people perceive contraceptives may largely influence their uptake and utilization of such contraceptives (Nsubuga et al., 2016). With the paucity and inaccuracy of information available to students who are usually in their adolescence and young adults stage, adverse and risky sexual behaviours are likely to be proliferate (Kinaro et al., 2015). The discussion expounds on some of the perceptions about contraceptives that may influence utilization.

The perception of infertility and barrenness has been widely presented in earlier studies. For instance, in Ghana the findings of Komey (2016) from his study among a group of students in the Greater Accra region showed the perception of infertility to result from contraceptive use. Another study by Agyemang et al. (2019) in the Ashanti region revealed similar perception of infertility caused by contraceptive use. In northern Ghana, the findings of Schrumpf et al. (2020) confirmed the perception of infertility and similar findings were revealed from the study by Frimpong et al. (2021). According to Adofo et al. (2021), the perceived cause of infertility is the main

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barrier to contraceptive use. The perception is not limited within the corridors of Ghana, as it has been reported from studies in other countries within SSA and beyond.

In Guinea, Dioubaté et al. (2021) reported from his study the perception of respondents the cause of infertility and barrenness later in the life of those who use contraceptives. This further confirms the findings of Bardaweel et al. (2015) in Jordan as well as that of Elkalmi et al. (2015) and Fatimah et al. (2019) from Malaysia. The cause of infertility from contraceptive use has also been reported from studies in Ukraine (Podolskyi et al., 2018), India (Hogmark et al., 2013) and in the United States (Hall et al., 2016). It is important to design strategies to effectively target such perceptions about contraceptive use especially among students as efforts are driven to improve utilization to reduce unintended pregnancies and complications (Agbeno et al., 2021; Podolskyi et al., 2018).

The perception of side effects from contraceptive use is also pervasive especially among students. Although certain levels of tolerable side effects to contraceptive use exist such as changes in menstruation, changes in weight, headaches, dizziness and nausea (Schrumpf et al., 2020), the extent to which this perception can be held can affect the acceptance and use of contraceptives among young adults, even when such effects have not been experienced by students. Studies in Ghana such as Grindlay et al. (2018) have reported the perceived negative effects of contraceptives use. This is confirmed by others including Komey, (2016) as well as Agyemang et al. (2019) and Yidana et al., (2015) in separate studies conducted in Ghana. Similar to the perceived side effects which are usually exaggerated among students found in Ghana, report by Hall et al. (2016) from the US confirm the perception.

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When unchecked and unaddressed, the perception of negative or adverse effects can hinder the patronage of contraceptives among students. The availability of accurate information to students on the various contraceptive methods and their side effects should be readily available for students (Agyemang et al., 2019). Additionally, counselling opportunities to address the negative perceptions and adequate dedication of time by care providers in aiding students to make informed choices on contraceptive use remains critical for enhancing opportunities to prevent unintended pregnancies and sexually transmitted diseases.

The difficulty in students receiving sexual and reproductive health education and information from their teachers and parents occurs through different regions and socio-cultural contexts including Ghana (Askari et al., 2020; Klu et al., 2022; Wanje et al., 2017). Perceptions about contraceptive use are also influenced by information students receive from the family, school and the media (Barchi et al., 2021). However, a lot of sexually-related information has been found to be inaccurate, ambiguous and sometimes misleading having a negative impact on sexual behaviour (Kinaro et al., 2015). In addition, there is no clear guidance on the method or language to use when discussing sexuality issues with students, leaving messages to individual interpretations (Izugbara et al., 2018). Parental views and values as well as educational system play a crucial part in influencing the knowledge and attitudes of students on contraceptives in order to stir positive perceptions which may largely influence contraceptives usage (Kinaro, 2013).

Another perception among students includes the difficulties in accessing contraceptives. The studies by Agyemang et al. (2019) and Appiah-Agyekum and Kayi (2013) in Ghana reported among students the perceived difficulty in accessing

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contraceptives which to an extent influenced students use of contraceptives. Among the access factors, Agyemang et al. (2019) indicated perceived difficulty in affording contraceptives. The study by Nsubuga et al. (2016) in Kenya among students perceived contraceptives to be hard to access and expensive.

Contrary to these reports on the perceived inaccessibility to contraceptives, Manortey et al. (2016) found in Ghana among student from one Polytechnic that, contraceptives were rather perceived to be affordable. The perceived inaccessibility of contraceptives needs to be addressed with adequate measures to correct this misperception among students. This is because, there have been interventions to make contraceptives available at affordable prices (Awusabo-Asare et al., 2017; Sully et al., 2020). An approach to making information on contraceptive methods and their availability known to students in an attempt to address geographic as well as financial accessibility can contribute to addressing the issue of perceived difficulty in accessing contraceptives (Thongmixay et al., 2019).

Furthermore, it has been reported that, students perceived contraceptive users as promiscuous people. These have been reported by Agyemang et al. (2019) in the Ashanti region and Mohammed et al. (2019) in northern Ghana. In addition, Manortey et al. (2016) reported among students in Takoradi in Ghana, that, those who use contraceptives were branded as promiscuous. The perception stems from the premise that, once a person engages in the use of contraceptives, there is an opportunity to be involved in indiscriminate and casual sexual encounters. The assertion is worsened when women take up contraceptives without the consent of their male partners (Abdulai et al., 2020). The need to demystify the attached promiscuous perception to

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contraceptive use requires imminent action in order to make strides in preventing unintended pregnancies and sexually transmitted diseases.

Among other perceptions, Bhatt et al. (2021) found among respondents in Nepal that, contraceptive use was a woman‘s responsibility. Other studies have shown that, contraceptive use is risky for users (Schrumpf et al., 2020; Tran & Vo, 2018). These perceptions notwithstanding, enhancing efforts to provide accurate information among students can shape their views resulting in improvements in contraceptive use.

2.7 Attitude towards Contraceptives Usage

The attitudes of individuals are among the factors that influence contraceptive use (Anorkor, 2022; Boamah et al., 2014; Nsubuga et al., 2016). The attitudes of students involve various reactions to using contraceptives and are usually shaped by knowledge and perceptions on the contraceptives (Sharma et al., 2021). Sometimes, contraceptive unmet need may be portrayed only as a problem of access with the perception that students do not use contraceptives because they cannot find or afford them or they have to travel too far to get them (Darroch & Singh, 2011, 2013). While access is clearly an issue, students have many other reasons for not using family planning, including personal, cultural, or religious objections, health concerns, and lack of knowledge (Nsubuga et al., 2016; Sharma et al., 2021).

The varied factors to contraceptive use including attitudinal ones are because of the variations in the exposure of students to sexual activities (Ahinkorah, 2020; Ahinkorah et al., 2021; Atere et al., 2010; Todd & Black, 2020). Studies in Ghana have demonstrated the relationship between attitudes of students to contraceptive use (Abrah, 2021; Agyemang et al., 2019; Akuffo, 2018; Komey, 2016). Such attitudes have been indicated to be influenced by students‘ knowledge and perceptions

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requiring the pragmatic design of programmes to target students perceptions, knowledge and attitudes holistically (Agbeno et al., 2021; Tran & Vo, 2018). A study to examine the attitude students exhibited towards contraceptive use by Ugoji (2013), found a significant relationship between attitude and knowledge of contraceptives use.

Students have shown different attitudes and response to contraceptive use in Ghana and beyond. For instance, the study by Agbeno et al. (2021) among participants in Cape Coast showed that majority of the respondents had positive attitudes towards contraceptive use. Another study by Anorkor (2022) also showed majority of respondents having favourable attitudes in a study conducted in the Greater Accra region. This was, however, in contrast to the findings of Appiah-Agyekum and Kayi (2013) where most students demonstrated negative attitudes towards contraceptives. A study of contraceptive use among adolescents randomly selected among seven second cycle institutions in the greater Accra region showed that the main reason attributed to the low use contraceptives among themselves was due to the fact that, most of them had poor attitudes which translated into their ignorance and felt shy purchasing contraceptives (Baku, 2012).

In Uganda, most of the students who participated in the study conducted by Nsubuga et al. (2016) had positive attitudes towards contraceptive use. In South Africa, Bongongo and Govender (2019) identified positive attitudes among participants towards contraceptive use. The findings of Wodaynew and Bekele (2021) showed that more than two-thirds of the study respondents in Ethiopia showed positive attitudes towards contraceptive use. The findings of Obwoya et al. (2018) further indicates that, attitude of women contributed significantly to contraceptive use. In Vietnam, the findings of Tran and Vo (2018) also show that the majority of undergraduate students

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had favorable attitudes towards contraceptive use. Positive attitudes to contraceptive use have also been found in India among a group of medical students (Hogmark et al., 2013). In Jordan, most of the students involved in the study by Bardaweel et al. (2015) showed favorable attitudes towards contraceptive use.

The findings of Adegboyega (2019) show negative attitudes of study participants towards contraceptive use in Ilorin metropolis in Nigeria. Among a group of women in Northwest Ethiopia, the majority of them had negative attitudes towards the use of contraceptives (Oumer et al., 2020). The negative attitudes towards contraceptive use is also found among most of the student participants from Malaysia (Oo et al., 2019). In one of the studies conducted in Ethiopia, a little below half of the respondents were able to discuss sexual issues with their parents whereas an average of six out of ten students discussed sexual issues with their peers (Melaku et al., 2014).

Schandorf (2015) stated that condoms are the only form of contraceptive which provides a dual function of preventing the transmission of sexually transmitted infections such as HIV/AIDS and reduction of the probability of occurrence of pregnancy. This notwithstanding, the use of condoms among men in poor communities in Accra, Ghana was low, an indication of poor attitude towards contraceptive use (Schandorf, 2015). In recent years, the male population is beginning to approve and embrace the use of contraceptives; however, they are more comfortable with the female methods of contraceptives (Iribhogbe et al., 2013).

The paucity of information and available models of engagement between students and their parents and teachers also has an adverse effect on their knowledge and attitudes to contraceptives and sexuality matters (Ehiaghe & Barrow, 2022; Isaksen et al., 2020; Manu et al., 2015). For instance, the findings of Kinaro (2013) concluded on

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the biased sexuality information from parents and teachers to students using contraceptives. In the same study, teachers who were considered a primary source of information on sexuality were observed to be inadequately prepared to handle students challenges on sexuality and reproductive health issues (Kinaro, 2013). In a later study, although some improvements had been recorded, deficiencies in teachers and parents‘ ability to handle students sexual matters including contraceptive use persisted (Kinaro et al., 2015).

A positive attitude towards contraceptive methods is viewed as integral to the success of any campaign to promote usage (Beson et al., 2018). It is crucial to adopt innovative ways of building positive attitude among the public relative to contraceptive use (Bulto et al., 2014; Chandra-Mouli & Akwara, 2020; Makwinja et al., 2021). Thus, adequate knowledge and awareness of contraceptive methods is expected to impact on the attitude and usage of contraceptives (Guzzo & Hayford, 2018; Kasa et al., 2019; Nsubuga et al., 2016). But research shows that in spite of the numerous programmes initiated to create knowledge and awareness through radio, television and print media about the benefits of using modern contraceptive methods, there exists clear evidence that this has not achieved the desired impact of changing people‘s attitude (Komey, 2016; Nsubuga et al., 2016; Sharma et al., 2021). Furthermore, a study in has demonstrated differences contraceptive use among women with different social and cultural backgrounds suggesting that background of women may influence their attitudes toward contraceptive (Erlenwein et al., 2015).

There is the need to give adequate attention to improving attitudes to contraceptives use in the same way as attention is given to knowledge and awareness creation by various family health programs (Amalba et al., 2014). Health care providers should

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tackle factors that could adversely affect attitude in order to contribute to the achievement of programme goals and targets (Teye, 2013).

The age at which students begin having sex or practice sexual activities differs a lot, normally depending on the kind of mingling experiences and opportunities at their disposal which enables them to engage in such sexual activities (Akumiah et al., 2020; Atere et al., 2010; Schofield et al., 2008). This has been found in Ghana and other sub-Saharan African countries (Alhassan et al., 2021; Amoako, 2022). For instance, in Ethiopia, a study showed that the use of contraceptives increased with the age of the participants and students were more likely to use protection during sex due to changes in attitudes towards contraceptive use (Melaku et al., 2014).

The study according to Melaku et al. (2014) further indicated that conversations relating to sexuality and reproductive health issues between students, their parents and family at large tend to increase contraceptive awareness among students as these practices stimulate positive attitudes towards contraceptive use. College students who had prior communication with their parents before the onset of sex are three times likely to engage in the use of condoms or contraceptives during their first sexual encounter, with a high probability of having their first sex at an older age (Winskell et al., 2011).

In recent years, the male population is beginning to approve and embrace the use of contraceptives; however, they are more comfortable with the female methods of contraceptives (Iribhogbe et al., 2013). This underscores the importance of expanding male contraceptive methods beyond the condoms, vasectomy and withdrawal methods to include novel male contraceptives that may be accepted and be effective in

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preventing unintended pregnancies (Amory, 2020; Khourdaji et al., 2018; Thirumalai & Amory, 2021).

The choice to utilize contraceptives when having sex involves dynamic thought procedures and maturity of the mind which have attitudinal influences and usually related to one's personal and socio-cultural factors (Dehlendorf et al., 2017; Tesfa et al., 2022). It is important therefore, to foster positive decision making behaviours in order to improve contraceptive use choices among males and females (Dombola et al., 2021; MacQuarrie & Aziz, 2022; Mahendra et al., 2019). Among students, the value placed on education tends to influence their attitudes and results in the use of contraceptives (Kapito, 2012).

2.8 Knowledge of Contraceptive Use

Students' sexual behaviours and their exposure to the risk of conception has drawn reasonable attention from the global and local community (WHO, 2018, 2020b). It is indicative from the 2014 Ghana Demographic and Health Survey [GDHS] that, acquiring knowledge about contraceptive methods is a crucial step towards gaining access to contraceptive services and adopting a suitable contraceptive method (GSS et al., 2015). Among students who are indulging in sex, the use of contraceptive reduces the occurrence of unintended pregnancies and sexually transmitted diseases (Grindlay et al., 2018; Kallner & Danielsson, 2016). However, before using a contraceptive, students must first have knowledge of the different contraceptive methods (Pazol et al., 2015).

According to the 2014 GDHS, knowledge of contraceptive is almost universal in Ghana. The report shows that 96.5% of students aged 15-19 had some form of knowledge about at least one method of contraception (GSS et al., 2015). Similar to

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the 2014 GDHS, Asiedu et al. (2020) also reported nearly a universal knowledge among study respondents in the Ashaiman Municipality in Ghana. In another Ghanaian study conducted in the Ashanti Region, about 95% of adolescents were identified to have good knowledge about contraceptives (Agyemang et al., 2019). Among students from the Takoradi Polytechnic in the Western Region of Ghana about 93.3% were knowledgeable about contraceptives (Manortey et al., 2016). Another study conducted in the Greater Accra region by Chimoun (2017) showed a high level of contraceptive awareness and knowledge.

Some students from the Ledzokuku-Krowor Municipality in Accra also demonstrated high knowledge about contraceptives in Ghana (Beson et al., 2018). The study conducted by Mohammed et al. (2019) also showed that, a group of nursing students in northern Ghana had appreciable knowledge on contraceptives. Similarly, Yidana et al. (2015) about 74.8% of respondents were knowledgeable about contraceptives in northern Ghana. Compared to the above knowledgeable levels, findings from Effutu Municipality in the Central Region and Kumbugu in Northern Region in Ghana showed relatively lower knowledge of 64.9% and 66.9% respectively.

In sub-Sahara Africa and other regions, knowledge levels on contraceptives have been varied. For instance, in Uganda, Nsubuga et al. (2016) found a universal knowledge level among a group of university students. Additionally, about 85.6% of respondents in a study conducted in North-West Nigeria had good knowledge on contraceptives (Adefalu et al., 2018). In Southern Ethiopia, contraceptive knowledge was estimated to be about 58.4% among university students. Elsewhere in Malaysia, Fatimah et al. (2019) reported an appreciable knowledge score of about 88% among university

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students. Another Malaysian study, however, found a lower knowledge level compared to the findings of Fatimah et al. (2019).

There has also been low level of knowledge from several studies. This is usually in relation to having detailed information about contraceptive methods. Even where they are aware of and do know the different methods, they usually do not have access to them (Parker, 2005). Nketiah-Amponsah et al. (2012) found low levels of contraceptives use among young women in reproductive age in Ghana. Similarly, Appiah-Agyekum and Kayi (2013) found that, detailed knowledge on contraceptives among students was low in Ghana.

In Kenya, though there was knowledge about contraceptive use during a study to ascertain the knowledge, perception and information that the students in Kenya had concerning contraceptives, it showed that the knowledge was deemed to be shallow, since some of the participants could not distinguish the fact that condom was the same as contraceptives (Miano & Mashereni, 2014). Furthermore, another study in Ethiopia indicated that in spite of the high rate of unwanted pregnancies, the uptake of contraceptives to prevent such an occurrence amongst university students were disproportionately low and poorly understood (Nibabe & Mgutshini, 2014). Amran et al. (2019) also showed that, contraceptive knowledge level among acceptors in Indonesia was low.

In other instances, students may generally have little knowledge about contraceptives and their effective use. According to a 2004 Youth Reproductive Health Survey observed that at least 90% of the students studied, at most knew of one form of contraceptives. Quite worrisome was the fact that, the male condom was mostly the

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only known form of contraceptives; their knowledge of other contraceptive methods was not quite assuring Awusabo-Asare et al. (2006).

Male students who had received some form of education and information on sex in school showed that, they were considerably more susceptible to using condom consistently, as related to their peers who had not received any sex talk or education (Bankole et al., 2007). Demonstrating how to use condom appropriately tended to have a positive outcome in the sense that, male students who had been taught how to use the condom through demonstrations, were more likely to engage in condom use during sexual encounters, as they had been given a form of education on how it is supposed to be used (Bankole et al., 2007). During research conducted in a rural based South African University, the teenage participants stated the lack of knowledge about the use of contraceptives as one of the leading causes of unwanted pregnancy (Lebese et al., 2015).

Nyongesa and Odunga (2015) in their paper articulates that, there is abundant information that contraceptive knowledge and awareness is high among the sub-Saharan Africa population. However, the awareness and knowledge has not translated into increased contraceptive use thus, resulting in very low contraceptive prevalence especially among students (Agyemang et al., 2019). Thus, the quagmire of high unmet contraceptive needs amidst high knowledge levels requires attention of various programmes and interventions (Casey et al., 2020). The low contraceptive prevalence correlates with elevated levels of unplanned pregnancies and abortions, leading to increases in maternal mortality ratios especially in the rural areas (Nyongesa & Odunga, 2015; Tucho et al., 2022).

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An earlier report by Khan and Mishra (2008) asserted that, having knowledge and a good understanding of contraceptives and their uses tended to be an essential step towards the overall acceptance towards initiating or using contraceptives during sex. However, some recent studies have found low knowledge levels of contraceptives coupled with misinformation, misconceptions and misperceptions which negatively affects the use of contraceptives (Asiedu et al., 2020; Komey, 2016; Mbilinyi & Moshiro, 2020; Oonyu, 2020). According to Mbilinyi and Moshiro (2020), knowledge and its resultant use in contraceptives were unsatisfactory among school age teenagers. Similarly, knowledge and use of contraceptives among female students at Makerere University in Uganda was limited (Oonyu, 2020).

Knowledge about reproductive health issues have assumed central focus in most health sectors compared to previous decades (UNFPA, 2018). Such widespread knowledge is now predominant that it should be uncommon for young adults to engage in risky sexual behaviours (Appiah-Agyekum & Kayi, 2013). Williamson et al. (2009) indicated that university students use contraceptive methods in five developing countries is limited by a range of factors, which centred on lack of knowledge and access. Inadequate knowledge may also stem from widespread assumptions and apathy (Appiah-Agyekum & Kayi, 2013).

Another challenge influencing the inadequacy of knowledge of contraceptives among students may be the limited access to such information through formal academic means. In Ghana for instance, there are no exact courses in the educational curriculum labelled as sex education tools; both the teachers and students alike make do with subjects that have relevant education on sex they are able to get from Reproductive

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health topics in Reproductive system in biology as well as a couple of Family Life subjects in Social Studies (Adda-Balinia et al., 2016; Cocker, 2016).

The appropriate use of contraceptives, prevention of sexually transmitted diseases and infections, coping with secondary sexual characteristics and relationships need severe attention in the lives of students through appropriate student-parent communication which has been low in Ghana (Klu et al., 2022; Tenkorang & Adjei, 2015). The low level of adolescent-parent communication has been reported in other SSA and has been identified to affect knowledge of student on contraceptives (Bekele et al., 2022; Yibrehu & Mbwele, 2020).

Yibrehu et al. (2020) reports from their study in Ethiopia that, the practice of discussing sexual and reproductive health between students and their parents was uncommon and were influenced by culture and gender related challenges as well as inadequate parental knowledge. This finding is supported by that of Adam et al. (2020) where inadequate parent-student communication on sexual and reproductive health issues affected adolescent knowledge on contraceptives.

Having knowledge and a good understanding off contraceptives and their uses tended to be an essential step towards the overall acceptance towards initiating or using contraceptives during sex (Khan & Mishra, 2008). Knowledge of contraceptives is generally poor, students are misinformed; thus, making usage low even though they have positive attitudes regarding the use of contraceptives, they have the believe that it is especially not safe for female users though contraceptives are available making the use of contraceptives underutilized in Nagpur (Relwani et al., 2015).

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In Kenya, for instance, though there was knowledge on contraceptive use during a study to ascertain the knowledge, perception and information that the adolescents in Kenya had concerning contraceptives; it showed that the knowledge was deemed to be shallow, since some of the participants could not distinguish the fact that condom was the same as contraceptives (Miano & Mashereni, 2014).

Also, with students in Ghana for instance, there are no exact courses in the educational curriculum labelled as sex education tools. Both the teachers and students do away with subjects that have relevant education on sex; they are able to get from Reproductive health topics in Reproductive system in biology as well as a couple of Family Life subjects in Social Studies (Adda-Balinia et al., 2016). The challenge is similar for out-of-school adolescents and girls in their reproductive age where sex education and education on reproductive health are lacking (Seidu et al., 2022). The appropriate use of contraceptives, prevention of sexually transmitted diseases and infections, coping with secondary sexual characteristics and relationships needs severe attention in the lives of students (Tenkorang & Adjei, 2015). Thus, ensuring an integrative approach to reproductive health education among students can influence a range of students risky sexual behaviours (Millanzi et al., 2022).

