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## **Adolescents' Contraceptive Knowledge and Attitudes Toward Premarital Sex: Educational and Counselling Implications**

Martha Kwakyewaa  
*Agogo State College, Agogo Ashanti -Akim, Agogo, Ghana*

Vera Arhin (Corresponding Author)  
*Department of Education, College of Distance Education, University of Cape Coast Cape Coast, Ghana*  
Email: varhin@ucc.edu.gh

Samuel Tiekue Gyansah  
*Department of Education, College of Distance Education, University of Cape Coast Cape Coast, Ghana*

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### **Abstract**

The quest for abstinence has made the dissemination of information on contraceptives to be sporadic. This study investigated the relationship between knowledge of contraceptive and attitudes towards premarital sex among senior high school students in Asante Akim North district of Ghana. The study sample comprised 365 students selected from two senior high schools in the district, 11 teenage mothers and six pregnant teenagers. The questionnaire and a semi-structured interview guide were the main tools for data collection. After cleansing the data, 361 responses were used for the quantitative data analyses. Descriptive and inferential statistics were used for the quantitative analyses, and thematic analysis used for the qualitative analyses. The study findings revealed that respondents' knowledge of modern, and natural contraceptives significantly and negatively predicted the variance of attitude toward pre-marital sex ( $\beta = -0.15$ ,  $p < 0.05$ ), and ( $\beta = -0.09$ ,  $p < 0.05$ ) respectively. However, respondents' knowledge on emergency contraceptive significantly and positively predicted the variance of attitude toward pre-marital sex ( $\beta = 0.19$ ,  $p < 0.05$ ). The study concluded that although a good contraceptive knowledge is needed to promote chastity and also protect adolescents from unwanted pregnancies and other health-related issues, contraceptives must be made available for the youth. The study recommends to heads of the institutions, school counsellors as well as parents to provide adolescents with information on contraceptives to enable them make right decisions whenever they decide to engage in premarital sex.

**Keywords:** Attitude, Contraceptive, Knowledge, Premarital Sex, Student

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## 1. Introduction

In today's context where premarital sexual activity is prevalent among young people, contraceptive knowledge becomes essential for unmarried adolescents to safeguard themselves against unintended pregnancy and its associated health challenges. Yet, contraceptive usage knowledge remains a sensitive topic for many in the Ghanaian communities. Keogh et al. (2021) opine that accessing sexual and reproductive health services can be challenging for young Ghanaian women, and despite their desire to avoid pregnancy, many are not using contraceptives.

Mengistie et al. (2015) and Shamsu-Deen et al. (2022) assert that adolescents involved themselves in premarital sex without adequate information and knowledge of reproductive health and contraceptives. Sidamo (2021) believes that societal norms which discourage premarital sex have created obstacles for unmarried youth to seek contraceptive services and relevant information on sexual activities. This has also prevented significant others to discuss and address sexual matters with young people. Willan (2013) is also of the view that, the limited in-depth knowledge about contraceptive usage and its associated challenges on how to access contraceptives, make it difficult for the youth to use contraceptives. Ahissou et al. (2022) opined that accessing the utilisation of contraceptives is on the low side. Govender et al. (2020) identified peer pressure, drugs and alcohol, sexual experimentation, myths about contraceptives, unprotected sex, the media, parental influence, poverty and transactional sex, and vulnerability as factors that provoke risky premarital sexual behaviours among adolescents.

Contraceptives are classified as modern, traditional and emergency (Almalik et al., 2018). The modern contraceptive is divided into two and include: Barrier methods (male and female condoms, diaphragm, cervical cap, and sponge), and Hormonal contraceptives (oral, injectable, transdermal, vaginal ring, and implants; intrauterine device [IUD]). The traditional contraceptive is classified under five methods which include; rhythm method (periodic abstinence), withdrawal (coitus interruptus), fertility awareness-based method, the lactational amenorrhea method, and folk method. The Emergency contraceptive (also known as permanent method) comprises female sterilization and vasectomy for men.

Premarital sex is explained as a willing and intentional sexual intercourse engaged in by people who are not married (Arega et al., 2017). Premarital sex in this study refers to sexual intercourse engaged in by adolescents in senior high schools who are not married. Senior high school (SHS) students in Ghana fall within the age cohort of 15-19 years. Although there is non-mutually exclusive definition for adolescent, the World Health Organisation (WHO) proposed definition for the adolescence that spanned from ages 10 to 19 was adopted for the study (Singh et al., 2019). Hashmi and Fayyaz (2022) explained that adolescence is a critical developmental period characterised by a state of increased psychological and physical change, which culminate into sexual maturation that makes the young person experience intense sexual desire. It is also a period associated with risk-taking behaviours (Ceperich & Ingersoll, 2011).