The different types or methods of contraceptives and how they function will clear a lot of misperceptions associated with contraceptives (Nsubuga et al., 2016). This will make users better informed and more confident in deciding which method to use. For instance, in industrialized countries with high knowledge level, virtually all married women use one form of contraceptive at some time in their reproductive lives (WHO, 2019). The picture in developing countries is different as modern contraceptive use is extremely low (Egede et al., 2015). Studies in Ghana have found low knowledge of

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how various contraceptive methods work and therefore act as a barrier to contraceptive use in Ghana (Hindin et al., 2014). Meanwhile, the current knowledge of any family planning method in Ghana among women is almost hundred percent (Amalba et al., 2014). In addition, studies have found an association between knowledge of long-acting reversible contraceptives (LARC) method and use (Anguzu et al., 2014).

It is thus obvious that, although knowledge of contraceptives is important in promoting use of contraceptives, there is the need to explore other factors that determine modern contraceptive use in order to holistically tackle the issue of low contraceptive use (Ahinkorah et al., 2021). In Ghana, contraceptive knowledge is acquired through several platforms such as schools, both print and electronic media which carry advertisements and educational messages aimed at sensitizing the public about contraceptives in order to create knowledge and awareness (Asiedu, 2017). This is expected to result in usage of contraceptives (Hindin et al., 2014). Mostly, these educative programmes are undertaken by the Ghana Health Service and development partners and non-governmental organizations. Other studies in Ghana have reported other means of knowledge creation of contraceptive methods through the use of communication channels such as conversation, the town crier, the market place and churches (Asamoah et al., 2013).

Osei et al. (2014), in their study to assess the decisions on fertility and contraceptive use by women in the course of their relationships learnt that study participants were very knowledgeable about the various types of contraceptives available in Ghana. The most common method mentioned were the male condom, the calendar method and the injectable, the pill, the Intra Uterine Device (IUD), the implant and spermicides.

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However, very few of them had fair knowledge about female sterilization, male sterilization and contraceptive (Anita et al., 2020; Osei et al., 2014).

Due to lack of knowledge about available contraceptives to serve their needs over 200 million women in developing countries get themselves pregnant when they could have delayed or even stopped bearing children altogether (Kabagenyi et al., 2014). This serves as a barrier and thus, preventing them from contraceptive use. These include the individual woman level factors, household or community level factors and health service level factor.

At the individual level, fear of side effects, cost of service, distance to the clinic, non-availability of family planning service and poor services from provider has been reported as leading determinants in the choice and use of contraceptives (Apanga & Adam, 2015; Guure et al., 2019; Schrumpf et al., 2020). Many women worry greatly over whether to practice contemporary methods of contraceptives because she would have to consider community factors regarding family planning, her own personal needs as well as the type of sexual union she is involved in (Hindin et al., 2014).

Misconstrued side effects, use of contraceptive among women, disfavour among male partners, cultural and social standards concerning fertility were negative elements restricting or decreasing contraceptive use (Fatimah et al., 2019; Hindin et al., 2014; Ibrahim et al., 2019; Mayeda et al., 2014). Education, jobs and interaction with male partners were among the positive factors. The use of contraceptive is a multidimensional issue in sub-Saharan Africa which demand wide-ranging intercession from the community and systems aimed at counteracting adverse perceptions and misinformation (Blackstone et al., 2017; Blackstone & Iwelunmor, 2017).

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2.9 Gender Difference in Contraceptive use among Students from Colleges of Education

The influencing role of gender in determining the use of contraceptives among students is important to inform the design of programme interventions and educational strategies to improve performance. There have been reports of differences in the use of contraceptives among students. For instance, in the US, contraceptive use was higher among males than females (Martinez & Abma, 2020). Prior to the 2017 assessment by Martinez and Abma (2020) their earlier assessments in Martinez and Abma (2015) and Abma and Martinez (2017) show varied differences in the use of contraceptives among males and females.

According to Oyedele (2021) from Nigeria, contraceptive use among female respondents was higher than among their male counterparts. Also, the findings from a study in Santo Domingo in Dominican Republic, showed contraceptive use was higher among females compared to males with a statistically significant relationship (Khamishon et al., 2019). These findings remain inadequate in determining the extensive difference between males and females. It is important for adequate investigation to be made to explore the difference in contraceptive use among males and females.

2.10 Conceptual Framework

The study after reviewing the theories of contraceptives use among students of colleges of education shows the conceptual framework. This framework has two categories namely independent variable and dependent variables. While a number of studies have been conducted on contraceptive use among students, no standard conceptual frameworks currently exist particularly in relation to the factors that may

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influence contraceptive use among students in colleges of education. Based on review of extant literature, however, a number of possible influencing factors have been identified. These have been used to develop a conceptual framework for the current research (see Figure 2.4).

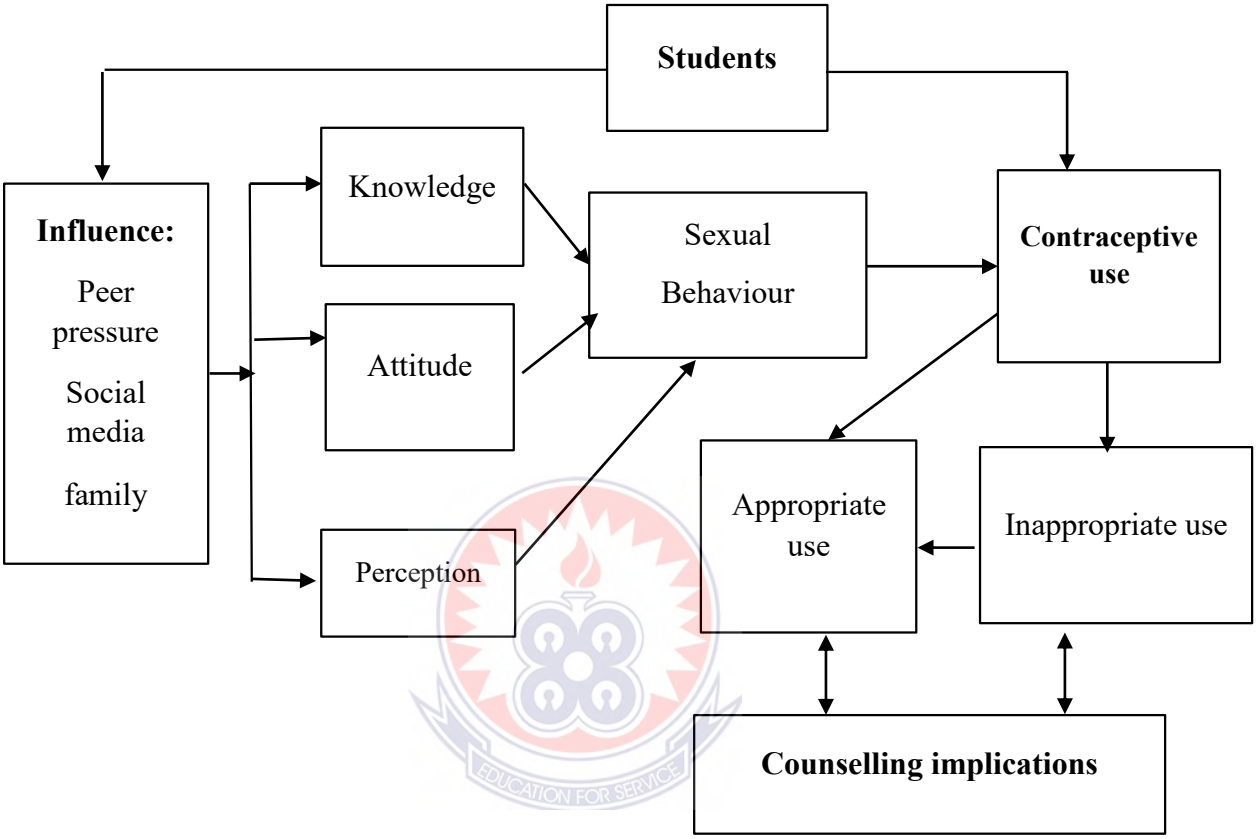

Fig.2.1: Conceptual Framework

The conceptual framework consists of different factors according to the researcher perspective based on the review of related literature that influence the use of contraceptive among students of colleges of education. These factors include peer pressure, social media and family which act on the knowledge, attitude and perception toward their sexual behaviour. The student's sexual behaviour influences contraceptive use; which is appropriate use or inappropriately use leads to counselling implications.

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2.11 Chapter Summary

The chapter reviewed literature on the use of contraceptive use among students. The chapter explored three theories and applied them to the use of contraceptives among students. These included the social learning theory, theory of planned behaviour and the health belief model. It further reviewed the sexual behaviour of students who are mostly adolescent and young adults. One of the ways to ensure positive sexual behaviours is the use of contraceptives. The concept and types of contraceptives were discussed. Furthermore, the knowledge, attitudes and perception of adolescents were also discussed. Finally, a section was devoted to reviewing related literature on the gender differences between males and females.

From the review, although there has been extensive work in the field on sexual behaviour and contraceptive use among adolescent students, adequate information on the subject is limited. Furthermore, the systematic and contextual exploration of the differences in contraceptive use among males and females is much limited in the body of literature in Ghana. This requires the need to invest efforts to identify knowledge, attitudes and perceptions of students on contraceptive use and further explore the gender differences influencing contraceptive use.

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CHAPTER THREE

METHODOLOGY

3.0 Introduction

Methodology describes the theoretical and practical concerns, procedures and processes by which researchers design specific techniques for collecting and analysing data, defining, explaining and predicting phenomena (Plonsky, 2017). This chapter discusses the theoretical and philosophical perspectives which inform methodological choices with regard to the research paradigm, approach and design in this particular study. Again, the chapter discusses the study setting, population and sample selection. It further discusses the data collection instruments, validity and reliability as well as trustworthiness of instruments, data collection procedures, data analysis, and ethical considerations of the study.

3.1 Study Area

The research was conducted in Greater Accra and Eastern regions of Ghana. The Greater Accra Region is the most urbanized region in the country with 87.4% of its total population living in urban centres. It is the smallest region in Ghana with a total land coverage of 3,245 sq.km. This is 1.4 per cent of the total land area of Ghana. It is the second most populated region, after the Ashanti Region, with a population of 4,010,054 in 2010, accounting for 16.3 per cent of Ghana's total population.

Geographically, the Greater Accra Region is bordered on the north by the Eastern Region, on the east by the Volta Region, on the south by the Gulf of Guinea, and on the west by the Central Region. Its capital is Accra which is at the capital city of Ghana. There are 51 senior high schools (private and public schools) 25 public and

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private universities and two colleges of education namely; Accra and Ada colleges of education.

The Accra College of Education is one of the 46 public colleges of education in Ghana. The college was established on September 8, 1909 and is situated at Legon-Madina at the Eastern zone of the region. The college is affiliated to the University of Ghana and offers courses such as French, General programmes, Mathematics, Technical skills and Early Childhood Education Studies. The college has six departments, which are Vocational Skills, Languages, Science, Educational Studies, Mathematics & ICT, and Social Sciences departments.

The Ada College of Education is located in Ada-Foah in the Greater Accra Region of Ghana. The college has its accreditation from the University of Cape Coast. It was established in 1965. The college has six departments and offers programmes specialized in Primary and Junior High School, Early Childhood Education Studies, Mathematics/Science, French, Technical & Vocational Skills, Visually and Hearing Challenged.

Eastern Region is located in southern Ghana and is one of the sixteen administrative regions of Ghana. It is bordered to the east by the Lake Volta, to the north by Bono East Region and Ashanti Region to the west, to the south by Central Region and Greater Accra Region. Akans are the dominant inhabitants and natives of the region. The main languages spoken are Akan, Akuapim, Larteh, Ewe, Krobo, Hausa and English. The capital town is Koforidua. The region covers an area of 19,323 square kilometers, which is about 8.1% of Ghana's total landform. There are 68 senior high schools, five public and private universities and seven colleges of education which comprises Methodist College of Education at Akim-Oda, Kibi Presbyterian College

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of Education, Presbyterian College of Education, Akropong, Presbyterian Women's College of Education, Aburi, Mount Mary College of Education, Somanya, Seventh Day Adventist College of Education, Asokore, and Abetifi Presbyterian College of Education.

Methodist College of Education which is located in Akim-Oda in the Eastern Region was established in 2012. It is affiliated to University of Education, Winneba. Kibi Presbyterian College of Education is located at Kibi and established in 1963. Programmes offered are Early Childhood Education, Primary Education, Science & Mathematics, I.C.T & Mathematics, Science, Technical & Vocational Skills, Social Studies and French. It is affiliated to University of Education, Winneba.

Presbyterian Women's College of Education is an all-female college which is located at Aburi in the Eastern Region Ghana. The college was established by the Basel missionaries in 1928 and offers the following programs: Technical Science, General Science, General Arts, Visual Arts, Business Accounting, Agricultural Science and English.

The Presbyterian College of Education, Akropong which was opened in 1848 was the first college of education in the then Gold Coast. It was established by the Basel Mission in the Akwapim District of the Region. The programmes offered are Vocational & Technical Skills, Languages, Science, Educational Studies, Mathematics, ICT, Social Sciences and Communication Skills.

Abetifi Presbyterian College of Education is a teacher education college in Abetifi-Kwahu (Kwahu East in the Eastern Ghana) established by the Presbyterian Church. The college was established in 1952 and is affiliated to University of Cape Coast. The

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courses offered are Accounting. Advertising, African Studies, Animation, Art History, Audio Production, Integrated Science, Social Studies and Mathematics.

The Adventist College of Education is located in Asokore in the New Juaben Municipality of the Eastern Region. The college is affiliated to the University of Education, Winneba. The S.D.A College of Education was established by the government in collaboration with the SDA Church in 1962. It is a mixed school. Programmes offered are Early Childhood Education Studies, Mathematics & Science, and General Programmes.

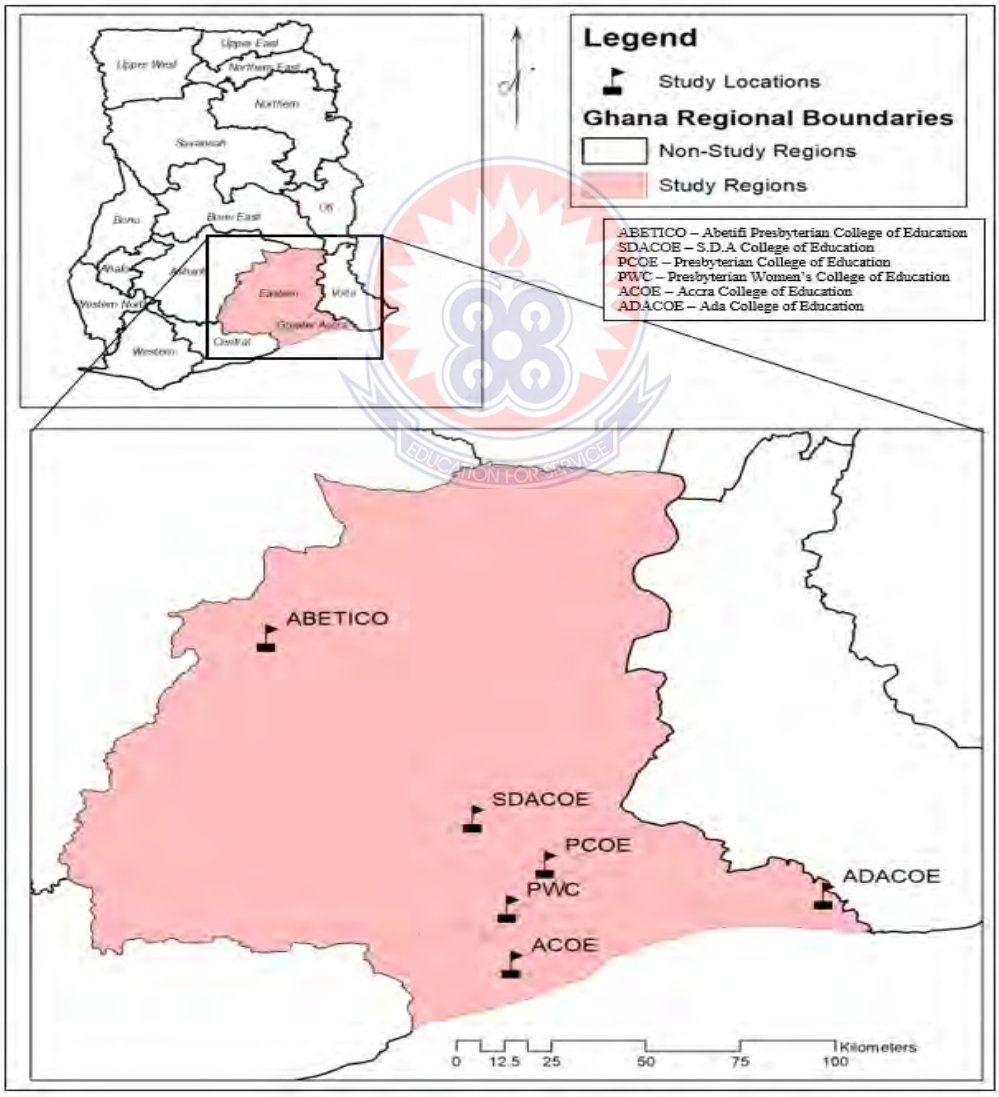

Figure 3.1: Map of Ghana showing Study Locations

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3.2 Population of the Study

The term ‗population' refers to all individuals or items in the category of things that share similar characteristics that are being researched (Creswell, 2014; Creswell et al., 2016; Kusi-Appouh, 2012). At the time of the study, there were traditionally forty-six (46) colleges of education in Ghana, which hitherto comprised thirty-eight (38) public and eight (8) private institutions.

The study's target population was reduced to college of education students from Eastern and Greater Accra regions. There were nine (9) colleges of education including Accra College of Education, Ada College of Education, Presbyterian Women's College of Education at Aburi, Presbyterian College of Education at Akropong, Presbyterian College of Education at Abetifi, Presbyterian College of Education at Kibi, Seventh Day Adventist (SDA) College of Education at Koforidua, Mount Mary College of Education at Somanya and Methodist College of Education at Akim-Oda. Although nine colleges of education were available in the two regions, six of them form the target population of the study.

Table 3.1: Target Population Distribution of Colleges of Education in Greater Accra and Eastern regions, Ghana

College of education	Enrolment			
	First year	Second Year	Third Year	Total
Accra (ACOE)	298	351	400	**1049**
Ada (ADACOE)	335	259	311	**905**
Presbyterian Women (PWC)	386	218	223	**827**
Presbyterian, Akropong (PCOE)	682	493	476	**1651**
Presbyterian, Abetifi (ABETICO)	500	400	379	**1279**
SDA (SDACOE)	863	472	397	**1732**
Total	**3064**	**2193**	**2186**	**7443**

Source: Field data from the various colleges (2021)

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It was observed from the schools‘ enrolment that, all the 7443 students from the six colleges of education were accessible for the study, and therefore, formed the sample frame.

3.3 Theoretical and Philosophical Stance of the Study

This section discusses the research philosophy which is made up of the ontological and epistemological underpinnings and paradigm of the study. A research philosophy is a paradigm that depicts the manner in which data on a phenomenon is collected, analysed and presented as well as the manner of how to capture, interpret and use information (Creswell, 2014). Jarvie and Zamora-Bonilla (2011), further stated that it is the general philosophical perspective on the essence of what the researcher brings to a study.

There are different paradigms in research, which include positivism, interpretive and pragmatism. Patten and Newhart (2017), indicated that paradigms have their interpretations of reality and knowledge construction, Thus, these paradigms have their philosophical stance regarding what constitutes reality (ontology) and how to interpret reality (epistemology) and the best way to research reality (methodology) (Teddie & Tashakkori, 2008).

The positivist paradigm is situated within the normative school of thought which is linked to the objectionist epistemological perspective. Positivists believe that in doing research, values should be driven out and the methodological approach they propose in achieving value-free research is quantitative (Patten & Newhart, 2017). The foundation of all other philosophical contest is based on the ontological, epistemological and methodological assumptions of positivism.

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From the positivist viewpoint, social reality exists and it is independent to the researcher (Creswell, 2014; Kusi-Appouh, 2012). The positivist paradigm of research overly relies on quantitative observations and hypothetico-deductive approaches leading to largely descriptive deductions and may lack insight into relevant in-depth issues and phenomenon (Park et al., 2020). Therefore, using only the positivists' paradigm would not be appropriate to achieve the stated aim of the current study.

Another paradigm is interpretive which is linked with the realist school of thought and situated within the subjectivist epistemology. Interpretive researchers believe that participants can create their knowledge. Interpretive researchers also dismiss the objectionist epistemology and argue that knowledge is not discovered through scientific phenomenon (Creswell, 2014). However, unlike the objectivity in the positivism paradigm, the interpretive paradigm suggests that if human beings know they are being observed, they will change their behaviour. Interpretivists, therefore stated that if researchers want to understand social action, they need to look into the way it takes place. Thus, interpretivism is associated with qualitative research and it helps in understanding participants' world would not be appropriate to achieve the stated aim of the current study. This is due to the limitation of the interpretive paradigm in achieving objective conclusions due to its subjective approach (Alharahsheh & Pius, 2020; Lan, 2018). Hence, the researcher aligns herself with pragmatic paradigm.

Pragmatism arises out of actions, situations and consequences rather than antecedent conditions (Creswell, 2009). The pragmatic paradigm implies that the overall approach to research is that of mixing data collection procedures and analysis within the research process. Pragmatism is concerned with what works when finding

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solutions to a problem, instead of strict adherence to positions as with positivism and interpretivism. Consequently, the emphasis is not solely on methods but also on the research problem and employs all approaches available to understand the problem. It draws on many ideas including using ―what works," using diverse approaches and valuing both objective and subjective knowledge (Hanson et al., 2005).

The study adopted the pragmatist paradigm in which both quantitative and qualitative methods of data collection inform the problem under study (Tashakkori & Creswel, 2007). The pragmatist takes aspects from both positivist and interpretivist positions. Therefore, in the context of this study, maxim of pragmatism is simply the combination of the ideas of interpretivism-positivist philosophical approach which require proper and accurate statistical methodology that aims at reaching meaningful results with value in real life to support data that focuses on statistical significance of difference between numbers (Westfall et al., 2007).

Flowers and Edeki (2013) suggested that ontologically and epistemologically, the truth of a reality should be arrived at through a combination of both positions; that is, the positivist paradigm that goes for quantitative method of data collection, and the constructivist or interpretivist for qualitative method as well as using both deductive and inductive reasoning at the same time because of the social phenomena base on natural setting and multiple premises in which reality is constructed by college students. Wardani and Kusuma (2020) define inductive as moving from the specific to the general, while deductive begins with the general and ends with the specific. Arguments based on experience or observation are best expressed inductively, while arguments based on laws, rules, or other widely accepted principles are best expressed deductively.

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Yu (2007) explained that the deductive researcher ―works from the _top down', from a theory to hypotheses to data to add to or contradict the theory" while inductive works from the ―bottom-up, using the participants' views to build broader themes and generate a theory interconnecting the themes". In research, the two main types of analysis typically used are quantitative (deductive) and qualitative (inductive). These two methods of reasoning are not mutually exclusive and often address the same question using different methods and centered on how they view the nature of reality (Onwuegbuzie & Leech, 2007).

3.3.1 Ontological underpinning of the study

Ontology is about the nature of reality and refers to one's view of reality and being and has to do with whether the social world is regarded as something external to social actors or as something that people are in the process of fashioning (Glattfelder, 2019). It is concerned with claims and assumptions made about the nature of social reality. Ontology further relates to knowledge as to whether objective knowledge exists independent of its social actors or it is constructed through social interactions. There are basically two approaches to view the nature of social reality. These are objectivism otherwise known as positivism and subjectivism or interpretivism.

Objectivists assume that there is one reality that exists independently of human and social reality; it is objective in the sense that they do not depend on human reality (Creswell, 2012). In contrast, subjectivists assume that, the social world depends on how people understand it. It is subjective because they assume that reality depends on the context (Bell et al., 2022). This study explored the perception, knowledge and attitude of students regarding contraceptive use via the mixed methods research approach to studying reality.

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3.3.2 Epistemological underpinning of the study

Epistemology describes what is true and it concerns the bases of knowledge, including its nature, form and how it can be acquired and communicated among human beings (Ansari et al., 2016). It is concerned with the origin, nature, methods and limits of human knowledge and seeks to answer the question of ~~"h~~ow we know what we know". It is the process of knowledge acquisition that relates to what is regarded as appropriate knowledge about the social world or phenomena. In terms of epistemological assumptions for this study, the researcher believes that exploring the perception, knowledge and attitude of students regarding contraceptive use require an in-depth study. Using a survey only, for example, would not be an appropriate method to obtain adequate knowledge, so the researcher favours the pragmatist approach to gaining knowledge both subjectively and quantitatively.

Knowledge of these orientations, ontology and epistemology are important in research because they influence the intentions, goals and philosophical assumptions of the researcher, which are inextricably linked to how the research is conducted. Accordingly, the researcher plunges the study into the pragmatist research paradigm. Thus, a mixed methods research approach within the pragmatist paradigm is employed given the nature of the stance on both ontology and epistemology.

3.3.3 Justification for using pragmatist paradigm for the study

In every research, the paradigm and philosophical perspectives underpinning the study determines the methods that would be adopted for the study. The pragmatist paradigm favours mixed-methods and therefore ensures that the contextual realities of the people being studied are taken into consideration (Davies & Fisher, 2018), in ways that allows contexts to be compared and contrasted (Cartwright et al., 2014).

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This means that, instead of fixed reality assumption of positivism or strictly subjectively constructed assumption of interpretive, pragmatism adopts inter-subjectivity where a single reality can be assumed bearing in mind that this reality manifests differently in different contexts (Cartwright & Montuschi, 2014).

Flowers and Edeki (2013) reported that pragmatists take the view that researching from different angles and at multiple levels will all contribute to understanding since reality can exist on multiple levels. The pragmatist stance, therefore, suggests that neither quantitative surveys nor qualitative surveys only are enough to give explanatory and generalized information to people's opinions and decisions. As a result, both the quantitative and qualitative methods are deemed proper and most appropriate for the study. The philosophical perspective of pragmatism is relevant for this study because it ensures methodological congruence in the investigation of the research questions and hypotheses, as well as the choice of methods for data collection and analysis.

Again, pragmatism underpins the mixed methods approach to research and uses pluralistic approaches in acquiring knowledge. Onwuegbuzie and Leech (2007) argued that mixed methods research uses a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution. This implies that, the overall approach to research is that of using varied data collection procedures and analysis within the research process. This view is shared by other researchers such as Creswell (2012); Creswell et al. (2016); and Yu (2007).

The researcher used the pragmatic paradigm in order to apply the positivist approach which ensured numerical values for generalization (Choy, 2014; Saunders & Tosey, 2015; Snelson, 2016), and interpretative view of making an in-depth investigation of

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the perception, knowledge and attitude of students regarding contraceptive by participants and researchers on knowledge construction. This meant that, the contextual realities about contraceptive use were taken into consideration in the knowledge construction and also allowed the researcher to compare and contrast with findings of the study. This helped the researcher to obtain qualitative and quantitative data which enhanced generalization of research findings.

3.4 Research Approach

Research approach is the overall plan and methodology which is chosen to integrate various parts of a study coherently to address a research question or hypotheses (Plonsky, 2017), and it includes data collection and analysis processes or techniques (Creswell, 2009; Creswell et al., 2016; Patten & Newhart, 2017). The basic approaches that exist in research are qualitative, quantitative and mixed methods (Creswel, 2012; Creswell et al., 2016; Tashakkori & Creswel, 2007). The pragmatists paradigm which underpins this study demands a mixed methods approach to research.

The mixed methods approach is an approach in which the researcher collects and analyses data, integrates the findings and draws inferences using both quantitative and qualitative approaches and methods in a single study or a programme of study (Creswell, 2009; Tashakkori et al, 2007). The mixed methods thus, allows the concurrent use of the quantitative and qualitative methods.

The mixed methods of research use a method and philosophy that attempts to fit together the insights provided by qualitative and quantitative research into a workable solution. The study adopted the mixed method approach for the reasons including triangulation which refers to the use of two or more independent sources of data or data collection methods to corroborate research findings within a study. It is further

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used for facilitation which is the use of one data collection method or research strategy to aid research using another data collection method or research strategy within a study.

3.4.1 Justification for using mixed methods approach

The mixed method approach has become a third tradition on its own, with peculiar philosophical underpinnings and terminologies (Yu, 2007). The approach is adopted for this study based on the recommendation by Teddie et al, (2008) that mixed-methods approach is particularly useful for conducting research in Guidance and Counselling and Counselling Psychology. This is because when both quantitative and qualitative data are included in a study, researchers may enrich their results in ways that one form of data does not allow and for in-depth understanding and credible results (Teddie et al, 2008; Bell et al., 2022).

Also, using both forms of data, for instance, allows researchers to simultaneously generalize results from a sample to a population and to gain a deeper understanding of the phenomenon of interest (Hanson et al., 2005). Again, combining qualitative and quantitative approaches are very helpful in evaluation and intervention research as part of a mixed-methods strategy for investigating the research questions. Integrating qualitative and quantitative approaches in intervention and evaluation research is often done as a means of enriching the results derived from the approach.

Also, it has been indicated that, there is much to be gained from a fusion of quantitative and qualitative methods in a single study of social phenomenon, most of which should be appropriately looked at from different angles (Creswell, 2014). Thus, combining both quantitative and qualitative approaches is appropriate to achieve the stated aim of a study as noted by researchers (Creswell et al., 2016; Kusi-Appouh, 2012) Moreover,

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the researcher selected mixed-method approach to reveal the complexities of social reality as observed by researchers (Davies & Fisher, 2018; Jarvie & Zamora-Bonilla, 2011).

Since quantitative method or approach is insufficient to capture the contraceptive use among students of Colleges of Education (Peus et al., 2015), both qualitative and quantitative approaches were chosen for this study. Furthermore, using a mixed method helps in understanding and exploring the research problem better than using either quantitative or qualitative (Creswell, 2012). Also, integrating quantitative and qualitative method into one study ensures that the weaknesses of one method are supplemented by the other. The use of a single method that is either quantitative or qualitative has its flaws which can be overcome by combining the two methods in a single study (Halcomb & Hickman, 2015).

More so, the mixed method assists the researcher to observe a phenomenon using both data forms to produce ―deep structure" conclusions. Thus, the approach of using quantitative and qualitative methods strengthened the exploratory power above and beyond the single use of a either method. With the mixed methods approach, the qualitative phase offers the opportunity for the researcher to dig deeper into the perception, knowledge and attitude of students regarding contraceptive use. Again, the use of mixed methods approach would offer opportunity to gather a large quantitative data from participants to engender generalizations of research findings of the study. The use of both qualitative and quantitative approaches strengthened the approach to this current study.

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3.4.2 Rationale for combining qualitative and quantitative approaches

In this study, the following reasons were assigned as the motivation for opting for the mixed method approach. The rationale for combining qualitative and quantitative approaches in the present study was that, the researcher sought to reconcile the quantitative data with the qualitative data of the respondents for in-depth understanding and credible results. In other words, the quantitative data is meant to consolidate and complement the qualitative data. This agrees with the assertion by Bell et al. (2022) that using the two approaches in a single study, enhances the researcher's claim for validity of his or her conclusions.

The decision to combine the approaches for the study also afforded the researcher the opportunity to explore the research hypotheses on the study from more than one angle for better and broader understanding of issues pertaining to a social phenomenon (Bell et al., 2022; Creswell, 2014). The better and broader understanding meant that, the difference methodological approaches led to uncovering more valuable information on the research questions. Therefore, both quantitative and qualitative data on the study enhanced the comprehension of the problem and provided insights into address the research questions.

Furthermore, the demands of the research questions were based on a comprehensive and holistic approach which defined the use of both the quantitative and qualitative methods. Also, the researcher wanted to compare the results of both the quantitative and qualitative data to draw conclusions. It is also the opinion of the researcher that, phenomenon which were difficult to measure quantitatively could be measured qualitatively to draw conclusions; hence, the decision to employ the two approaches.

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3.5 Research Design

Researchers generally assess the demands and expected outcomes of their research questions in order to determine the research design that will support the approaches to answering the research questions (Creswell, 2014). Therefore, research design is the overall plans and procedures for collecting data in order to answer research questions. In other words, research designs can be described as a master plan which indicates the strategies for conducting research (Creswell et al., 2016).

The concurrent triangulation design was adopted and used for this study. The concurrent triangulation design used both qualitative and quantitative data to carefully define relationships among variables of interest in order to explore reality, enhance confidence and understand the phenomenon under study as well as ensuing findings of a research (Creswell & Plano, 2011; Edmonds & Kennedy, 2017). It is a technique that facilitates validation of data through cross verification from two or more datasets (Creswell, 2014). This design was used because the researcher wanted to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data with the purpose of seeking convergence, corroboration and correspondence of results from different methods.

The study employed the concurrent triangulation approach because of its single-phased timing (Creswell, 2014). It generally involves the concurrent, but separate, collection and analysis of quantitative and qualitative data so that the researcher may best understand the research problem. The researcher attempted to merge the two data sets, typically by bringing the separate results together in the interpretation of transforming data to facilitate integrating the two data types during the analysis.

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The choice of mixed-methods **concurrent triangulation** design for this study was guided by the pragmatist paradigm and that, the combination of the qualitative and quantitative approaches were used in a single study (Tashakkori & Creswel, 2007; Teddie et al, 2008). The mixed method design was used such that data was collected over the same timeframe (concurrent), and merged using convergence design. This was then weighted (parallel) employing multiple methods to examine same issues (triangulation). All efforts were put into minimizing bias in this study as demonstrated in the figure below:

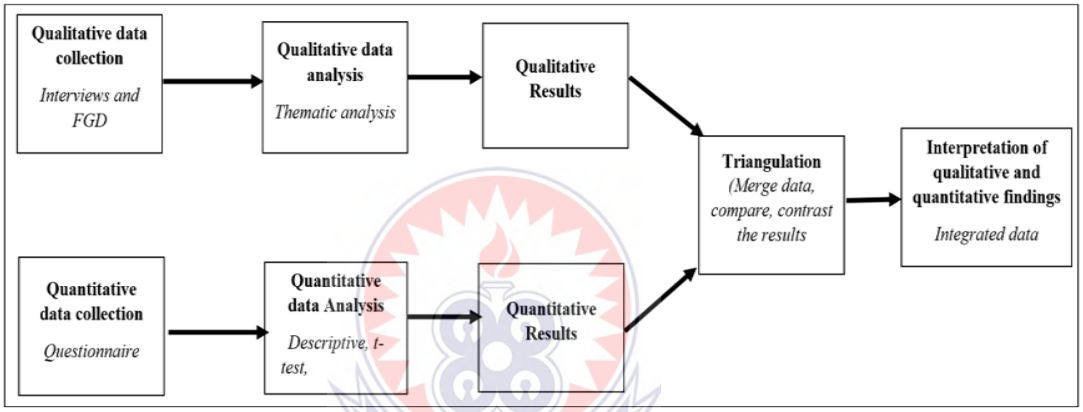

Figure 3.2: Concurrent triangulation (Adapted from Demir and Pismek (2018))

3.5.1 Justification for using concurrent triangulation design

The concurrent triangulation design has a number of merits for the researcher. Firstly, it ensured the triangulation of procedures and data and further expanded and strengthened the study's conclusions. The design also ensured sufficient quality to achieve multiple validity legitimation (Johnson & Christensen, 2017; Onwuegbuzie & Johnson, 2006). The researcher relied on parallel or concurrent use of data-collection technique to tap different dimensions of the same phenomenon in the adoption of concurrent triangulation mixed methods (Sarantakos, 2000).

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Basically, the design helped the researcher to employ the inter- or between-method which entailed the use of both qualitative and quantitative procedures. The qualitative data collection procedures employed in this study were interviews and focus group discussion whereas a questionnaire was used to achieve the quantitative aspect. The results of the procedures were discussed concurrently. The triangulation of different procedures ensured that the flaws of one research procedure or method portrayed the strengths of another (Creswell, 2014). In this view, using the design increased the overall strength of the study more than using either of qualitative or quantitative. The study requirement for shorter data collection time when compared to other methods is an advantage to the researcher (Terrel, 2012).

The adoption of the triangulation design controls extraneous variables and tests the relationship between an independent and dependent variable which helped to reduce biases (Mertens & Hesse-Biber, 2013). Quantitative and qualitative data placed in the context of understanding the students' knowledge about and attitudes, as well as the perceptions of contraceptive use in colleges of education helped the researcher to explore the formulation of the research questions of the study. The design made intuitive sense which became a framework for the researcher to think about mixed methods research. It was an efficient design, in which both types of data were collected during one phase of the research at roughly the same time. Each type of data was collected and analysed separately and independently, using the techniques traditionally associated with the various data types.

The adopted design has a convergence model that brought together the two data sets with different sample sizes inherent in the design as the quantitative and qualitative data were collected for different purposes. This helped the researcher to have a basis

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for generalization and in-depth description of the study (Creswell, 2014). Furthermore, concurrent triangulation mixed methods design has inherent ability to merge data sets. This further aided the researcher to merge the two data sets during the interpretation stage by analysing them separately in a results section and then merging the two sets of results together during the interpretation or discussion of the findings.

Also, the use of this design helped the researcher in answering research questions that neither quantitative nor qualitative methods could adequately answer independently. Another justification for the adoption of this design was to gain a better understanding of connections or contradictions between qualitative and quantitative data. That provided opportunities for participants to have a strong voice and share their experiences across the research process. It facilitated different avenues of exploration that enriched the evidence and enabled questions to be answered more deeply. Concurrent triangulation mixed method is justified for this study because it enhanced greater scholarly interaction and enriched the experiences of researcher as different perspectives of understanding the phenomenon being studied on contraceptive use among students of colleges of education. In addition, the adopted design provided more information to the researcher than single method research giving strategic meaning on contraceptive use among students.

3.6 Sample and Sampling Technique

A sample is the proportion of population of interest for a research study, while sampling is the processes of selecting a section of a population (Gravetter & Forzano, 2018; Patten & Newhart, 2017).

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3.6.1 Sampling technique

The study employed various sampling techniques at different stages of the study. These included the census, random sampling as well as convenience sampling techniques. Six out of the nine colleges of education from Greater Accra and Eastern Region were selected. Census sampling technique (enumeration survey) was used to select the two colleges of education in the Greater Accra Region while simple random sampling was used to sample the four schools out of seven colleges from the Eastern Region.

Census sampling or enumeration survey is where all members of the population are studied. Conducting a census often results in enough respondents to have a high degree of statistical confidence in the survey results. Greater Accra has only two colleges of education within the region. Census sampling technique was used to select all the two colleges because it provided complete information on each college. Simple random sampling technique is the technique where every item in the population has an even chance and likelihood of being selected in the sample (Gravetter et al., 2018; Saunders et al., 2019).

A simple random sample is meant to be an unbiased representation of a group. In the process of selecting the colleges of education in the Eastern Region, the ‗fish bowl' method also known as lottery method was used. In this method, the names of the colleges were written on pieces of paper. These pieces of paper were folded and mixed into a bowl out of which four colleges were hand-picked at random out of the seven colleges.

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In the schools, the convenience sampling technique was used to select students for the qualitative datasets. The convenience sampling technique also known to be either grab, accidental, availability, or opportunity sampling involves the sample being drawn from that part of the population that is close at hand (Saunders et al., 2019). That is to say, the convenience sampling is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study.

For the quantitative data of the study, the sample was selected through a combination of stratified, proportional and simple random sampling techniques. In each of the selected Colleges of Education, the students were stratified or categorized into three levels or strata as Level 100, Level 200 and Level 300 students. Equal proportions of respondents were drawn from each level or year category of the students regardless of the differences in population size of each level (Field data, 2021). The stratified sampling technique was appropriate, because the population for the study was heterogeneous in nature. A stratified random sampling is a simple two-stage process.

First, characteristics which appear in the wider population which must also appear in the sample were identified; that is, the wider population was divided into homogeneous groups. It was a probability sampling technique in which each stratum was properly represented so that the sample drawn from it was proportionate to the stratum‘s share of the population. The approach satisfied the sampling technique whereby the population was sub-divided into homogenous groups called _strata‘, from which the samples are selected on a random basis (Nardi, 2018).

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In employing a proportionate stratified sampling method, students from each stratum were selected in proportion to the size of the stratum, since the total number of students for the various levels differed from one level to another. As such, categories with more students were apportioned higher numbers as compared to those with fewer number of students. The proportionate sampling technique was also used because it had the advantage of offering a high degree of representativeness. Figure 3.2 below indicates the stratified population and sample size for Accra College of Education regarding the quantitative data collection.

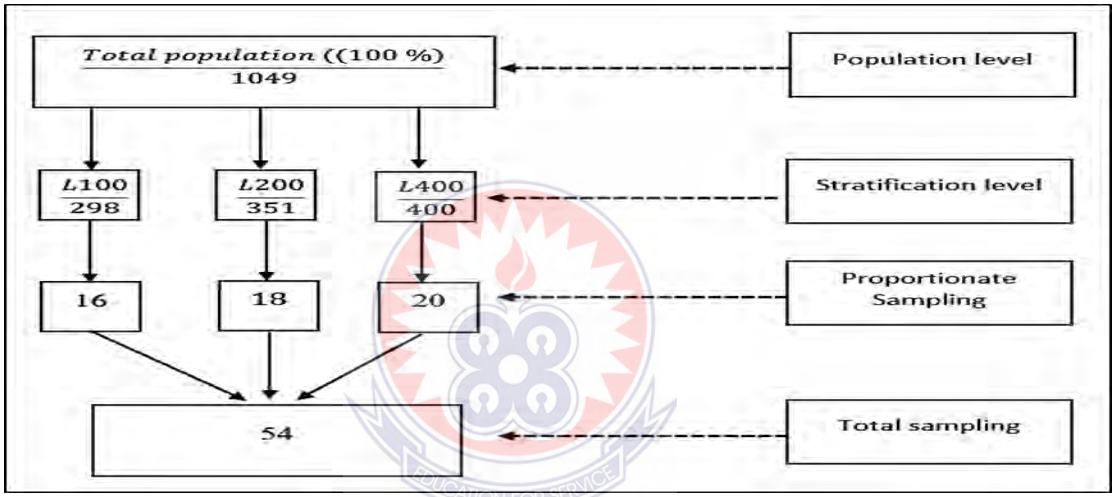

Figure 3.3: Schematic diagram of the stratified sampling design Accra college of Education

Thirdly, simple random sampling technique was used to finally select the students by gender or sex categories giving room for equal chances of selection without bias (Creswell & Cresswell, 2017; Nardi, 2018). Simple random sampling is where sample units are drawn directly from the population by some procedure. The lottery method was employed to ensure randomness by affording all participants an equal chance of being part of the study. In the lottery approach, pieces of paper which is equal to the total number of study units or the sampling frame of the students by class or level and sex categories was designed by the researcher. Here, ~~"y~~es" or ~~"n~~o" was written on

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pieces of paper and folded into a box and those who randomly handpicked the –YES" were selected to participate in the study. The exercise took place at one of the lecture halls after students had been taken through an orientation session.

In the process, the box containing the pieces of paper was turned over and over again to ensure that the pieces of paper were well mixed after each student had picked one and dropped it back to guarantee that each student had an equal opportunity of being selected. The researcher drew a sample size of 380 students from the six colleges of education for the quantitative data of the study using this approach.

In addition to the advantage of ensuring that, all students had equal chance of being included in the study, the random selection allowed for generalization of the results to the target population (Creswell, 2014). Also, the simple random sampling is meant to be an unbiased representation of a large group, since every member of the population has an equal chance of getting selected. The stratified and simple random sampling techniques ensured representativeness of the sample and it also eliminated selection bias.

3.6.2 Sample size

The study drew parallel relation, which meant that, the sample for quantitative and qualitative data sources were different but drawn from the same population (Onwuegbuzie & Leech, 2007). The total sample size involved in both the quantitative and qualitative approaches for the study was 434. Those who participated in the quantitative data collection were 380 whereas 36 and 18 students respectively took part in the focus group discussion and interviews totalling 54 for the qualitative data collection. The process undertaken to arrive at the samples have been described as follows:

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3.6.2.1 Sample Size for Quantitative Data

The sample for the quantitative data collection was determined using the Slovin's formula (1960) as cited in Dankyi et al., (2019). This formula was used because it has been tested and mostly used in surveys and case studies as well as giving the precision of estimation of the required size for the population.

Slovin's formula in determining the sample size: $n = \frac{N}{1 + N(e)^2}$

Where n is the sample size

N is population under study (7443)

e is the margin of error $(0.05)^{2=}$ 5%

$$n = \frac{7443}{1 + 7443\ (0.05)^2}$$

$$n = \frac{7443}{19.6075}$$

$$n = 379.59$$

Therefore, n = 380

According to the students' population of the six Colleges of Education which were in the following cities and towns; Accra, Ada, Aburi, Akropong, Koforidua and Abetifi had the total population of 7443. Figure 3.2 shows the statistics of the population distribution of colleges of education in Greater Accra and Eastern regions.

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Table 3.2: Statistics of the Population of Colleges of Education in Greater Accra and Eastern regions, Ghana

College of education	Enrolment			
	First year	Second Year	Third Year	Total
Accra (ACOE)	298	351	400	**1049**
Ada (ADACOE)	335	259	311	**905**
Presbyterian Women (PWC)	386	218	223	**827**
Presbyterian, Akropong (PCOE)	682	493	476	**1651**
Presbyterian, Abetifi (ABETICO)	500	400	379	**1279**
SDA (SDACOE)	863	472	397	**1732**
Total	**3064**	**2193**	**2186**	**7443**

It was observed that, the sample estimated using Slovin's formula formed 5.1% of the target population of 7443 (380/7443 x 100=5.1%). This is in line with Dornyei, (2007) who stated that between 1% and 10% sample of a study's population or more gives an adequate sampling fraction. The choice is also supported by Saunders et al. (2019) that a sample size of between 5 to 30 percent of the accessible population is appropriate for a study. Figure 3.3 shows that 5.1% (n=298) of the first year of ACOE; 5.1% (n=351) of the second year of ACOE and 5.1% (n=400) of the third year of ACOE. This was done for the rest of the colleges of education which gave the accessible number of the population.

Summary of proportionate distribution of the total sample of 380, by each college of education and year of enrolment is shown in Table 3.3.

Table 3.3: Sample Distribution of colleges of education respondents

College of education	First year	Second year	Third year	Total
ACOE	16	18	20	**54**
ADACOE	17	13	16	**46**
PWC	20	11	11	**42**
PCOE	35	25	24	**84**
ABETICO	26	20	19	**65**
SDACOE	45	24	20	**89**
Total	**159**	**111**	**110**	**380**

Source: Field data from the various colleges (2021)

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Table 3.3 indicates that within the colleges of education, first, second and the third years' students selected comprises of both males and females.

3.6.2.1 Sample Size for Qualitative Data

In determining the sample size for the interviews, a recommended sample size of 20-30 has been suggested by Johnson and Christensen (2017). The researcher conveniently recruited 54 of the participants and engaged them in the qualitative study. Those participating in the focused group discussion and interviews were 36 and 18 respectively as indicated earlier. The sample size selected for the study was appropriate since the researcher ensured they were representative of the population using tested sample formula and sampling procedure (Dankyi et al., 2019).

The 18 students selected for the interviews comprised three students from each college with one each from levels 100, 200 and 300. These students were selected by means of accidental which means that any student who were available and fell within the stated class or level (100, 200, and 300) was interviewed. These participants were not part of the respondents sampled using Slovin's theory. Again, six students were conveniently selected as participants for focus group discussion (FGD). Thus, two students from each level made up of a male and female were recruited from each of the selected colleges of education. Also, Osborn and Smith's (2008) assertion that in qualitative research it is intensive rather than extensive analysis that is key, thus a sample of six used in for the FGD was justified as it afforded the researcher to gather data to answer the research questions.

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3.7 Data Collection Instruments

Data collection instruments are the tools the researcher uses to gather information from the participants when in the field (Johnson and Christensen, 2017). This study relied on multiple data collection tools such as interview, focus group discussion (FGD) and administration of questionnaire for inquiry. Accordingly, semi-structured interview guide, FGD guide, and questionnaire were used as data collection tools. The official records of existing data on students and enrolment statistics were gathered as secondary data. Secondary data helps to give quality data information (Dankyi et al., 2019). The researcher used a guide for the focused group discussion as well as the interview to collect the qualitative data. A questionnaire was use for the quantitative data simultaneously. The data elicited were analysed concurrently.

3.8 Instrumentation

The instrumentation for the study was done in two stages or phases. The quantitative data collection involved the use of a structured questionnaire which mainly included close-ended items or statements which the students were to answer as the first stage (Kusi-Appiah, 2012). In the first stage, the researcher administered questionnaires with the support of two research assistants. The questionnaire was employed to elicit information from the sampled students in line with the research objectives. Most of the questions were on a Likert scale. Kusi-Appiah (2012) described the likert scale as series of register questions that respondents are to indicate their agreement or disagreement to statement. The scale was scored as follows: Strongly Disagree (SD)-1, Disagree (D)-2, Neutral (N)-3, Agree (A)-4, and Strongly Agree (SA)-5. The responses to section B, C, D and E are measured with five points unilinear scale such that one represents the disagreement to the statement whiles five represents the strongest agreement statement.

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The questionnaire was made in five sections number A, B, C, D, and E. The first section (A) of the questionnaire was on demographic characteristics and attributes. The demographic section sought information about participants‘ gender, age, level or class, college of the respondents, religion, and marital status. Section B gathered information on perceptions of contraceptive use. Section C gathered information on knowledge of contraceptive use, while Section D examines the attitudes of students towards contraceptive use. The last section E gathered information on the gender difference on use of contraceptive among college students. All the questions were closed-ended questions.

The benefits of using the questionnaire were that, it was a cost-effective survey method which helped this study to investigate large samples of the population across wide geographical areas. The questionnaire reduced bias that may occur in face-to-face interviews. When the respondents were completing the questionnaire, there were no verbal or visual clues from the surface of the paper that could influence the responses. Again, in using questionnaire, responses were gathered in a standardized manner. In effect, the responses were more objective than subjective as was the case of interview results.

However, the validity of instruments such as the questionnaires had been questioned (Dornyei, 2007). Dornyei (2007) provided a summary of the threats to validity using this instrument. One main issue has been the assertion that, people do not always provide true answers about themselves. Dornyei (2007) also held that some respondents may provide _a good guess‘ about what the desirable, acceptable or expected answer is, and some of them will provide this response even if it is not true. This was controlled by using varied methods of data collection for the study.

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The second stage was the qualitative data collection where Focus Group Discussion (FGD) was carried out. It was a structured process in which a group of people were selected to discuss the contraceptive use among college of Education students with the aim of obtaining information. The main purpose of using this technique was to elicit information on respondents‘ attitude, feelings, reactions and experiences as a group. Six students were sampled from each college and it comprises of two students from each level or class for the FGD. The use of six participants for the FGD in this study supports the recommendation by Willig (2013) who stated that a focus group must have at least 10 to 12 participants. It was emphasized that, this small number will ensure participant involvement throughout the discussion. This is in addition to accurate recording and transcription of data collected during the focus group discussion. A focus group discussion often stimulated respondents to talk and reveal facts and opinions that might not have been revealed otherwise. It also allowed the group to clarify attitudes or beliefs in words that were probably not easy to articulate. Data gathered from the focus group discussion was not different from that of individual interview but rather a confirmation.

This FGD strategy was used because of its usefulness in generating information on students' perceptions, knowledge and attitudes with regard to contraceptive use. In this study, the FGD gave opportunity to students to interact, discuss and evaluate their views on contraceptive use. Focus group discussion is undoubtedly valuable when in-depth information is needed about how people think about an issue.

The FGD sessions lasted for fifty (50) minutes. The researcher expressed her appreciation for their cooperation and participation at the end of interview and FGD sessions. With their permission the discussions were recorded with an audio recorder

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and a phone as a back-up. Ethical considerations were considered. The researcher was able to interview all the 18 participants and 36 students sampled for FGD.

A semi-structured interview guide was also used in this study. A semi-structured interview is a meeting in which the interviewer does not strictly follow a formalized list of questions. The guide contained a list of questions and covered specific topics which were administered in particular order as recommended by Cohen and Crabtree (2006). Following Tashakkori and Creswell (2007) framework, the interview protocol included instructions for the interviewer such as opening statements, transition statements and probes for further exploration of participants' responses, guiding research questions, and recording space for the interview data including participant comments and researcher reflections.

In using the semi-structured interviews, the researcher developed, adapted and generated the questions from the literature. The guide included students' knowledge on contraceptives, how they perceived contraceptives and their attitudes towards contraceptive use. It further included their questions to determine which contraceptives they had use and what influenced their choice of contraceptives.

In designing the semi-structured interview guide, the researcher considered the interviewee's subjective perspective of a phenomenon. The study a high level of flexibility during the data collection process by allowing the participants to tell their own story. The interviews generally started with some defined questioning plan to make interviewee comfortable and to familiarise themselves with the subject of the interview. This was more conversational style of interview that may see questions answered in an order natural to the flow of the conversation.

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The semi-structured interview schedule was useful for gathering information from students to help understand the quantitative data. This is because, it gave the researcher opportunity to seek clarification from the respondents. However, the openness of some of the questions in the interview schedule led to the gathering of massive volumes of qualitative data. The semi-interview guide was formulated with guidance and supervision from my supervisors. This was drafted with the research objectives, theoretical framework and relevant empirical reviews.

Semi-structured interview guide allowed respondents to discuss and raise issues that a researcher may not have considered. Furthermore, the semi-structured interviews were a bit more relaxed and helped the researcher to explore participants' responses by asking for clarification or additional information. Interviews in general helped in getting deeper understanding of responses. The interview was conducted on three students conveniently sampled from each of the levels, that is, one each from level 100, 200 and 300. These students were selected by means of accidental which means any student who were available and fell within the stated class or levels (100, 200, 300) was interviewed. The interviews were done on one-on-one basis. In conducting the interviews, adequate permission was sought from the sampled participants and rapport was established. A mutually agreed venue was selected for the interviews to elicit required information. Participants were assured of confidentiality and honesty to avert suspicion in order to have accurate responses and information. The researcher then explained the purpose of the study and each question to the respondents. The interviews were done at locations free from distractions and lasted 15 to 20 minutes on each participant. Based on the research objectives of the study, three themes were created to formulate the interview guide. The first theme focused on perception of

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contraceptive use, second on the attitude and the third focused on the knowledge of contraceptive use.

3.9 Validation of Instrument

The instrument was pre-tested to ensure validity and reliability of the study. Validity represents the degree on how a test results accurately reflected the social phenomena understudy (Creswell & Cresswell, 2017). In this study, the researcher established validity of the study by pretesting the instruments. Again, experts who have knowledge about the research were given the instrument to assess the items. Based on the feedback received from the experts, the questions were modified to suit the content of that study as proposed by Creswell and Cresswell (2017).

According to Sudaryono et al. (2019), validity is the accuracy of the measurement that shows how a specific test is suitable for a particular situation. When the results are accurate according to the researcher's situation, explanation and prediction, then the research is valid. Randomized designs were employed in this study which had significantly high internal and external validity. The internal validity is the ability to draw a causal link between treatment and the dependent variable of interest and how the research findings match with reality. It shows how the observed changes should be due to the experiment conducted without any external factor influence (Sudaryono et al., 2019).

The external validity is the ability to identify and generalize the study‘s outcomes to the population at large. The relationship between the study's situation and the situations outside the study is considered external validity (Onwuegbuzie & Johnson, 2006; Zhang & Wildemuth, 2009). The researcher assessed the internal validity to test the ability of the instruments to measure what they were projected to measure and to

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help detect any shortcomings that could prevent them from eliciting accurate responses.

In order to establish content validity, the study ensured that the items on the instrument showed all the aspects of the test or measurement were covered. In order to determine content-related validity the researcher was concerned with determining whether all areas or domains were appropriately covered within the assessment. For example, the size of the font, sufficiency of work space for learners, correct language usage and clarity of instructions were considered as important part of content validity (Fraenkel & Wallen, 2003). To ensure that the data collection instruments were valid, they were scrutinized by the research supervisors, expert in the field of sexual and reproductive health and other experts of the field of guidance and counselling before the pre-test was done. The comments made by the experts were considered and, in the process, the instruments that infringed on the confidentiality of the respondents were modified.

Face validity was also considered. This was about the validity of the appearance of a test or procedure of the test. Face validity considered how suitable the content of the test seemed to be on the surface. It is similar to content validity but face validity was a more informal and subjective assessment. The researcher ensured that the instruments appeared what they were to cover. This was done by giving the instruments to colleague students in the Department of Counselling Psychology of the University of Education, Winneba, peers and other colleagues from different universities for scrutiny. Following their comments, the questions were reviewed. All the necessary corrections in the items were made and declared valid by the supervisors before the administration was done.

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Factor analysis was done to establish construct validity of the questionnaire. This showed whether the test measured the correct construct regarding ability or attribute, trait or skill. The main purpose of a researcher by exploring construct validity is to determine whether the inferences made about the results of the assessment were meaningful and served the purpose of the assessment. As suggested by Gerber and Price (2018), factor analysis was a procedure used to determine the extent to which shared variance existed between variables or items within the item pool for a developing measure .

Factor analysis was part of the test-level approach and seen in classical theory that assumed each item in the test is of equal difficulty and thus test items were essentially parallel instruments (Gerber & Price, 2018). Factor analysis is a method for condensing a large number of variables into a smaller number of factors. Factor analysis was performed using the pre-tested data to explore the factors that measure the variables such as sexual behaviour (which comprised of health and risky sexual behaviour) knowledge, attitude and perception of contraceptive use.

After collecting the data from the respondents, they were coded and entered into SPSS version 26. Prior to the analysis, z-scores which were standardized scores for all the 62 variables were computed to examine whether there were univariate outliers. The z-score provided information about the relative position between some observed scores and the mean. It was a way of expressing scores in terms of a distribution and how many standard deviations in a given score was away from the mean (Ofori & Dampson, 2011).

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The 62 items were subjected to test of significance for skewness on sexual behaviour, attitude, knowledge and perception on contraceptive use. This was done using the skewness of the distribution on each of the variables. Each distribution was judged using the z-statistic of +/- 3.29. According to Ofori and Dampson (2011) distribution with the resulting z-statistic score more than +/- 3.29 after dividing its skewness value by its standard error (SE) of skewness indicates that the distribution was abnormally skewed. The assumption for using the criterion of +/-3.29 was that the distribution was to be normally distributed. The 62 items formulated were later reduced to 41 for the main constructs for assessing the perceptions, knowledge and attitudes among the college students, which were used for the study after factor analysis. The factor analysis tables and confirmatory factor analysis diagram are shown in Appendix B.

The results of the pilot test were also subjected to Cronbach's alpha reliability analysis using Statistical Package for Social Sciences (SPSS) version 26. The pilot study offered the researcher an opportunity to identify some of the problems that occurred in the main study. This informed necessary corrections in the questionnaire before the main study.

3.10 Pre-testing of the Instruments

Pre-test was done at the Mount Mary College of Education, Somanya because they had similar characteristics with the rest of the colleges sampled for the study because they have similar organizational structure, academic staff and students. They are geographically located at the region selected for the study, Eastern. The questionnaire was administered to 40 students who were selected from the three levels using the lottery method of simple random technique. The questionnaire was distributed with the assistance from a staff member of the college from the Guidance and Counselling

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Department who had earlier been taken through training in questionnaire administration. The expected copies of 40 questionnaire administered were all retrieved. With the qualitative study, 8 students were selected, 6 for focus group discussion and 2 interviewed. The interview was recorded with audio-tape.

3.11 Reliability of the Instruments

Reliability is the degree to which research studies produce the same results when repeated by different researchers or on different context (Silverman, 2014). The essential of reliability is replicability of research findings. Reliability can be estimated in one of the following four ways such as internal consistency, split-half reliability, test-retest reliability and inter-rater reliability (Creswell, 2014). In this study, the researcher used a Cronbach alpha reliability coefficient to measure the internal consistency of the questionnaire. Cronbach's alpha is a measure used to assess the reliability or internal consistency of a set of scale or test items. Internal consistency reliability was used. This refers to the extent to which all the subparts of the instruments measured the identified attributes.

Cronbach's alpha is a test reliability technique that required only a single test administration of several Likert type items that were summed to make a composite score to obtain a unique estimate of the reliability for a given test (Leech et al., 2005). For Cronbach Alpha to work, the scale variables must be multidimensional and the alpha test must consist of more than one dimension, in which case each concept will be given its own alpha rate (Tavakol & Dennick, 2011). The questionnaire had 0.79 as Cronbach alpha reliability coefficient. This value agreed with that of other researchers such as Dörnyei and Taguchi (2010) who indicated that the acceptable value of alpha ranges from 0.70 to 0.95.

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3.12 Trustworthiness and Authenticity of Qualitative Data

Trustworthiness refers to the degree of confidence in data, interpretations and methods used to ensure the quality of a study (Connelly, 2016). For quantitative studies, it is referred to as validity and reliability. Validity is the appropriate measurement to the objectives of the study while reliability is the consistency of the data collected in this context (Dankyi et al., 2019). However, in qualitative studies, validity is to determine whether the research truly measure the quality of the research results (Connelly, 2016). This helps to assess the accuracy of the findings of the study as trustworthiness was used. Since qualitative research does not use instruments with established metrics about validity and reliability, it is pertinent to address how qualitative researchers establish that the research study‘s findings are credible, transferable, confirmable, and dependable (Adler, 2022; Connelly, 2016). This was in agreement with Leedy and Ormrod (2010) who stated that even experienced researchers conduct test runs of newly designed questionnaires to make sure that, the questions were clear and effectively solicit the desired information.

3.12.1 Credibility

Credibility is the first aspect or criterion that must be established in qualitative data for trustworthiness. Credibility helps the researcher to clearly link the findings of the research study to reality in order to demonstrate the truth of the findings. Credibility also has the most techniques available to establish it, compared to the other three aspects of trustworthiness. Here, focus was on the two most important techniques to ensure credibility, and these include triangulation and member checking mostly found in qualitative research.

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In this study, triangulation was employed to ensure the credibility of the data. This is a technique in which the data, interpretations and conclusions are shared with the participants. It allowed participants to clarify what their intentions were, correct errors and provide additional information if necessary. In this approach, the researcher used more than one method of data collection where the data were gathered from different sources, that is, both interviews and FGD in order to cross-check or establish the veracity of the findings. Also, different points of view from participants from different times and locations were also sought. This strategy enabled the researcher to overcome the shortcomings such as limited information and biases that could be identified with only one method in data collection.

Aside the triangulation used in the study, peer examination was employed by the researcher to establish credibility of the study. A colleague, who holds a PhD in Guidance and Counselling was asked to review and make comments on the initial findings in respect to the raw data. The comments made assured the researcher that the findings were the true reflections of what participants expressed. Credibility was also ensured by means of member-checking in which the participants were asked to corroborate findings. Member checking is a technique which helps increase validity of qualitative findings, through reducing threats to researcher bias, respondent bias and reactivity (Willig, 2013). Checks relating to the accuracy of the data was done at the end of the data collection dialogues where informants and those who participated in the interviews were asked to read through a written summary or transcripts of dialogues to correct any interpretations or to check that their words match what they actually intended. Another member checking that was employed to check the accuracy of the data was question-answer validity approach. Question-answer validity is when the researcher paraphrases interviewees or participants‘ comments to confirm

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or clarify the intended meaning. This technique enables the researcher to ascertain whether a participant has interpreted the researcher‘s question as it was intended. This offered the researcher the opportunity to gains participants‘ intentionality while also maintaining context of the data as the participants get an immediate opportunity to correct errors of fact and challenge that perceived to be wrong interpretation and also provides the participant the opportunity to volunteer additional information.

3.12.2 Transferability

Transferability in qualitative research findings is similar to generalizability of findings in quantitative research. Transferability describes the process of applying the results of research in one situation to other similar situations. This was done by the researcher presenting reports that provided sufficient details to other readers for assessment. In the current study, the findings could be applied to students from other Colleges of Education in other regions of Ghana or elsewhere with similar contexts. Thus, the present study may be similar to other studies carried out in Ghana or elsewhere, but the researcher never thought of generalizing findings of the study except to provide additional information on the issues in order to deepen readers‘ understanding and knowledge of the subject under investigation involving study subjects in the study setting to replicate the data.

3.12.3 Dependability

Dependability of qualitative research findings is equivalent to reliability of findings in quantitative studies. This was ensured through auditing the research process, documenting all the data generated and assessing the method of data analysis. An audit inquiry was conducted in establishing dependability in the study. An audit inquiry involves having a researcher outside of the data collection and data analysis

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examine the processes of data collection, data analysis, and the results of the research study. This was done to confirm the accuracy of the findings and to ensure the findings are supported by the data collected (Dankyi et al., 2019). My supervisors assisted in the establishment of dependability of the data collected and analysis.

Also, the researcher achieved this by ensuring that questions asked during the interview and FGD sessions were straight forward and clear which in turn generated the needed data. Again, to draw valid conclusions, the researcher used triangulation, safeguarded against personal biases and subjectivity during data collection, peer examination and unbiased explanation of the data collected. These research process and findings helped in achieving this objective.

3.12.4 Confirmability

Confirmability is the objectivity of data and the extent to which the study findings were shaped by the respondents' motivations and perspective. There is a clear link or relationship between the data and the findings. The researchers show how they made their findings through detailed descriptions and the use of quotes. In order to ensure confirmability in this study, audit trails approach was used. Audit trails are an in-depth approach to illustrating that the findings are based on the participants' narratives and involve describing how you collected and analysed the data in a transparent manner. In the study, two supervisors examined the data processes and assessed the analytical technique to ensure whether they were used accordingly. In order to review the transcribed data, generated themes and conclusions, colleague researchers were made to determine if corresponded to the data generated.

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In order to confirm what the participants said, copies of the transcribed interviews were given to them to scrutinize the data. As a result, the researcher made sure that, the outcome of the present study was the objective view of the respondents as evidenced in the data collected. The researcher as well made sure that, the meanings of the study were not influenced by her particular preferences, viewpoints, knowledge and experiences.

3.12.5 Reflexivity

Reflexivity means that the researcher is conscious of the biases, values, and experiences that she brings to a qualitative research study. This entails two parts; the first part is the researcher‘s own experiences with the phenomenon being explored and the second part is how is the researcher‘s interpretation of the phenomenon shaped by these past experiences. The subjective nature of qualitative research is recognized by establishing how one‘s identity (gender identity, gender presentation, class, education, sexual orientation, race, ethnicity, age, language, culture) and contextual (immigration status, etc.) positionality contribute to the construction of the research process and findings. This positionality can be explored through the use of reflexivity (Swaminathan & Mulvihill, 2018).

Roulston (2010) defined reflexivity in research as ―the researcher‘s ability to be able to self-consciously refer to herself in relation to the production of knowledge about research topics. Therefore, reflexivity aids the researcher in exploring their positionality and understand how it constructs knowledge. Reflexivity goes beyond ―reflection‖ in that it explores our relationship with others that is, research participants and site (Roulston, 2010).

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Creswell and Poth (2018) added that the positionality of the researcher would influence all aspects of the research study. In order to check for reflexivity, the researchers convey method section, introduction or in other places in a study, their background which involves work experiences, cultural experiences, history, how it informs their interpretation of the information in a study and what they have to gain from the study. Therefore, the researchers engaged in reflexivity through jotting notes about participants‘ comments and researcher‘s thoughts during the interview, memoing after an interview, developing and continually editing the researcher‘s subjectivity statement. These processes embedded in the data analysis and also add to the meaning made of the data, participants, documents, and observations that inform the research question. Engaging in reflexivity throughout the research process allows for understanding meaning within power structures and ensuring trustworthiness in the study.

3.13 Data Collection Process

Data collection is the process of gathering and analysing accurate insights for research using standard validated techniques (Creswell, 2009). Before data collection, seeking permission at the site of the research is very important (Hanson et al., 2005; Tashakkori & Creswel, 2007). The researcher obtained an introductory letter from the Head of Department of Counselling Psychology, University of Education, Winneba stating the aims and purpose of the study and the need for the participants to give their consent and co-operation.

The researcher sent copies of the permission letter to the principals of their colleges of education, where the research was carried out in order to have access to their students. Three visits were made to the colleges for data collection. The initial visits to the six

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colleges of education were used to seek permission from the principals of the colleges and familiarise with the schools and to gather additional information concerning the research.

During the second visit, twelve field assistants, two from each college, one from guidance and counselling department who was familiar with research site and one SRC member who was a representative and familiar with the students were recruited and one from guidance and counselling department. They were trained for easier administration of the Questionnaires. The topic for the study, objectives, the process of getting the respondents and ethical consideration were highlighted during the training.

The third visit was to administer the Questionnaires. The students were assembled at the college assembly hall. The various sub-headings of the Questionnaires were discussed with the respondents to make sure all items in the questionnaire were duly filled. This exercise was done in two stages, that is, the distribution and collection of the questionnaire at the same time. The questionnaires were administered by the researcher with the assistance from two research assistants (one from guidance and counselling department and the other was the SRC representative) who were already trained in the administration of the questionnaire. The sampled students were given 20 to 30 minutes to complete their questionnaires in their respective colleges. The second stage was on the retrieving of the questionnaires. The researcher administered 380 questionnaires and was able to retrieve all the 380 questionnaires. This resulted in 100 percent retrieval rate. The questionnaires were collected immediately after completion as the students leave the assembly hall.

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The qualitative study was collected through in-depth interviews with semi structured interview guide. This involved participants who were sampled for focus group discussion and interview. The focus group discussion started with the consent from the participants. A serene environment was chosen for the session. The researcher explained the purpose, expected duration and how the information will be kept confidential and use of audio recorder to the participants. The interview was done on one-on-one bases concurrently during the distribution of the questionnaire with help of the trained research assistants. The interview session took 15 to 20 minutes whiles the focus group discussion took 50 minutes. This approach allowed the participants to express their in-depth views on contraceptives. The participant‘s responses were summarised and verified with participants immediately after the interview for them to feel comfortable with information shared.

3.14 Data Analysis

The data collected from qualitative and quantitative sources were processed to answer the research questions. The processes involved in the qualitative and quantitative data analysis are described below:

3.14.1 Quantitative data analysis

The quantitative data were tallied in order to get the number of respondents who answered each set of items. They were cleaned, verified and entered into the Statistical Package for Social Sciences (SPSS) version 26 software. Descriptive statistics in the form of frequency count, percentage, means and their standard deviations were generated for each research question raised. The data were presented in tables. The mean score of each item was computed. This was used to examine the views of the respondents regarding the perception, attitude, knowledge and

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contraceptive use. The data were analysed using both inferential and descriptive statistical tools. Unilinear scale was used to measure closed-ended items in which conclusion and recommendation were drawn. Results and discussion were shown based on the research question and hypotheses. The hypotheses were tested using the analysis of variance (one- way ANOVA) and the independent sample t-test at a significance level of $p \leq .05$. ANOVA is used to examine the differences in the mean values of the dependent variable associated with the effect of independent variables (Christensen, 2001; Faizi & Alvi, 2023). Hypotheses one and two were tested using the analysis of variance whereas the independent student t test was employed in testing for the third hypothesis. The t- test was used to compare the means of two groups, that is, to determine whether a process or treatment actually has an effect on the population of interest, or whether two groups are different from one another.

The background characteristics were analysed using frequency count and percentages. The first, second and third specific objectives were also analysed using mean and standard deviation to examine the views of respondents with regards to knowledge, attitude and perception of contraceptive use among colleges of education students. These mean and standard deviation were used because they represent the average value in a data set which measure the spread of values in a sample.

3.14.2 Qualitative Data Analysis

The qualitative data were analysed thematically. Responses from respondents were categorized into themes. In analysing the qualitative data, the researcher familiarized herself with the data after which she transcribed, organized, coded, analysed and finally, wrote out the report. Axial coding system was used in the analysis. Each participant‘s responses were classified according to the research objectives. The

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responses were reported verbatim. Sections of text units including words, phrases, sentences or paragraphs which were significant were extracted after examining the raw qualitative data transcripts and assigned different codes and sub-codes.

After transcribing the data to make it easy to retrieve, it was organized into sections based on the objectives. A list of all the topics was made by the researcher and a cluster of similar topics were put together. Major topics, unique topics and leftovers were identified. The researcher looked for new categories and codes for them. After the categorization and coding of data into themes, the researcher analysed and interpreted the themes to find answers to the research questions. The data was analysed using all the research objectives. The qualitative data results which comprised of data from the interviews and focus group discussion were presented to support the quantitative data. As where necessary, verbatim quotations from participants were added to buttress or support issues as they emerged.

3.15 Positionality

Research is shaped by both researcher and participants. As such, the identities of both researcher and participants have the potential to impact the research process. Our own biases shape the research process, serving as checkpoints along the way. Through recognition of our biases, we presume to gain insights into how we might approach a research setting, members of particular groups, and how we might seek to engage with participants (Bourke, 2014). This study was researched on contraceptive use among students of colleges of education in Eastern and Greater Accra regions: implications for counselling practice. I am a public health nurse, midwife and a general nurse working at the 37 Military hospital. Prior to conducting the research study upon which this reflective work is based, I have worked in family planning

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centre, Obstetric and Gynaecological department for several years, all in 37 Military Hospital. My experiences working with diverse patients and clients on their sexual and reproductive health within the hospital led to my interest in conducting this research to learn more about the sexual behaviour, knowledge, attitude and perception on contraceptive use from students‘ perspectives without imposing my frame of understanding on them. In reflection and delving more deeply on my experiences as sexual and reproductive health nurse in the Military Hospital. a review of positionality is warranted.

Just as the participants‘ experiences are imbedded in social-cultural contexts, so too are those of the researcher. It is reasonable to expect my beliefs, life experiences, historical context, cultural background (gender, socioeconomic status, educational background) are important variables that may factor into my positionality and the research process. During the study, in order to prevent possible influence on the research process, I guarded myself against my background, experiences and biases. Both quantitative and qualitative data collected concurrently may have possible influence of bias on positionality and subjectivity but with triangulation of the two enhances the quality and strength of the study. Subjectivity is the expression of voice that results in the reporting of research findings. Through this voice, the researcher leaves her own signature on the project, resulting from using the self as the research instrument and her subjectivity. This seeks to provide an understanding of a problem through the experiences of individuals and the particular details of their lived experiences. The sample size for the study was appropriate for the study. It is assumed that participant will participate in the focus group discussion fully and answer the interview questions sincerely and as such do not have other reasons in being part of the study. The students who participated in this study were neither my clients nor

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patients in the hospital and I have never provided my services to any of them and may never attend to them in the provision of services as a sexual and reproductive health nurse.

3.16 Ethical Considerations

Johnson and Christensen (2017) define ethics as principles and guidelines that help us uphold the things we value. Johnson and Christensen further add that deception in research is morally wrong and should under no circumstances be used because it involves lying to research participants. Leedy and Ormrod (2010) state that if the researcher was working with human beings or non-human, there must be an obtained permission. In this case, ethical approval or clearance was sought from the Department of Psychology and Education, Winneba. Again, permission was sought from the principals of the sampled colleges of education before going out to the students to collect data. For the purposes of informed consent, the objectives of the study were made known to potential participants.

All participants and respondents were told that taking part was voluntary and maximum co-operation from participant were ensured. During the process, participants were informed that they had the liberty to withdraw from the study whenever they wished. There were no physical, social or psychological risks. Again, the interviews were conducted at conducive and quiet places to reduce the rate of fatigue and discomfort that participants experience.

To protect the confidentiality and anonymity of all sources of information, names of participants and any other identifiable information of the respondents were concealed. This was to protect the participants from harm, prevent professional risks or punitive action. For the sake of anonymity, participants were given pseudonyms

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such as PCE 1 for participant 1, PCE 2 for interview participant 2 etc to protect their identity of respondents. This was also done assuming they revealed discreet information that could possibly pose a professional risk. Also, all data collected were analysed, stored personally and discussed only with the study supervisors. As a way of preventing plagiarism, works of people including scholars and researchers which were used to support aspects of the study were duly acknowledged in-text and listed in the reference section. The true findings of the research were used for academic purpose only in line with the UEW research protocol.

3.17 Summary of Chapter Three

This chapter presented detailed information regarding the methodology used in this study. The chapter discussed the research approach, design, study area, population, sample and sampling procedure, instrumentation of the study. The study adopted concurrent triangulation mixed method design. Statistical tools used in the analysis were also highlighted. A detailed descriptions data collection and analytical procedures as well as ensuring trustworthiness were given. Finally, ethical considerations were outlined.

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CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter describes and presents the data analysis and results of the study. The main purpose of the study was to explore the perception, knowledge and attitude of students of colleges of education in the Greater Accra and Eastern regions of Ghana regarding contraceptive use and to provide a theoretical explanation about these issues to inform counselling practices. The results are presented based on the research questions of the study. The first part of the research questions deals with results regarding the background characteristics of respondents and participants. The second part reports the results of the research questions while the third part tests the hypotheses. The instruments used for the study were questionnaire, focus group interview and semi-structured interview guide for the participants and respondents.

Based on the objectives of the study, the following research questions guided the study:

1. What is the perception of college of education students in the Greater Accra and Eastern regions of Ghana about contraceptives use?
2. What is the attitude of college of education students in the Greater Accra and Eastern regions of Ghana towards the use of contraceptives?
3. What is the knowledge level of college of education students on available contraceptive use?
4. How do gender differences influence contraceptive use among college of education students?

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The following hypotheses were formulated and tested at 0.05 level of significance.

Hypothesis one

H_0: There is no statistically significant difference between college of education students of Greater Accra and Eastern regions in terms of knowledge of contraceptive use.

H_1: There is statistically significant difference between college of education students of Greater Accra and Eastern regions in terms of knowledge of contraceptive use.

Hypothesis Two

H_0: There is no statistically significant difference in contraceptive use between students in Greater Accra and Eastern regions.

H_1: There is a difference in contraceptive use between students from the colleges of education in the Greater Accra and Eastern regions.

Hypothesis Three

H_0: There will be no statistically significant gender differences in contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana.

H_1: There will be statistically significant gender differences in contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana.

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Table 4.1: Demographic characteristics of respondents in the study

This section presents the demographic data of the respondents used in the study. The section discussed the gender, age, classes, colleges of the respondents and marital status of the students. Findings from the demographic characteristics are presented in the table below:

Variables	Frequency(n)	Percentages (%)
Gender		
Male	145	38.2
Female	235	61.8
Level		
Year one	159	41.8
Year two	111	29.2
Year third	110	28.9
Age group		
Less than 20 years	275	72.4
20-24 years	56	14.7
25-30 years	48	12.1
30-35 years	1	0.3
Marrital status		
Married	47	12.4
Single	333	87.6
College of education		
Accra	54	14.2
Ada	46	12.1
Akropong	84	22.1
Koforidua	89	23.4
Abetifi	65	17.1
Aburi	42	11.1

Source: Field Data, 2021

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4.1 Background Characteristics of Respondents

Results in the table show that more female respondents (n=235, 61.8%) than male respondents (n=145, 38.2%) took part in the study. The results on the gender variable of the sample indicate that data was collected from both genders with the majority (61.8%) being females while (38.2%) were males. Also, it become evident that 159, (41.8%) were in year one, 111, (29.2%) were in year two and 110, (28.9%) were in year three.

The findings further indicated that most of the respondents were less than 20 years old representing 72.4% with the remaining 14.7% being 20 and above. The majority of the respondents, 333 (87.6%) were found to be single. The results also revealed that 89 (23.4%) were students from Koforidua College of Education followed by 84 (22.1%) students from Akropong, Sixty- five (65) representing 17.1% were students from Abetifi, 65 (17.1%) were students from Accra, 54 (14.2%) were students from Ada, and 42 (12.1%) were from Aburi.

4.2 Treatment of Research Questions

This section of the chapter concerns with analysis of participants‘ responses on perception, attitude and knowledge as well as gender influence on contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana. It involves data gathered through questionnaire, interview schedule and focus group discussion.

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Research Question one: What is the perception of college of education students in the Greater Accra and Eastern regions of Ghana about contraceptives use?

Research question one sought to explore the perception of students about the use of contraceptives. This was measured (assessed) on a five-point scale and analysed by the use of Means and Standard Deviation.

Table 4.2: Perception of students on contraceptives use (n= 380)

Perception of students	Mean	Std. Dev.
Causes infertility	3.52	1.63
Negative effect due to prolonged use	3.21	1.75
Prevent pregnancy and sexually transmitted infection	3.15	1.74
Bad feeling of contraceptive information from parents	3.13	1.8
Unavailability of contraceptive	3.12	1.77
It is foreign concept	3.07	1.79
It is embarrassing to obtain contraceptives.	3.00	1.80
Painful to use contraceptives	2.96	1.82
Contraceptives are Expensive	2.82	1.71
Hindrance to daily activities	2.80	1.76
Conflict with Beliefs	2.79	1.76
Contraceptives are not suitable	2.71	1.78
Causes bad reaction from partner	2.66	1.69
Contraceptive use is a woman‘s responsibility	2.66	1.65
Scary to use contraceptive	2.52	1.71
Risks in using contraceptives	2.39	1.68
Users of contraceptives are bad	2.34	1.41

Source: Field Data, 2021

From Table 4.2, in relation to the respondents‘ perception about pain in the use of contraceptives, a mean of 2.96 and std dev. 1.82 were obtained. The means were obtained for statements such as infertility (X=3.22, SD=1.75). In addition, there is a bad feeling to receive contraceptive information from parents (X=3.13, SD=1.80), the

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use of contraceptives causes scare in individual (X=3.15, SD=1.75) respondents' perception of contraceptive revealed that the contraceptives can prevent pregnancy and sexually transmitted infection (X=3.52, SD=1.64).

Likewise, a mean of 3.12, SD=1.77 and mean=3.07, SD=1.76 was obtained for the perception of contraceptives as it was difficult to obtain access to contraceptives and contraceptive use is a foreign concept. Finally, various means were obtained for statements such as the contraceptive obtaining is embarrassing (X=3.00, SD=1.80).

The quantitative results seem to be consistent with the qualitative data in several respects. In respect to perception of participants toward the use of contraceptives, four themes were generated. These are as follows: contraceptives prevent pregnancy and sexually transmitted infection, danger and infertility, cost and availability and scary.

4.2.1 Perception of students on the use of contraceptive

4.2.1.1 Contraceptives prevent pregnancy and sexually transmitted infection.

Most of the participants had a perception that contraceptives are devices or substances used to prevent pregnancy. According to them, people use contraceptives with the aim of avoiding unwanted pregnancy. For example, the following were statements made by some participants in support of this view:

> *Contraceptives help me to prevent pregnancy and contracting disease like HIV and sexually transmitted infection whenever I am with my partner. It is easy to use. It has never given me any problem. Ever since I started to have sex with my partner, we have always been using condom to protect ourselves from pregnancy and HIV. I can't stop using condom as long as I am in school...(PCE6)*

Another participant also said:

> *I didn't want to impregnate anyone before I finish my schooling and also to protect myself against sexually transmitted infection. My parent will be disappointed with me if I impregnate any girl whiles am still in school". I also don't have money to take care of a baby, that is why I always use*

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contraceptives and also encourage my partner to use it whenever we are having sex...(PCE 3)

Furthermore, PCE 5 opined that:

It is very important because it help you to space out your children If you are married but for we the youth, it prevents unwanted pregnancy and STIs so that we can complete our education. I don't want to become pregnant now at this time, that is why I am using contraceptives.

The above statements made by the participants indicate the direction of their perception. To them, contraceptives are used to prevent unwanted pregnancies and sexually transmitted infections. This is what the quantitative data emphasised which had a high mean score of 3.52.

4.2.1.2 Dangerous and Infertility

Another theme that emerged as a strong perception of participants was that contraceptives can be dangerous and can cause infertility. According to the participants, contraceptives have negative effects and can lead to barrenness. For instance, the following were statements made by some participants to support this view:

Some of the contraceptives may be dangerous to you as some of them causes weight gain and infertility. Some of them, they have to cut you before they can do it for you. I am not comfortable about it. I am afraid it may even cause death…PCE 4.

Another participant also recounted:

I have never liked contraceptives because the description shows that it is a dangerous drug that can cause harm to people. Some people take and becomes bloated that is fat. Some also take it and are unable to give birth. I have even heard that some them, they have to open your abdomen which is very dangerous….PCE 1

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From the perspective of the quantitative data this seems to confirm the qualitative results in Table 4.2 with the mean score of 3.22. The study revealed that the above statements made by the participants generally show their perception that contraceptive use can be dangerous as it can lead to infertility.

4.2.1.3 Cost and availability

Contraceptives are available in hospitals, clinics, health facilities and pharmacy shops within the communities. It is also affordable and even free for people in some of the health facilities. Some of the participants expressed their views on where to get the contraceptives and its affordability. They added that they perceive contraceptives to be expensive; hence, they cannot afford. Some of the participants did not know where to get contraceptives. This is evidenced in the following quotations:

> *My first time, I didn't use anything because I was thinking that it will not be suitable for me and didn't know where to get it and didn't have enough money thinking that it may be expensive. But talking to some friends, they showed me how some of them work and where to get some to buy. It was cheap because I was able to purchase some…PCE 4*

Another participant made this known:

> *I have been wondering where to get contraceptives to buy so that I will not see by anyone. It is something that can cause an embarrassment to me. Sometimes, I do think that I can't buy it because it may be expensive…PCE 1*

The study revealed that the views of the respondents in quantitative results were also corroborated by that of the participants in the qualitative results.

4.2.1.4 Scary

There are various types of contraceptives such as implant, intrauterine which are available in the health facilities. Some of the participants said they were scared of using such contraceptives. They added that the IUCD can migrate into other part of the body, which is rare.

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A participant reported that:

> *I have not tried any of the method before because I think it is scary. When I heard of the some of the types of contraceptive like intra uterine device and implant, I got scared because I was wondering if it gets stuck or vanish in your abdomen…. PCE 2*

4.2.1.5 Discomfort

The views of the participants held about how they feel on purchasing contraceptives were also explored through the interview. Some of the participants indicated that they would feel embarrassed when buying contraceptives in a pharmacy. These participants indicated that people would perceive you to be a bad person when they see you buying contraceptives. For example, a female participant indicated that:

> *"I was shy to go to a pharmacy to buy some of the contraceptives because I thought I will be embarrassed. When people hear you mentioned contraceptive or see you at the pharmacy buying condom, they perceive you to be a bad person…PCE 1*

Another participant also said that:

> *"It depends on your status; what people think about you because the attitude of the providers makes very uncomfortable for me to use contraceptive. I feel embarrassed when they show negative attitude…PCE 5*

4.2.2 Attitude of students towards the use of contraceptives

The second research question of the study was to examine the attitude of college of education students in the Greater Accra and Eastern regions of Ghana towards the use of contraceptives. This was measured by means of students' attitude towards contraceptive use regarding their feelings towards use, availability and service provision, attitude of the health care providers and affordability of the contraceptive. Mean and standard deviation are presented in the table below:

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Table 4.3: Attitude of students towards contraceptives use

Attitude of students	Mean	Std. Dev.
Cognitive (Thought)		
Having sexual intercourse without using contraceptives causes pregnancy	2.88	1.85
It is unimportant to use contraceptives before and after marriage	2.34	1.9
It is good to use contraceptive always for sexual intercourse	2.26	1.69
Affective (Feeling)		
Side effects of contraceptive method are dangerous	3.19	1.84
Difficult to reach orgasm by using a contraceptive	3.03	1.78
Behavioural (Action)		
Using contraceptives boosts your confidence	3.56	1.71
Receiving contraceptive information at the clinic is embarrassing	2.56	1.85

Source: Field Data, 2021

Table 4.3 represents the attitude of college of education students in the Greater Accra and Eastern regions of Ghana towards the use of contraceptives which are categorised into cognitive (thought), affective (feeling) and behavioural (action). The findings show the means score that were obtained for statements such as respondents will have side effects of contraceptive method (X=3.19, SD=1.84) and not reaching orgasm by using contraceptive (X=3.03, SD =1.78). In the same way, various means were obtained for statements such as, having confidence to use contraceptives (X=3.56., SD=1.71).

With regard to the attitude of participants on the use of contraceptives, the participants stated that they consider using a type of contraceptive based on its quality and convenience. Consequently, its availability is also considered when choosing a type of contraceptive. The participants also stated that they consider the side effects of the contraceptive before using it.

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Analysing the interview data, a number of themes emerged to buttress the quantitative findings as regards students' attitude towards the use of contraceptives. The quantitative data was inconsistent with the qualitative data in some aspects as discussed below:

4.2.2.1 Side effects

To most of the participants, the use of contraceptives brings about dangerous side effects that can affect them negatively. The following comments made by PCE 1, PCE 6 and PCE 5 are presented below:

> *–For me, I think contraceptive is not good; sometimes it has side effects. I am afraid of the way it can affect you negatively…PCE 1*
>
> *"For me I think the side effects can cause problems in your body'' PCE 2.*
>
> *"For the first time, I was seeing contraceptives as demonic because of the side effects. I did not understand why such a thing should cause inconveniences in your body. Something you take in that can cause a problem for you now and in future is demonic…PCE 3*

4.2.2.2 Confidence

Two respondents reported the reason for having confidence in using contraceptive. In expressing their views.

PCE 2 indicated that:

> *"I don't want to get pregnant that is why I always use contraceptives. I can boldly say that contraceptive can protect me from unwanted pregnancy. I have a believe in it.*

Another participant also added that:

> *"I consider my education because, if I have an affair without knowing I will be getting pregnant, so for sake of my schooling I know contraceptive can protect me against pregnancy" …PCE 5.*

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4.2.2.3 Feeling less satisfaction

It also emerged from the qualitative analysis that some participants claim they do not reach orgasm when using some of the contraceptives. They do not achieve satisfaction when using some of the contraceptives. The following were advanced by participants:

PCE 3 opined that:

> *"My first time I wasn't happy about it because it was a bit delaying for me especially using the condom. It almost got stuck in my partner as I didn't come out her early.*

Another participant commented that:

> *"Some people may be happy using it but not me because I don't reach orgasm when I use condom. It is just not the same. Using rubber in having sex is better you don't do it at all" it makes you feel very uncomfortable…PCE 6.*

PCE 2 also added that:

> *I feel a little uncomfortable using contraceptive because with the tablet, I have to take it every day. Sometimes, you are not sure whether it's really protecting from pregnancy that alone does not let me enjoy sex.*

Some participants have different attitude towards contraceptive use. PCE 4 and PCE 3 had these to say:

> *For me I have a feeling that it is the best thing because it protects me from pregnancy and STI. My partner and I have agreed to use condom till we finish our course as students. And even when we get married, we will use it space our child birth.*

> *"It is not anything alarming because it is something that I can use protect my future. I know that I can use contraceptive and stop using it at any time and any moment I want.*

Overall, it can be clearly seen from both quantitative and qualitative that despite some positive attitudes of students towards contraceptive use, the majority of students still showed negative attitudes towards contraceptive usage.

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4.2.3 Knowledge of students on contraceptive use

The third research question of the study was to assess the knowledge level of college of education students in the Greater Accra and Eastern regions of Ghana on contraceptive use. This was measured by means of students' knowledge towards contraceptive use regarding their feelings towards use, availability, service provision, attitude of the health care providers and affordability of the contraceptive. Mean and standard deviation are presented in the table below:

Table 4.4: Respondents' knowledge level of contraceptives use

Knowledge of students	Mean	Std. Dev.
Condoms and Pills	3.42	1.83
Pills leading to no weight gain	3.31	1.88
Using contraceptives to prevent pregnancy	3.11	1.87
Condoms to prevent sexually transmitted diseases	2.81	1.88
Injectables and IUDS for long term	2.72	1.87
Emergency oral contraceptives for 72 hours after unprotected sex	2.71	1.88
No 100% protection from sexually transmitted infections	2.50	1.78

Source: Field Data, 2021

Table 4.4 reports the knowledge level of college of education students on contraceptive use. The respondents obtained a mean of 3.42 and SD=1.83 on condoms and pills available for their effectiveness.

In the same way, various means were obtained for knowledge-based statements such as, contraceptive is any method or procedure used to prevent pregnancy (X=3.11, SD=1.87), while a mean of 3.31 (SD=1.88) was obtained for the knowledge on whether contraceptives can lead to weight gain.

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The study found that the participants knew what contraceptive was as well as its use. According to the participants, contraceptives are used purposely to prevent pregnancy and sexually transmitted infections (STIs). The participants also indicated that there were different types of contraceptives that can be used. The contraceptives listed included male and female condoms, pills, injectables, implant and IUCD. Some of the participants also named specific contraceptives like Postinor 2, Lydia contraceptive, Secure and Levon 2. Furthermore, the participants stated that they knew pharmacies to be the place to go if one needs a contraceptive. The following quotes further support the findings:

4.2.3.1 Benefits of contraceptives

There are declarations that support the students' claims that using contraceptive brings about several benefits to the uterus, some of which are to prevent pregnancy and diseases such as uterine cancer. These are some of the comments the participants stated:

> *"Contraceptive are drugs we use to prevent unwanted pregnancy…PCE 5*

Another participant indicated that:

> *Contraceptive are medication or substance that taken in make your menses less painful and also reduce uterus cancer…PCE 4*

4.2.3.2 Varieties of contraceptives

Another theme that emerged was varieties of contraceptives. There are many different types of contraceptives. The most appropriate method of contraceptives depends on an individual's overall health, age, frequency of sexual activity, number of sexual partners, desire to have children in the future and family history of certain diseases. Comments from students interviewed indicated that participants had knowledge of

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existence of a variety of contraceptives. The following statements were given to support their views:

PCE 6 stated that:

> *I know about Lydia contraceptive, condoms, Postinor 2 and IUCD as some contraceptive that can be used in preventing unwanted pregnancies or STIs.*

4.2.3.3 Dual protection

Dual protection means taking steps to protect oneself against unintended pregnancy, as well as sexually transmitted infections including HIV. This can be achieved either by using condoms (male and female), or by using condoms or pre-exposure prophylaxis plus another method of contraception, such as an intrauterine device (IUD), implants, the pills or injectables. The data from the interview shows that some of the participants had knowledge about some of the contraceptives as evidenced in the following statements:

PCE 2 opined that:

> *"Contraceptive is used purposely to prevent sexually transmitted infection (STIs) and pregnancy."*

Additional information were obtained from students as regard to Knowledge, Attitude and Perception, the following themes were generated during the focus group discussion. These themes collaborate with the information they have already given during the interview and questionnaire. These were beliefs and socio-cultural hinderance, bad people use contraceptives and woman's responsibility.

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4.2.3.4 Beliefs and Socio-cultural hindrances

Two people reported that beliefs and cultural hinderance have influence on contraceptives use on students. In expressing their opinion with regard to this, PCE 1 indicated that:

> *"I think for someone to use a condom or contraceptives depends on your belief.*

Another participant also added that:

> *"For the first time, I was seeing contraceptives as demonic because of the side effects. I did not understand why such a thing should cause inconveniences in your body. Something you take in that can cause a problem for you now and in future is demonic…PCE 5*

4.2.3.4 Bad people use contraceptives

The findings from the focus group discussion further showed that bad people use contraceptive. The following comments were made by some of the participants:

> *~~"~~Initially I had a misconception about it that it's the prostitutes who use contraceptives, but now education has taught us that it's not for the prostitutes but it's for individuals who want to plan their life to prevent unwanted pregnancy*"…*PCE 2*

Another participant also said that:

> *~~"~~I think it is bad to use contraceptives and bad people use them no matter the reason*"…PCE 4

4.2.3.5 Woman's responsibility

For women, there are three key considerations to make when deciding whether or not to take a contraceptive drug. These are the risks of the drug itself, the risk of getting pregnant and the risks of going through with said pregnancy. Conversely, healthy men do not theoretically suffer any risks if they get someone pregnant.

PCE 5 commented that:

> *"I think it is the woman or lady who has to protect herself because she may suffer from unplanned pregnancy and its complications during pregnancy and childbirth and even after birth. The impact of getting sexually transmitted infection is more*

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complex in women than men because the infection may travel to the uterus, tubes and ovaries as well as the vagina and the cervix."

4.2.4 Gender influence on Contraceptive use among College of Education Students

The fourth research question of the study was to determine the gender difference in contraceptive use among college of education students. In assessing gender influence on contraceptive use, the study revealed that based on the experiences encountered by women, more males use contraceptives than females despite the risk of unintended pregnancy affecting them. The following quotes from PCE 4, PCE 5 and PCE 2 support the findings:

4.2.4.1 Shyness

It also emerged that some of the female participants felt uncomfortable and shy discussing issues concerning contraceptives as well as obtaining it. The following were advanced by female participants:

> *I feel shy to talk and buy contraceptive because even at home or among my friends, it is not a topic for discussion..PCE4*

4.2.4.2 Stigma

According to the female participants, they are sometimes stigmatised for being seen with contraceptives. In expressing their views,

PCE 2 opined that:

> *I know that people see ladies differently when you are seen with condom or any of the contraceptives, that is why I do not use contraceptive.*

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4.2.4.3 Health outcome

To most of the male participants, the use of contraceptives serves as merits to them because of several reasons. These are some of the reasons for using contraceptives:

> *I don't want to get any sexually disease and impregnate anyone to become a young father that is why I am always using condoms in having sex…PCE 5*

PCE 1 indicated that:

> *I want to finish my education, look for work before getting married. So, I will always use condom whenever having sex to prevent pregnancy and STI.*

Testing of Hypotheses

Hypothesis One

H_0: There is no statistically significant difference between college of education students of Greater Accra and Eastern region in terms of knowledge of contraceptive use.

H_1: There is statistically significant difference between college of education students of Greater Accra and Eastern region in terms of knowledge of contraceptive use.

To test for this hypothesis, the one-way ANOVA was conducted to examine the data. Table 4.2.5 shows an *F-statistic (*1,378) of 8.109 and $p = .005$. The results of the study thus showed a significance value of 0.005, which is less than the 0.05 significance level. This implies that the null hypothesis which stated that, there was no statistically significant difference in terms of knowledge on contraceptive use among Greater Accra and Eastern regions colleges of education students was rejected. Therefore, the study showed a statistical difference in terms of knowledge on contraceptive use among Greater Accra and Easter regions colleges of education students (Table 4.5)

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Table 4.5: ANOVA Results on the difference in terms of knowledge on contraceptive use among Greater Accra and Eastern regions colleges of education students

Indicator	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	200.213	1	200.213	8.109	0.005
Within Groups	9332.87	378	24.69		
Total	**9533.08**	**379**			
Mean Comparison between groups Eastern (20.0167) Greater Accra (21.5214)	1.5047 (0.005) *				

Source: Field Data, 2021

Hypothesis Two

H_0: There is no statistically significant difference in contraceptive use between students of Colleges of Education in Greater Accra and Eastern regions.

H_1: There is a difference in contraceptive use between students from the colleges of education in the Greater Accra and Eastern regions.

The analysis of variance to determine the difference in contraceptive use between students in Greater Accra and Eastern region revealed a p-value of 0.134 which is greater than 0.05. This means that we failed to reject the null hypothesis which stated that there was no significant difference in contraceptive use among Colleges of Education students from the Greater Accra and Eastern regions of Ghana.

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Table 4.6: ANOVA Results on difference in contraceptive use among Greater Accra and Eastern Region

Indicator	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0.02	1	0.02	0.132	0.134
Within Groups	126.9	508	0.249		
Total	126.933	509			
Mean Comparison of means by group					
Eastern					
Greater Accra	0.07976 (0.134)				

Df-Degree of freedom

Hypothesis Three

$H_{0:}$ There is no statistically significant gender differences in contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana.

$H_{1:}$ There is a statistically significant gender differences in contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana.

The Table 4.6 shows the mean uses of contraceptives among males and females to be 0.6 and 0.4851 respectively. To determine whether the difference between the means were statistically significant or by chance, the independent student t test was employed. The test showed that there was a significant difference between contraceptive use among males and females given a p-value of 0.029 which is lower than 0.05. Thus, the null hypothesis which stated that there was no statistically significant gender difference in contraceptive use among college of education students in the Greater Accra and Eastern regions of Ghana was rejected.

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Table 4.7: Gender Difference in contraceptive Use among college of education students in the Greater Accra and Eastern regions of Ghana

Variable	**Gender**	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**					
Use of contraceptive	Male	145	0.600	0.4916	0.04082					
	Female	235	0.4851	0.50084	0.03267					
Results from t test	*Levene's Test for Equality of Variances*			t-test for Equality of Means						
	Variance	***F***	***Sig.***	**T**	**df**	**Sig. (2-tailed)**	**Mean Df**	**Std. Error Df**	**95% Confidence Interval of the Df**	
									Lower	**Upper**
Use contraceptives	*Equal variances assumed*	*8.977*	*0.003*	2.188	378	0.029	0.115	0.053	0.012	0.218
	Equal variances not assumed			2.197	309.415	0.029	0.115	0.052	0.012	0.218

Df-Degree of Freedom

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CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter discusses the findings of the study conducted among college of education students in the Greater Accra and Eastern regions of Ghana. A mixed methods approach involving both quantitative and qualitative analysis of data was used in conducting the study. The discussion includes a summary of the characteristics of the respondents, interpretations of the data with previous findings, theory and specific responses given by the respondents and participants in accordance with specific objectives of the study.

5.1 Perception of students on the use of contraceptive

The findings that emerged from the first specific objective revealed that, students had varied perceptions about contraceptive use. It also captured themes like contraceptives prevent pregnancy and sexually transmitted diseases; dangerous and causes infertility; cost and availability; scary and embarrassment in obtaining contraceptives.

The findings from the quantitative survey were supported by the responses from the interviews and focus group discussions. For some of the participants, their perceptions to contraceptive use have changed over time. This may be due to the availability of information to address especially negative perceptions. For instance, some of the participants indicated from the focus group discussion that, they initially thought of contraceptives to be bad and a woman‘s responsibility but that has changed over time. Although several of the students claimed that contraceptives prevent unintended pregnancies and sexually transmitted diseases. The finding of contraceptives prevent unintended pregnancies and sexually transmitted diseases are in consistent with a

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study conducted among students in the Ledzokuku-Krowor District in Accra, Ghana by Akuffo (2018).

In a similar study, Appiah-Agyekum and Kayi (2013) found that contraceptive use was important to students and concluded that they would always use condom in their sexual encounter. The practice of using contraceptive among some of the students shows their readiness to prevent unintended pregnancies and STIs.

Most of the participants (62.2%) demonstrated their understanding of contraceptive use as any method or procedure used to prevent pregnancy. This is in line with the study by Agyemang et al. (2019) showed a higher proportion, in that, 95% of participants in their study agreed that contraceptives prevent pregnancy.

Asiedu et al. (2020) in their study corroborate this assertion that contraceptives prevent pregnancy, and participants were able to mention at least a method. The findings is also consistent with Adefalu et al. (2018) who found a similar proportion of 63.4% of respondents who perceived contraceptives as methods of preventing pregnancies. This finding is similar to that of the college students in Ghana. Additionally, the findings of Habitu et al (2018) are closely in line with this study as most of the undergraduate students said contraceptives prevent pregnancy.

Contrary to these findings, the World Health Organization stated that contraceptives do not provide complete protection from sexually transmitted diseases. Generally, WHO provides that, with the exception of condoms, none of the other contraceptives such as pills, sterilization and withdrawal methods offer protection from sexually transmitted diseases (WHO, 2020c). This shows that, merely using contraceptives will not prevent sexually transmitted diseases. Thus, the recommended practice is to use

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condoms with other contraceptive methods with the goal of preventing sexually transmitted diseases (WHO, 2016). Again, the CDC has shown that the correct and consistent use of condom reduces and eliminates the risk of sexually transmitted diseases including HIV/AIDS (CDC, 2021). The assertion of the CDC supports the findings that, using contraceptives did not guarantee total protection from contracting sexually transmitted diseases. The study's findings that, contraceptives do not provide complete protection from sexually transmitted diseases have also been reported by the USAID (USAID, 2013, 2015).

The USAID (2013) asserts that, none of the barrier contraceptives like condoms provided a hundred percent guarantee of protection from contracting sexually transmitted diseases. However, using condoms effectively and consistently reduces significantly the risk of transmission. The estimation according to USAID, (2015) is that, male and female condoms may offer up to 90% and 94% of protection respectively when used correctly in every sexual intercourse. UNFPA also estimates that, consistent use of condoms reduces the risk of HIV, about 80% (UNFPA, 2005).

These findings are also in agreement with the submission of Holmes et al. (2004). Their study showed that condoms are not hundred percent effective in preventing sexually transmitted disease although they substantially reduce the spread of sexually transmitted diseases. Although the finding that contraceptive use does not guarantee total or complete protection against sexually transmitted diseases are congruent with earlier studies, the continuous encouragement and sensitization of consistent use of contraceptives especially condoms among young people is crucial for preventing unintended pregnancy and reducing the risk of sexually transmitted diseases. Wiyeh et al. (2020) has also demonstrated the effective role of male and female condom in

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preventing sexually transmitted diseases including HIV and AIDS, underscoring the importance of promoting their use.

An additional finding from the study was that, condom use prevents sexually transmitted diseases. More than half of the expected score was observed from the current study among the college students. With the identification of condom as an important method to prevent sexually transmitted diseases in addition to unintended pregnancies, students should be encouraged to be positive about condom use. During the interview with students and FGD, participants supported this claim. Several opinions shared reflected the knowledge of using contraceptives to prevent sexually transmitted diseases and unplanned pregnancies.

This finding is inconsistent with that of El-Duah et al. (2021), where among a group of students in the Sunyani West District in Ghana, an average of about four-fifth of the students identified the use of condoms as a preventive method for sexually transmitted diseases. Ananga et al. (2017) also confirmed that in Hohoe Municipality in Ghana, the majority of respondents knew the use of female condoms to prevent sexually transmitted diseases during sexual intercourse. The finding further agrees with Inthavong et al. (2020) and Chavalala et al. (2019) who observed that, about one-third of respondents were able to identify condom as part of the effective methods in preventing the spread of sexually transmitted diseases.

Another interesting perception of students observed in this study was that students perceive contraceptive use as something that leads to infertility or barrenness. This means that obviously they perceive contraceptives use to be dangerous and can cause infertility. The use of contraceptives especially hormonal ones made it difficult for women to conceive. This may largely be due to the changes in menstrual patterns that

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may come with the hormonal contraceptives such as injectable or implants. They perceived contraceptives use to be dangerous and can cause infertility. The findings of this study confirm the report by Schrumpf et al. (2020), who stated that contraceptive use results in infertility is a perception in northern Ghana.

This is also consistent with the findings of Agyemang et al. (2019). In their study at Atwima Kwanwoma District in the Ashanti Region, they confirmed that where most young people in a study identified infertility to be caused by the use of contraceptives, thereby making it dangerous.

In other areas outside Ghana, the perception that contraceptive use can cause harm leading to infertility has also been documented. In Guinea, Dioubaté et al. (2021) found that, respondents perceived the use of contraceptives to result in infertility or barrenness, which could be harmful later in life. This perception and misconception, therefore, has the tendency of discouraging the use of contraceptives among students. This was indicated by Agbeno et al. (2021) who further confirms that, some of the contraceptives are rather effective methods in managing infertility.

Based on this, it could be argued that most participants felt bad and uncomfortable to receive contraceptive information from parents as well as from the clinics. Students also perceived that, obtaining contraceptives was an embarrassment. This may be explained from the socio-cultural context of the Ghanaian society where discussion of sexual and reproductive health issues is limited. It thus makes the participants find it difficult to open up to their parents or health workers regarding their contraceptive use.

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Furthermore, there is inadequate contraceptive information and education as well as little or no attempts to address the sensationalism that accompanies contraceptive use and sexual issues among students. The end result could be observed from the state of shyness and inadequacy among students when it concerned their use of contraceptives. One student remarked that their perceived shyness and anticipation of embarrassment prevented them from using contraceptives, and this exposes them to unprotected sexual intercourse.

However, the study's finding supports the claim of Komey (2016) that, students had difficulty receiving parental consent on sexual activeness. This made it challenging for them to open up their sexual life to their parents or guardians. The difficulty may also be influenced by shyness and discomfort to discuss their sexual and reproductive life and activities at home as found by Agyemang et al. (2019). The findings from the study highlights the difficulty participants have in discussing contraceptives with parents and health facilities as well as their shyness to get them even when they wanted to use them. Notwithstanding these perceived challenges, some parents have been willing to provide the opportunity for discussing contraceptives with their children, and this could be said about health facilities where trained health staff may be available to support the students with adequate information on contraceptives (Akuffo, 2018). This difficulty requires collaborative attention of parents and health care workers in guiding these young people to make informed decisions and choices regarding their reproductive health (Der et al., 2021).

This is also consistent with the findings of Nsubuga et al. (2016), who found that it was difficult for people to discuss sexual matters with partners, health workers and others. Sometimes, the attitude of health workers such as being harsh and insulting

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towards students and young adults acts as barriers to the adequate utilization of reproductive health services including contraceptive use (Komey, 2016). This finding should further strengthen efforts to motivate students to seek health advice and counsel on reproductive health issues.

Again, it became evident that some of the students perceived contraceptive methods unavailable. The findings are incongruent with the findings of Mohammed et al. (2019) who found that contraceptives could easily be bought from a nearby shop. Appiah-Agyekum and Kayi (2013) indicated that, there have been improvements in physical access of students to contraceptives as they can be purchased at pharmacies and supermarkets. Although evidence exist to support the fact that availability is positively correlated with usage, efforts should be invested in reducing barriers to the ultimate use of contraceptives (Chandra-Mouli & Akwara, 2020; Ross & Hardee, 2013).

Closely related to this finding was that some students stated that, contraceptives are expensive. The different perspectives from which students view the cost of with contraceptive use may be due to the contraceptive options available on the market for patronage by the students. For instance, contraceptives may come in different brands and under different trade names but have same function and uses. The differences in the brands are therefore be associated with different price tags which may make some of the contraceptives expensive compared to others. Agyemang et al. (2019) and Appiah-Agyekum and Kayi (2013) found that students in Ghana thought contraceptives were pricey. This finding regarding the cost of contraceptive is in congruent with the assertion by Manortey et al. (2016).

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The students should therefore, be encouraged to overcome the difficulties in accessing the commodities by opting for affordable contraceptives which can achieve the goals of preventing unplanned pregnancies and sexually transmitted infections. There have been invested efforts in Ghana including those by the Ghana Health Service to make contraceptives affordable over the years although several costly alternatives to the subsidized options may be available on the market. Educating students and young people about affordable options, particularly when contraceptives are purchased from health facilities, can affect usage and dispel this myth (Agyemang et al., 2019).

5.2 Attitude of Students towards Contraceptive Use

The findings of the second objective revealed various attitude of students toward contraceptive use. These were based on their attitude towards side effects, confidence and feeling dissatisfaction.

The findings revealed that prolonged contraceptive use has negative or adverse effects. Like any other drug, contraceptives, especially hormonal types may have tolerable side effects. Some of the side effects of contraceptives include weight gain, mood swings, and changes in menstrual cycle among others. In many instances, it becomes a challenge when the side effects are highly placed above the benefits. Another adverse effect is the delay in pregnancy caused by the use of the hormonal contraceptives. The duration of return to fertility has been estimated by different studies but generally may be up to six or twelve months (Farrow et al., 2002; Girum & Wasie, 2018; Yland et al., 2020). The issue of delayed fertility following hormonal contraceptives has been established by Yland et al. (2020).

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However, these findings were contrast to the findings reported by Girum and Wasie (2018) that, contraceptive use does not influence fertility negatively irrespective of the duration of use and contraceptive type. Similarly, Farrow et al. (2002) in support of this finding indicated that women were not disadvantaged in becoming pregnant after contraceptive use, and that women conceived in less than six months after stopping contraceptive use whiles others conceived within 6-12 months and after 12 months usage respectively. Although these findings may disprove the perceived cause of infertility from contraceptive use, it supports the fact that, some tolerable levels of delays in returning to fertility may follow contraceptive use. This shows that, there may be variations in return to fertility among contraceptive users and the presence of some delays in the return to fertility.

This necessitates the promotion of accurate information through education and counselling, in order to assist students in making informed decisions concerning contraceptive use. According to Yidana et al. (2015) such negative opinion on contraceptive effects held by students have hindered the patronage and utilization among young people in Ghana.

The findings are also consistent with that of Agyemang et al. (2019) who identified similar opinion, of the side effect of contraceptive use among a group of young females in the Ashanti Region of Ghana. Similarly, in a study conducted in rural Ghana, Schrumpf et al. (2020) observed that, concerns of side effects of contraceptives was a major challenge and sometimes these concerns were held higher than the potential benefits from the use of contraceptives. The opinion of students that contraceptive use can lead to side effects like weight gain confirm the finding reported by Mayeda et al. (2014) who agreed that contraceptive causes weight gain as

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a side effect. This is in line with the Health Belief Model which has a perceive barriers like side effect which posit as one of it domains. Students will definitely choose to use contraceptives due to health benefits they derive from using it. This is also in line with the student shy away from contraceptive in view of the perceive threat it will impose on them.

Also, Abrah (2021) identified weight gain, headache, and high blood pressure as challenges that contraceptive users experience . These side effects thus, may more likely be a long-term effect of using contraceptives as has been found. The attitude variable, with the highest mean score from the study suggest that, the students were not confident to use contraceptives because they did not find it very important to use contraceptives until they had decided to marry. For most of the students, contraceptives are important interventions only for the married and not for the unmarried. These findings are in line with Akuffo (2018) in which the author concluded that respondents had the attitude of not using any contraceptive but upheld abstinence until marriage.

Similarly, the findings corroborate that of Agbeno et al. (2021) who confirmed in their study that contraceptive use was deferred to a future time although they knew contraceptives to be very useful. Nsubuga et al. (2016) in their study also found that it was wrong to use contraceptives among students because they were unmarried but had positive attitude to the future use of contraceptives when they got married (Tran & Vo, 2018)

On the contrary, these findings seem to negate with the qualitative study where respondents reported that they do not want to get pregnant as reasons why they always use contraceptives. They believed that contraceptives could protect them from

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unwanted pregnancy and sexually transmitted infection. Another study done by Mohammed et al. (2019) also identified more than half of the participants in the study using emergency contraceptives among unmarried students.

It must be noted that these students' attitude towards contraceptive use seems to suggest that they feel dissatisfaction in using contraceptives. This is evident in some of their statements that the use of contraceptives, notably the condoms were less pleasurable and difficult in reaching orgasm; using a condom was not the same as when engage in sexual intercourse without it.

Khan et al. (2004) and Komey (2016) found among some students that, unprotected sex was more pleasurable than using contraceptives, notably the condom which made it difficult for one to reach orgasm during sexual intercourse. Khan et al. (2004) however, concluded that this attitude should be socially constructed, which requires exploring the social dimensions of sexuality to enhance the use of contraceptives, especially the condom.

5.3 Knowledge of Contraceptive Use

The findings of the third objective revealed that a cluster of knowledge students have about contraceptive use. From the study, their knowledge about the fact that contraceptive could delay pregnancy till they are ready to marry and also prevent any diseases during sexual intimacy. This findings is consistent with the findings reported by Agyemang et al. (2019) which revealed that a higher proportion of participants in their study believed that contraceptives are methods for preventing pregnancy. This is also in line with Asiedu et al. (2020) who found knowledge on contraceptives to be higher in their study. In their study as all the respondents knew contraceptives as a method of preventing pregnancy and were able to mention at least a method. It was

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also recorded that effective use of emergency contraceptives taken at most 72 hours after unprotected sexual intercourse is a benefit for contraceptive users. This finding agrees with Mohammed et al. (2019) where respondents knew the correct timing of emergency contraceptives. It further confirms the findings from the qualitative study by Komey (2016) where some of the student respondents stated emergency contraceptive could be taken within 72 hours after sex to prevent pregnancy.

Generally, the results show positive knowledge on the varieties of contraceptive use. These were implants and IUDs used on a long-term basis for effectiveness where such contraceptives are very effective in preventing pregnancy over an extended period. The majority of the students knew condoms, injectables and pills were used for short term basis. The findings in the study is consistent with Social Learning Theory in which students acquire knowledge through models such as observations, learning, imitation and modelling. The availability of accurate information on contraceptives environmental factors that influence the students' behavior to use contraceptive or not.

This finding agrees with Grindlay et al. (2018) where the majority of participants identified injectables (93.4%) and IUD (59.7%) as contraceptive methods. Dual protection means taking steps to protect against unintended pregnancy, as well as sexually transmitted infections including HIV. This can be achieved either by using condoms (male and female), or with using condoms or pre-exposure prophylaxis plus another method of contraception, such as an intrauterine device (IUD), implants, the pills or injectables.

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The findings contradicted the findings reported by Taapopi and Van der Westhuizen (2019) which revealed that most of the students were not aware of some types of contraceptives such as implants, intra uterine device, bilateral tubal ligation and vasectomy. The findings of Podolskyi et al. (2018) also showed less knowledge of participants on IUDs compared to the findings of this study.

Also, emergency contraceptive which is a contraceptive method has three forms of methods which include hormonal like oral levonorgestrel and ulipristal or an intra-uterine contraceptive device (Opoku & Kwawununu, 2011; Wu et al., 2020). The use of most hormonal emergency contraceptives such as levonorgestrel has been estimated to be highly effective within 72 hours after unprotected sex as found to be reported by college students in this study (Koyama et al., 2013; Shurie et al., 2018; Yeboah et al., 2022). Some emergency contraceptives such as ulipristal or the IUDs can however, be effective even up to 120 hours after unprotected sex (Matyanga & Dzingirai, 2018).

The findings of the study indicated that most of the students were largely unaware of the use of IUD for effective emergency contraceptive since effectiveness was within 72 hours after unprotected sexual intercourse. This finding was in consistent with Wu et al. (2020), who indicated the use of intra uterine device as emergency contraceptive were unknown to students. Although knowledge on the use of emergency contraceptive was identified, further education on the comprehensive use could be provided to enhance knowledge of young people and service providers on intra uterine contraceptive device as emergency contraceptive (Wu et al., 2020; Yeboah et al., 2022).

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The findings on knowledge of contraceptive use further revealed that, some students viewed contraceptive use to be against their religious and socio-cultural beliefs. In Ghana, religion and other belief systems, values and norms are important considerations in making choices. Some students upheld the values that, engaging in sexual intercourse before marriage was wrong and were not engaging in sexually activity.

The findings were in consistent with the submission of Abrah (2021) who posits that contraceptive use conflicted with the beliefs of some of their study participants. The results that emerged from Beson et al. (2018), also revealed that the religious beliefs of respondents were significant in influencing the use of contraceptives.

The findings of Akuffo (2018) also indicated that the practice of abstinence from sex until marriage was socio-culturally upheld and this made contraceptive use unacceptable due to their beliefs and values. Similarly, the findings are congruent with that of Zimmerman et al. (2021) and Odwe et al. (2021) who both found that there is statistically negative relationship between contraceptive use and religious and socio-cultural beliefs and values.

Furthermore, the results which emerged from the knowledge of contraceptive use revealed that those using contraceptives were ‗bad'. This perception could also be socially construed as societal beliefs, norms and values influence this position. In most instances, the perception may hold that, using contraceptives contributes to casual or indiscriminate sexual intercourse. Others may interpret the use of contraceptives as an opportunity to have additional sexual partners, making the true importance of contraceptive use in preventing unplanned pregnancies and sexually transmitted infections. The findings of this study corroborate that of Agyemang et al.

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(2019), which indicated that those who used contraceptives were bad. It further confirms the finding of Mohammed et al. (2019) who posit that contraceptive use among students was associated with promiscuity. This finding also supports Manortey et al. (2016) where about 42% of respondents indicated that contraceptive use promotes promiscuity.

The findings were also in line with the findings by Appiah-Agyekum and Kayi (2013), Adongo et al. (2014) and Frimpong et al. (2021) who concluded in their studies that unmarried users of contraceptive are bad people, branding them as prostitutes. The finding is also in consistent with the findings reported by Grindlay et al. (2018) who found that more than half of male respondents acknowledge that, contraceptive use made women promiscuous. This stance of male perception is heightened when women take up contraceptives without their partners' consent.

The study also revealed that contraceptive use is a woman's responsibility. The social constructs of females being the most affected with unintended pregnancies and sexually transmitted infections may contribute to this perception. This finding is consistent with Bhatt et al. (2021) where women were considered responsible for contraceptives. However, the finding does not confirm the findings of Abdulai et al. (2020) who in their study found that married women could not use contraceptives themselves , except with approval from their husbands. Women are known to be crucial users of contraceptives, bearing a disproportionate share of the responsibility for preventing pregnancy (Kimport, 2018).

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5.4 Gender Difference in Contraceptive use among Students from Colleges of Education

The last specific objective of the study was to determine the gender difference in contraceptive use among colleges of education students. The results showed statistically significant difference on contraceptive use among males and females. This is indicative that, among student respondents from the colleges of education, a significant relationship existed between contraceptive use where male students had higher use rate compared to females. This finding support that of Grindlay et al. (2018), who established that significant relationship existed in the use of contraceptives among males and females ($p<0.001$). The findings of Martinez and Abma (2020) also confirms that this study that contraceptive use among males at first sex was higher than the recorded levels among females. The findings of the study are also in line with Theory of Planned Behaviour which deals with subjective norms such as perceived believes about contraceptive use and perceived behaviour control like prevention of sexually transmitted infections. Male students intentionally use contraceptive more to prevent to prevent both pregnancy and sexually transmitted infection.

This findings is however, contrary to that of Oyedele (2021) and Khamishon et al. (2019) which concluded that contraceptive use among female respondents was rather higher than among their male counterparts. The influencing factors to contraceptive use can have general as well as contextual underpinnings which can guide intervention programmes to improve performance. Therefore, Kriel et al. (2019), added that comprehensive gender roles in relation to contraceptive uptake among students can be an advantage to overcome gender related barriers and challenges to contraceptive use

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Furthermore, Kabagenyi and Jennings (2014), Huber-Krum and Norris (2020) and Thummalachetty et al. (2017). In their study found the orientation on contraceptive decision making as a shared responsibility in influencing the uptake. The importance of improving the contraceptive use will also include efforts and interventions to address gender-based misconceptions such as fear of side effects.

5.5 Summary of Chapter Five

The chapter presented the discussion of the results which address the specific objectives of the study. The discussion revealed that college students have varied perception towards contraceptive use. The discussion revealed several literatures to support and confirm these findings. Also, college of education students demonstrated have attitude towards the contraceptive use. Lastly, knowledge and gender have influence on contraceptive use by college of education students.

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CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

Chapter six presents the summary of the findings of the study. The chapter further provides a conclusion to the research questions and identify the limitations of the study. It also includes suggested recommendations based on the findings of the study. The implications of the findings for the guidance and counselling, contributions of the study to knowledge and suggestions for further research have also been presented.

6.1 Summary of the Study

Students are among young age group which is a period in human development characterized by significant physiological, psychological and social changes. This stage of life is also characterized with the development of sexual behaviour which defines a person‘s sexual life. Sexual behaviour is any activity between two persons that induces sexual arousal. Sexual behaviour may be categorised as healthy or risky. Risky sexual behaviour is a phenomenon which is common among students and this include unprotected intercourse, sexual promiscuity and sex involving unwanted pregnancy. They are less likely to take the necessary precautions to prevent unwanted pregnancy or sexually transmitted diseases. Therefore, the need for contraceptive use remains the option as an intervention.

In summary, the purpose of the study was to explore the perception, knowledge and attitude of students of colleges of education in Greater Accra and Eastern regions of Ghana regarding contraceptive use and to provide theoretical explanation about these issues to inform counselling practices.

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A mixed method involving concurrent triangulation designs using both quantitative and qualitative approaches were employed in the study which was also informed by the pragmatist research philosophy. A total of four hundred and thirty-four students formed the sample for the study.

Out of the total sample of 434 students, 380 were selected through a combination of stratified, census, proportional and simple random techniques to respond to a questionnaire for the quantitative data. The remaining fifty-four students were engaged in qualitative methods through interviews and focus group discussions.

The quantitative data were entered, cleaned and analysed using SPSS. Descriptive statistics, one-way anova and the independent student t-test were used to test the hypothesis. The qualitative data were organized according to the objectives by using axial coding before being analysed thematically.

6.2 Key Findings of the Study

The first objective of the study explored the perception of the colleges of education students towards contraceptive use. The key findings were that students of the colleges of education perceived the use of contraceptive as preventing pregnancy and sexually transmitted infections. However, there were fears in using them because of factors such as infertility and negative effects associated with the use of contraceptives. Students‘ perceptions also pointed to the fact that they felt embarrassed when obtaining contraceptives or contraceptive information from their parents and health facilities.

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Again, students had cost and availability perceptions of contraceptives usage. Some of the students perceived the use of contraceptive as a woman‘s responsibility. The expression of beliefs and socio-cultural hindrances to contraceptive use was also identified to be perception of the students. There was also the perception among students that, those who used contraceptives were bad.

Also, it was revealed, from the study that, about one-third of the students had negative perceptions about contraceptives. The remaining two-thirds of students at least had a positive perception about contraceptives. The fact that finding students showed positive perceptions about contraceptives can be exploited for improving the use of contraceptives among the students.

The second objective of the study examined the attitude of the students towards contraceptive use were unfavourable. There was indication that some of the students were not having sexual intercourse without contraceptives due to the possibility of unexpected pregnancies and sexually transmitted diseases. However, some students remarked that, the use of contraceptives was unimportant until after marriage.

Furthermore, others also indicated the difficulty in reaching orgasm when using contraceptives, notably the condoms. Some other negative attitudes included engaging in sexual activity in the absence of contraceptives. In all, the study revealed that about two in ten of the students had unfavorable attitudes towards contraceptives. Thus, the majority of the students were found to have favorable attitudes towards contraceptive use.

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On the third objective it became evident that more than half of the students had adequate knowledge about contraceptives. The students correctly identified contraceptives as a method of preventing pregnancy but indicated that, contraceptives did not guarantee complete protection from sexually transmitted infections. They also responded that, the use of IUDs and injectables was effective long-term methods of contraceptives. The study further revealed that, pregnancy could be delayed slightly due to hormonal contraceptives such as birth control pills. Other knowledge factors included the identification of taking emergency oral contraceptives within 72 hours after unprotected sexual intercourse and use of condoms to prevent sexually transmitted infections. Some of the students identified weight gain as an effect of contraceptive pills.

The fourth objective of the study determined the gender difference in contraceptive use among college of education students. The key findings that emerged from this objective revealed that, the average use of contraceptive among male students was higher than their female colleagues and the relationship was statistically significant.

Hypothesis one state that there is no statistically significant difference between college of education students of Greater Accra and Eastern regions in terms of knowledge of contraceptive use. The key findings that emerged from the hypothesis one revealed that there is statistically significant difference in terms of knowledge of contraceptive use between college of education students in Greater Accra and their counterpart in the Eastern Region of Ghana.

The hypothesis two also state that there is no statistically significant difference in contraceptive use between students of Colleges of Education in Greater Accra and Eastern region. In testing the hypothesis, we tried to find out whether there is

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significant difference in contraceptive use between colleges of education students within the two regions. It became evident there was no statistically significant difference. This means that colleges of education students from both regions are in the same level of contraceptive usage.

6.3 Conclusions

From the findings of the study, the following conclusions were deduced:

The understanding of the perceptions, attitudes and knowledge of students on contraceptive use remains critical for targeting interventions including counselling to stimulate positive sexual and reproductive health. The findings from this study generally indicated that, although the college of education students had satisfactory perceptions, attitudes and knowledge on contraceptive use, gaps existed mainly in their overall perspectives to contraceptive use. This is indicative of the fact that, although the respondents were tertiary education students, some had negative perceptions, unfavourable attitudes and inadequate knowledge.

It was revealed that the respondents perceived contraceptives use to be dangerous and causes infertility, expensive, felt embarrassed and uncomfortable to obtain contraceptives and receive contraceptive information from parents as well as from the clinics as a whole. They had mixed attitude towards contraceptive use, some reacted towards side effect and feeling less satisfaction by using contraceptive. They also had more knowledge in pills and condoms as compare to other methods of contraceptives

Despite the known effects of unintended pregnancies and sexually transmitted infections on females, the study showed that, male use contraceptives more. However, there was a difference in terms of knowledge level on contraceptive use among

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Greater Accra and Eastern region. Also, there was no difference in contraceptive use among colleges of education students in Greater Accra and Eastern region.

The findings from the study suggest the need for pragmatic steps to improve the reproductive health of the students by providing accurate information as well as adequate counselling and guidance support by college counsellors and avenues to improve the perceptions, attitudes and knowledge of these students and further improve the use of contraceptives among students.

6.4 Recommendations

Based on the findings of the study, the following recommendations are suggested,

1. Ghana Health Service collaborate with the counsellors to provide accurate information on contraceptives and sexual and reproductive health. The use of technological advancement such as social media, short text messaging and other avenues of providing digital information should be explored in reaching the student population with information on contraceptives. The dissemination of accurate information will influence perceptions, attitudes and knowledge of students and further contribute to increasing the use of contraceptives.
2. The Guidance and Counselling departments at the colleges of education should be well structured and incorporated into the various colleges. The departments and officers should be sensitive in identifying contextual issues confronting students in order to provide innovative guidance and counselling approaches to improve their decisions on contraceptive use and other sexual and reproductive health issues. There should be intentional attempts to make the Guidance and Counselling departments relevant and known to the students

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in order to solicit their services. Tutors and parents should collaborate to give advice to students concerning their reproductive life.

3. The Guidance and Counselling teams should use the finding from the study as an evidence-based resources to set policies in order to engage students as a group as well as individuals with appropriate and accurate information and counselling opportunities. This will help improve the contact with students by the counsellors which will enhance the opportunities to provide information to improve knowledge and address misconceptions among the students regarding contraceptive use. The counsellors should be trained on counselling programmes, how to counsel students and on the new products available both at the health facilities and market. There should be scheduled periods for counselling and planned sessions in the various schools to highlight the importance and relevance of guidance and counselling to tertiary education. Once the students comprehend the need for guidance and counselling, patronizing the services will improve. The contact with counsellors will allow the provision of information to address gaps in knowledge, attitudes and perceptions as well.
4. The guidance and counselling teams should encourage students on the importance of seeking guidance and counselling when confronted with challenging issues on their sexual and reproductive health. The difficulty in students opening up to others on their sexual and reproductive lives exist. The guidance and counselling teams should therefore, be professional in handling the use of contraceptives and other sexual and reproductive health issues of students. This will enable the students to build confidence in seeking guidance and counselling when in they are in a dilemma.

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5. The study revealed that students felt embarrassed in accessing contraceptive information from parents and health care facilities. It is therefore recommended that counsellors, parents and health workers encourage the students to visit the health care facilities when it becomes necessary since contraceptive use is also a health issue. The challenges to visiting health facilities should be identified and addressed to facilitate clinic attendance. This is because, some of the contraceptives need to be taken at health facilities. Also, healthcare providers may best be able to address effects and adverse reactions to the use of contraceptives when they occur. At health facilities, healthcare providers should augment the activities of counsellors and provide adequate, accurate information to improve knowledge, attitudes and correct wrong perceptions among the students. The health facility should therefore, be friendly to the students in order for them to enhance regular clinic attendance for contraceptives as well as information and counselling on their sexual and reproductive health.
6. Parents of students from the colleges of education should be involved in their wards‘ sexual and reproductive life. There should be adequate opportunities for parent-child discourse on contraceptive use at home to help improve students‘ attitudes and perceptions towards contraceptives. In order to achieve this, both parents and students should be encouraged to appreciate their respective challenges and concerns regarding students‘ sexual lives. Fostering good communication between parents and students will enhance the confidence of students when they are making choices and decisions regarding their sexual health.

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7. Provision of handbook and flyers on contraceptives should be available at the counselling unit in the various colleges of education for the students to use them as referencing materials. The Ghana Health Service with it implementing agency, Ministry of Health should collaborate to invest on sexual and reproductive and contraceptive service by making the service free or affordable for the students to patronise.
8. Training on counselling programmes, counsellor education, workshops and in-service training on contraceptives should be organized for the counsellors intra-semester to update them on new information on contraceptives as well as discussion on contraceptive use among the students during orientation of new students.

6.5 Contribution to Knowledge

Notwithstanding the identified limitations, the findings of the study have significant contributions to research. These contributions include theory, practice and policy. The study revealed that, some of the perceptions and attitudes of students of colleges of education were negative. These negative perspectives prevailed irrespective of their level of academic achievement. One would have easily assumed that, students at this level would have a certain kind of disposition towards contraceptives.

Additionally, the findings of the study would contribute to improvement of literature on the perceptions, attitudes and knowledge of college students on contraceptive use. The use of students from colleges of education is of significance, since it has received inadequate research attention. Thus, this study is significant as it adds to academic knowledge on the phenomenon in using students from colleges of education as the specified target population. That is, it would help fill the gap created as a result of

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little attention given to sexuality and sexual behaviour, reproductive health, and contraceptive use among colleges of education students in Ghana, particularly in the Greater Accra and Eastern regions.

The findings of the study will practically benefit professionals in the Guidance and Counselling departments of colleges of education to be innovative to enable them to streamline their counselling approaches in order to improve knowledge, shape attitudes and remove misconceptions to contraceptive use. The findings from the study also contributed by aiding the exploration of counselling options regarding the sexual and reproductive health of the students from the colleges of education.

With respect to policy, the findings of this research study would be considered at the level for policy makers and interventionists which would inform the Ministry of Education, Ghana Education Service, Ghana Health Service and colleges of education to scale-up programmes on students' sexuality and reproductive health not only in the colleges of education but at the basic, secondary and other tertiary institutions.

Also, the empirical data on the phenomenon may facilitate policy and programme formulation for the adequate contraceptive use to enhance prevention of unintended pregnancy, STDs and HIV/AIDS among students. The results of this research may inform and shape the reproductive health policy in colleges of education and by extension cover all levels of schools in Ghana as trainee teachers are the major informants of information.

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6.6 Implication for Counselling and Professional Practice

The findings of this study have several implications for counselling and professional practice including education, health and social work.

6.6.1 Implications for counselling

Generally, the perceptions and attitude of college students from this study towards contraceptive use was satisfactory, but there should be further improvements among young people. This will require conscious and deliberate efforts to reach students with reproductive health information and skills to exercise control over critical sexual and reproductive health choices. The need for counseling units with trained and professional counsellors in educational institutions is critical in supporting young students regarding the choices they make. It is important for schools to have functioning counseling units with trained counsellors to manage the unit. This will ensure that, counselling needs of students can be catered for in the various schools and institutions.

Counsellors should offer accurate information on contraceptive use and correct misperceptions that have been formed about contraceptives. The continuous provision of accurate contraceptive information to address misperceptions to shape the attitudes of the young students remains critically important. In the absence of accurate information, students will continue to hold on to negative perceptions which have some consequences on contraceptive use. There should be counselling efforts to also address the deep-rooted misconception about contraceptives. This would highlight the important measures that to prevent unintended pregnancies and sexually transmitted diseases.

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There should also be guidance and support from counsellors to assist students make important decisions concerning their sexual and reproductive health. Counsellors should be the ‗stop gap' measure for students regarding risky behaviours and choices on contraceptives. There should therefore, be avenues to reach out to students at their personal levels and guide them to make positive informed decisions regarding their sexual health.

Counsellors should also have discussions with parents on students' reproductive health issues. At such fora, counsellors should encourage parents to have a stake and interest in their children's sexual and reproductive health and life. This will improve the parent-child discourse on contraceptive use and improve health choices of students. The inadequacy of having such parent-child interactions contributes to seeking information from wrong sources, exposing students to risky behaviours and poor choices.

The knowledge assessment from the study also has implications for counselling. There was a gap among college students as means scores for knowledge parameters could be better than the observed levels from the study. The need for instituting counselling avenues for students in various colleges is crucial. Opportunities for ensuring adequate implementation and adaptation of structures such as counselling corners among others can be of help to students.

Counselling activities are also to target the gaps in knowledge by providing accurate information and making the knowledge available to students. In schools, counsellors could develop brief educational materials on sexual and reproductive health and made available to students. The availability of technological models and application could

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also be harnessed to reach young students with information on available contraceptive method.

Furthermore, opening up avenues of counselling for the students is critical in easing the negative perceptions and improving their confidence in the choices they make regarding contraceptive use to reduce the risk of unintended pregnancies. Furthermore, counselling opportunities should encourage students to discuss their reproductive and sexual health life with their parents and guardians. There should also be support for students to acquire contraceptives by diversifying approaches to teaching students to exercise control over their sexual and reproductive life which includes contraceptive use.

6.6.2 Implications for Education

The findings of the study have implications for education. Students from the colleges of education spend a significant proportion of their time and other resources in educational settings. The importance of the academic performance and educational prospects of the students cannot be underestimated. This calls for the need to address the gaps identified from the perceptions, attitudes and knowledge of the students.

The negative perceptions and attitudes to contraceptive use leads to poor contraceptive decision making among students. This exposes the students to the risks of unintended pregnancies and sexually transmitted diseases. The occurrence of unintended pregnancies may truncate the educational career of the student. Sexually transmitted diseases also have the tendency of contributing to associated complications.

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The study found that, a significant proportion of students had inadequate contraceptive knowledge on other types of contraceptives. At the level of tertiary education, students are expected to have adequate knowledge about all the contraceptives. The deficiencies recorded in the study requires the institution of structures to incorporate contextually viable educational mechanisms to improve the knowledge of students not only of contraceptives, but sexual and reproductive health. Many social institutions shy away from the discussion on sexuality and contraceptive, and the educational system cannot be in oblivion with regard to supporting students to take control and manage their sexual and reproductive life.

The occurrence of unintended pregnancies and sexually transmitted infections among students can negatively affect their effective participation in educational activities. For instance, time to be spent in school completing assignments and class works may have to be shared with antenatal attendance or medical care for treating sexually transmitted diseases. This is a situation where adequate use of contraceptive can effectively prevent pregnancy.

6.6.3 Implications for Health

The findings of the study also have several implications for health. Contraceptive use is a health issue. As such the findings suggest the need for healthcare providers to package contraceptive information in a way that corrects misconceptions and negative perception. Public and reproductive health units of health facilities which have such schools within their jurisdiction should schedule meetings with the schools to provide education. Students may also place value on the information shared by health workers because of their field of expertise.

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The study also suggests the need to strengthen existing counselling structures as well as other structures which will encourage students to visit the health facilities with their sexual and reproductive health problems. This includes the rebranding of the students ‗health corner' concept to encourage students to make adequate use of them. Such concepts could be replicated in the schools, where a health worker visits the school on specified dates to attend to the sexual and reproductive health issues of students. Providing an enabling environment for students would enhance their health seeking behaviour with regard to their sexual and reproductive life.

There is also the need to make affordable contraceptives readily available on the market. In addition, health institutions and providers should find innovative avenues and approaches such as using students' health club meetings to make affordable contraceptive products available to the students. This will largely address the issues of cost and access to contraceptives.

6.7 Suggestions for Future Research

The study was limited to colleges of education in the Greater Accra and Eastern regions of Ghana. These two regions are in the southern zone of the country. Therefore, generalizing the findings to the entire country may not be representative. Future research should be designed to widen the scope and study area to include other geographical zones in the country. The inclusion of the northern belt and middle belt of the country viz-a-viz the southern zone will enhance the identification of contextual factors regarding the perceptions, attitudes and knowledge of students on contraceptive use.

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The study mainly described the perceptions, attitudes and knowledge of the students on contraceptive use. The factors that influence or predict the perceptions, attitudes and knowledge among the students were not investigated in this study. Future research should be designed to investigate the factors that predict the variables in order to narrow down interventions to specific factors. This could employ the use of robust analytic methods such as Chi-square test of independence and multivariate regression analysis.

6.8 Summary of Chapter Six

This chapter delineated the overview of the entire work. It focused on contraceptive use among colleges of education students focusing on only Eastern and Greater Accra regions. The chapter began with a summary of the study which entailed the objective, literature review and the research methodology employed. It also summarized the key findings of the study, limitation, contribution to knowledge and suggestions for further research.

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APPENDIXES

APPENDIX A

Letter of Introduction

UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF COUNSELLING PSYCHOLOGY
P. O. Box 25, Winneba, Ghana · psychology@uew.edu.gh

9th November, 2020.

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce to you, DORIS AMOAKO JNR, the bearer of this letter who is a student in the Department of Counselling Psychology of the University of Education, Winneba. She is reading Doctor of Philosophy in Guidance and Counselling with index number 9180170001.

She is conducting a research on the topic: CONTRACEPTIVE USE AMONG STUDENTS OF COLLEGES OF EDUCATION IN GREATER ACCRA AND EASTERN REGION, IMPLICATION FOR COUNSELLING PRACTICE. This is in partial fulfillment of the requirements for the award of the above mentioned degree.

She is required to administer questionnaire to help her gather data for the said research and she has chosen to do so in your outfit.

I will be grateful if she is given permission to carry out this exercise.

Thank you.

Yours faithfully,

DR. PETER ESHUN
AG. HEAD OF DEPARTMENT

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APPENDIX B

Factor Analysis

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.941	11.592	11.592	3.941	11.592	11.592	2.218	6.523	6.523
2	3.263	9.597	21.188	3.263	9.597	21.188	2.106	6.193	12.717
3	2.019	5.938	27.126	2.019	5.938	27.126	2.023	5.951	18.667
4	1.800	5.293	32.419	1.800	5.293	32.419	2.008	5.907	24.575
5	1.569	4.616	37.035	1.569	4.616	37.035	1.985	5.837	30.412
6	1.439	4.231	41.266	1.439	4.231	41.266	1.906	5.605	36.017
7	1.316	3.870	45.136	1.316	3.870	45.136	1.842	5.416	41.433
8	1.259	3.703	48.839	1.259	3.703	48.839	1.665	4.897	46.330
9	1.225	3.604	52.443	1.225	3.604	52.443	1.536	4.517	50.847
10	1.126	3.311	55.754	1.126	3.311	55.754	1.340	3.943	54.789
11	1.082	3.183	58.938	1.082	3.183	58.938	1.216	3.576	58.366
12	1.015	2.986	61.924	1.015	2.986	61.924	1.210	3.558	61.924
13	0.904	2.658	64.582						
14	0.843	2.478	67.061						
15	0.802	2.359	69.420						
16	0.743	2.184	71.604						
17	0.727	2.137	73.742						
18	0.706	2.077	75.819						
19	0.663	1.949	77.768						

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20	0.654	1.925	79.693
21	0.601	1.767	81.460
22	0.588	1.729	83.189
23	0.584	1.718	84.907
24	0.569	1.673	86.580
25	0.553	1.627	88.207
26	0.521	1.533	89.739
27	0.496	1.458	91.197
28	0.488	1.436	92.633
29	0.453	1.332	93.964
30	0.449	1.321	95.286
31	0.427	1.255	96.541
32	0.414	1.219	97.760
33	0.394	1.160	98.920
34	0.367	1.080	100.000

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Rotated Component Matrix

Construct/Variable Code	Component 1	2	3	4	5	6	7	8	9	10	11	12
PERC1	0.686											
PERC2	0.643											
PERC3	0.629											
PERC4	0.581											
PERC7		0.724										
PERC8		0.705										
PERC10		0.675										
PERC11			0.792									
PERC12			0.741									
PERC13			0.548									
PERC14			0.513									
PERC15				0.772								
PERC16				0.703								
KNOW3					0.780							
KNOW4					0.676							
KNOW5					0.666							
KNOW6						0.730						
KNOW7						0.638						
KNOW8						0.619						
KNOW9							0.776					
ATT1							0.702					
ATT2							0.628					
ATT3								0.801				
ATT4								0.622				
ATT5								0.598				
ATT6									0.786			
ATT7									0.571			
ATT8										0.808		
ATT9										-0.702		
ATT10											0.776	
ATT11												0.829

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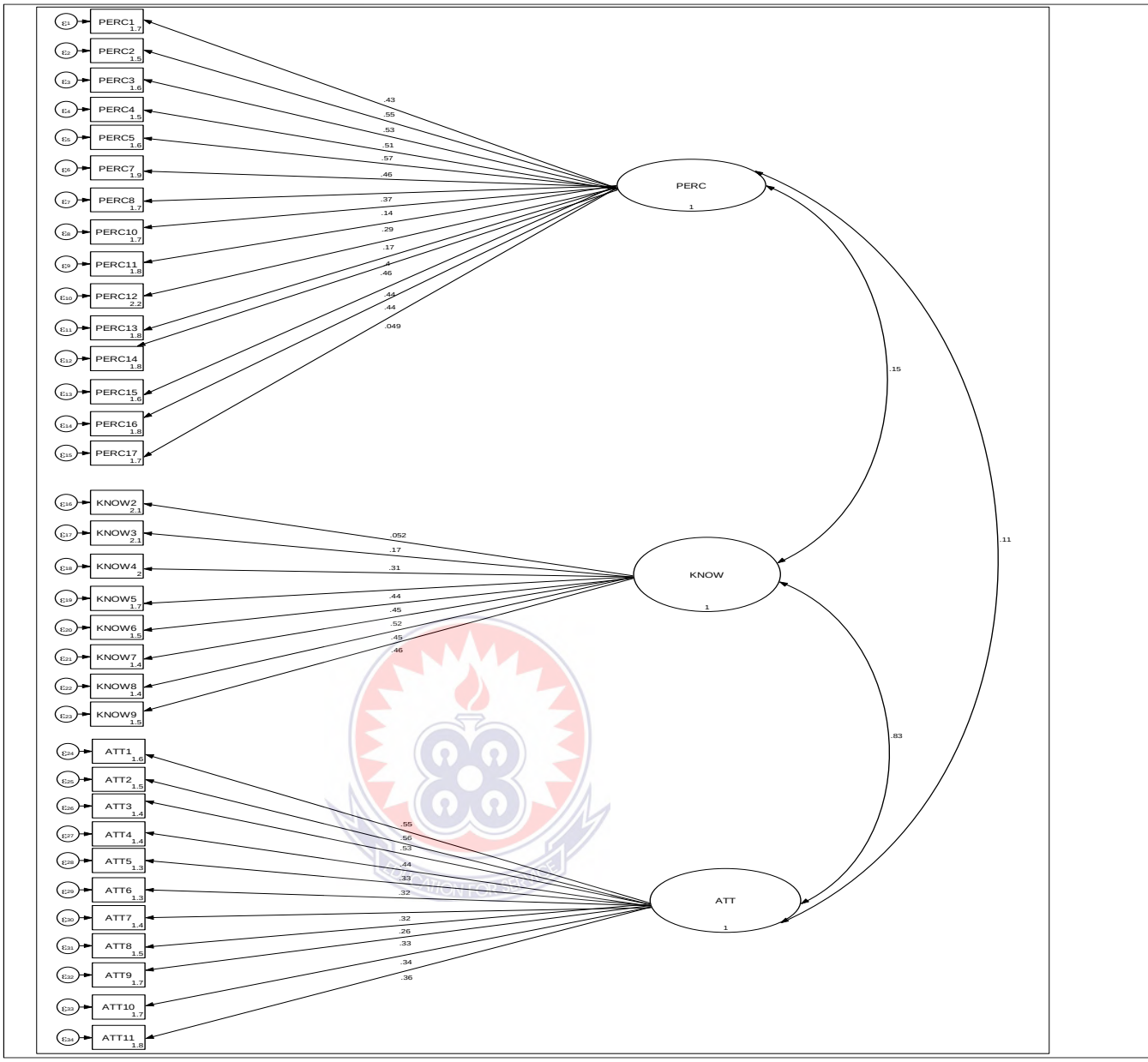

Confirmatory Factor Analysis – Path Analysis

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APPENDIX C

Questionnaire for Respondents

Project Title: Contraceptive use among students of Colleges of Education in Greater Accra and Eastern Regions, Implication for counselling practice

Participant instructions

This questionnaire is designed to seek your views on **Contraceptive use among students of colleges of education in Greater Accra and Eastern regions: Implication for counselling practice.** This is in partial fulfilment of Doctor of Philosophy in Counselling Psychology at the University of Education, Winneba. It is intended for academic purposes only. Confidentiality of the information collected is highly assured and will be used for the intended purposes only. Tick only one correct response and multiple responses where applicable

SECTION A: BACKGROUND CHARACTERISTICS OF RESPONDENTS

1. Gender a. Male [ ] b. Female [ ]
2. Level a. First year [ ] b. Second year [ ] c. Third year [ ]
3. College of the respondent a. Accra college of education [ ] b. Ada college of education [ ] c. Akropong college of education [ ] d. Koforidua college of education [ ] e. Abetifi college of education [ ] f. Aburi college of education [ ]
4. Age a. less than 20 years [ ] b. 20 -24 [ ] c. 25-30 [ ] c. 30 - 35 [ ]
5. Religious affiliation: a. Christianity [ ] b. Islamic [ ] c. Traditional [ ]
6. Marital Status: a. Married [ ] b. Single [ ] c. Divorced [ ] d. Separated [ ] e. Widowed [ ]

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The responses to section B, C, D and E are measured with five points unilinear scale such that The scale was scored as follows: Strongly Disagree (SD)-1, Disagree (D)-2, Neutral (N)-3, Agree (A)-4, and Strongly Agree (SA)-5**. Please indicate your level of agreement to the statement by ticking the appropriate box.**

SECTION B: PERCEPTION ABOUT CONTRACEPTIVE USE

SN	ITEM	1	2	3	4	5
7	Painful to use contraceptives					
8	Contraceptive is not suitable for me.					
9	Hindrance to daily activities					
10	Risks in using contraceptives					
11	Scary for me to use contraceptive					
12	Causes bad reaction from partner					
13	Causes infertility					
14	Contraceptives are expensive					
15	Prevent pregnancy and sexually transmitted infection					
16	Contraceptive use is woman‘s responsibility					
17	feeling uncomfortable to visit health facility					
18	Bad feeling of contraceptive information from parents					
19	Unavailability of contraceptive					
20	It is a foreign concept					
21	Conflict with Beliefs					
22	It is embarrassing to obtain contraceptive.					
23	Students who use contraceptives are bad					
24	Negative effect due to prolonged use					

SECTION C: KNOWLEDGE LEVEL OF CONTRACEPTIVE USE

SN	ITEMS	1	2	3	4	5
25	Pills and condoms					
	Pills leading to no weight gain					
	Using contraceptives to prevent pregnancy					
	Condoms to prevent sexually transmitted diseases					
26	Type of contraceptive you know: • Condom (male/female)					
	• Oral contraceptive (The Pill)					
	• Injection					
	• IUCD					
	• Implant					
27	No 100% protection from sexually transmitted infections					
	Injectables and IUDS for long term					
28	Emergency oral contraceptives for 72 hours after unprotected sex					

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SECTION D: ATTITUDE TOWARDS CONTRACEPTIVE USE

	Cognitive (Thought)					
29	It is unimportant to use contraceptives before and after marriage					
30	Having sexual intercourse without using contraceptives causes pregnancy					
31	It is good to use contraceptive always for sexual intercourse					
	Affective (Feeling)					
32	Side effects of contraceptive method are dangerous					
33	Difficult to reach orgasm by use a contraceptive					
	Behavioural (Action)					
34	Receiving contraceptive information at the clinic is embarrassing					
35	Using contraceptives boost your confidence					

SECTION E: GENDER DIFFERENCE TOWARDS CONTRACEPTIVE USE

36	Do you or your partner use any type of contraceptives					
37	I use no contraceptives					
38	Women are stigmatised for using contraceptives					
39	Afraid of STI and pregnancy					
40	I use contraceptive for protection					
41	Contraceptives are not subject for discussion among women					

THANK YOU

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APPENDIX C

Semi structured Interview Guide for students

1. Gender a. Male [ ] b. Female [ ]
2. Level a. First year [ ] b. Second year [ ] c. Third year [ ]
3. College of the respondent a. Accra college of education [ ] b. Ada college of education [ ] c. Akropong college of education [ ] d. Koforidua college of education [ ] e. Abetifi college of education [ ] f. Aburi college of education [ ]
4. Age a. less than 20 years [ ] b. 20 -24 [ ] c. 25-30 [ ] c. 30 - 35 [ ]
5. Religious affiliation: a. Christianity [ ] b. Islamic [ ] c. Traditional [ ]
6. Marital Status: a. Married [ ] b. Single [ ] c. Divorced [ ] d. Separated [ ] e. Widowed [ ]
7. Tell me what you know about contraceptives?
8. What do you know about each of them?
9. How easy do you find using contraceptive?
10. What influences your decision to use contraceptives?
11. Which method of contraceptive have you and your partner ever used?
12. Why do you use condom?
13. Do you think contraceptives have side effect? If yes, does this influence your choice of service?
14. What do you consider in choosing any type of contraceptive?
15. Do you have any beliefs that influence your decision to use contraceptive?
16. How do you feel when seen with contraceptive?
17. Can you openly discuss issues concerning contraceptives?

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SAMPLE TABLE FOR LEVELS OF CODING

Narrative/ Transcription	**Descriptive**	**Codes from open coding**	**Category from axial coding//Sub-theme**	**Selective coding/theme**	**Inductive coding**	**Deductive coding**
Contraceptives help me to prevent pregnancy and contracting disease like HIV and sexually transmitted infection whenever I am with my partner. It is easy to use. It has never given me any problem. Ever since I started to have sex with my partner, we have always been using condom to protect ourselves from pregnancy and HIV. I can't stop using condom as long as I am in school…	*Contraceptives prevent pregnancy and contracting and sexually transmitted infection. It is easy to use. It help to solve problem. it helps to protect against pregnancy and STI.*	Prevention pregnancy Sexually transmitted infection Protection Solve Problems Having sex Partner Consent Condom use	Prevention of pregnancy Protection against STI Solve problems Have sex with condom Partner agreement	Prevent pregnancy and sexually transmitted infection	Prevent pregnancy and sexually transmitted infection	Perception of students on use contraceptive

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Sample Table

Summary of the population										
				Qualitative		Breakdown by levels				
						Quantitative Sample			Qualitative Sample	
SN	Name of College	Student Population	Proportionate Sample for Questionnaire (Quantitative)	Interviews	Focus Group Discussion	Level	Total Enrolment	Proportionate Sample	Interviews	Focus Group Discussion
1	Accra (ACOE)	1049	54	3	6	100	298	16	1	2
						200	351	18	1	2
						300	400	20	1	2
2	Ada (ADACOE)	905	46	3	6	100	335	17	1	2
						200	259	13	1	2
						300	311	16	1	2
3	Prebyterian Women (PWC)	827	42	3	6	100	386	20	1	2
						200	218	11	1	2
						300	223	11	1	2
4	Presbyterian Akropong (PCOE)	1651	84	3	6	100	682	35	1	2
						200	493	25	1	2
						300	476	24	1	2
5	Presbyterian Abetifi (ABETICO)	1279	65	3	6	100	500	26	1	2
						200	400	20	1	2
						300	379	19	1	2
6	SDA (SDACOE)	1732	88	3	6	100	863	45	1	2
						200	472	24	1	2
						300	397	20	1	2
	Total	***7443***	***380***	***18***	***36***		**7443**	**380**	**18**	**36**