Attitude is defined as a learned propensity to assess things in a particular manner (Gaiseanu, 2020). It is a person's inclined state of mind concerning a value. Attitudes have been described to have three dimensions which are referred to as the ABCs of attitudes and these are the Affective, Behavioural and Cognitive components (McLeod, 2018). The affective component consists of emotions or feelings connected to an attitude object or how an attitude object makes one feel. The behavioural aspect of attitudes refers to how a person's attitude towards a particular attitude object causes him or her to behave towards those objects. The cognitive deals with the knowledge, thoughts, attributes and beliefs that one associates with an attitude object. Mostly, the positive and negative attribute associated with attitude object determines a person's attitude (McLeod, 2018).

The United Nations Children's Fund (UNICEF) data for 2022 reveals that approximately 13 percent of adolescent girls and young women experience childbirth before reaching the age of 18 (UNICEF, 2023). Accordingly, statistics from the Ghana Health Information Management System (2021), documented 542,131 pregnancies for adolescents aged 15-18, and 13,444 pregnancies for young teenagers aged 10-14 years between 2016 and 2020 in Ghana.

Annang (2021), reported on data from the Ghana Education Service (GES) which indicates that the Ashanti region in Ghana holds the unfortunate distinction of having the highest number of teenage pregnancies nationwide. Annang's findings align with the data from the Ghana Health Services, which reported that among the 16 regions in Ghana, the Ashanti region tops the list with 17,802 recorded cases of teenage pregnancy, followed by the Eastern region with 10,865 cases. Conversely, the Ahafo and Savannah regions reported the lowest numbers, with 2,625 and 3,516 cases, respectively. These statistics are cause for concern as a significant portion of the pregnant girls may not have sought medical care, potentially resulting in an underreporting of the actual cases of teenage pregnancies in Ghana. Moreover, these figures not only raise alarm but also carry lifelong implications for education, the health and overall well-being of teenage mothers, the children they give birth to, their families, and the broader society.

Primarily, teenage pregnancies disrupt educational paths, limiting opportunities for young mothers to pursue further studies or gain employment, perpetuating cycles of poverty and dependency within the community. Early childbearing or pregnancy can significantly have adverse effects on the female adolescents' education and future job prospects (UNICEF, 2023). Lack of access to maternal healthcare service, may also pose significant risks to both maternal and infant health, with teenage mothers experiencing higher rates of complications during pregnancy and childbirth. Cultural stigmas surrounding discussions on sexuality and reproductive health further hinder preventive measures and perpetuate misinformation on the use of contraceptives. The lack of knowledge or lack of access to contraceptives increase the vulnerability of adolescents to unintended pregnancies. Additionally, the long-term socio-economic consequences extend beyond immediate health outcomes, affecting the intergenerational well-being of families and communities.

Adolescents' involvement in unprotected sex not only bring about teenage pregnancies, as opined by Osaikhuwuomwan and Osemwenkha (2013), but adolescents' involvement in unprotected premarital sex exposes them to various reproductive health problems which include stress, depression, and suicidal ideation apart from early motherhood. Christofides et al. (2014) in their study, found that early adolescent pregnancies increase the incidence of Human Immunodeficiency Virus (HIV). Thus, overlooking these underlying issues not only impact the sexually active adolescent negatively but also undermine the broader socio-economic development objectives of Ghana.

Studies conducted in Ghana had shown that there is a general knowledge about contraceptives among adolescents but in-depth knowledge and usage is limited (Awusabo –Asare, et al., 2006; Boamah, et al., 2014). However, the researchers did not come across any existing studies in the study area examining the variables of interest. Given the limited availability of research regarding adolescents in senior high schools' knowledge of contraceptive and attitudes toward premarital sexual activity in the study locale, it is therefore imperative to investigate this and provide a context-specific intervention, hence the need to conduct this study at Agogo Asante Akim, situated in the Ashanti region (which has the highest incidence of teenage pregnancy in Ghana).

Consequently, study on adolescents' contraceptive knowledge and attitudes towards premarital sex holds significant importance for education and awareness, behavioural insights, risk reductions and policy implications. First, the findings of the study may be a valuable asset in encouraging adolescents to actively seek information about premarital sexual practices. It may also aid in the promotion of safe sexual practices among adolescents, thereby reducing the risk of unintended pregnancies, sexually transmitted infections (STIs), and HIV/AIDS. Further, it may offer important insights for service providers (such as school counsellors devoted to addressing the issue of contraceptive knowledge and teenage pregnancies), and policy makers. By identifying gaps in adolescents' knowledge about contraceptives, the study findings may provide service providers the understanding that can guide interventions aimed at promoting responsible sexual decision-making among adolescents. Assessing attitudes toward premarital sex may help service providers to identify adolescents who may engage in risky sexual behaviour and provide early interventions. Finally, the study findings may inform the development of policies and guidelines related to sexual education in the senior high schools.

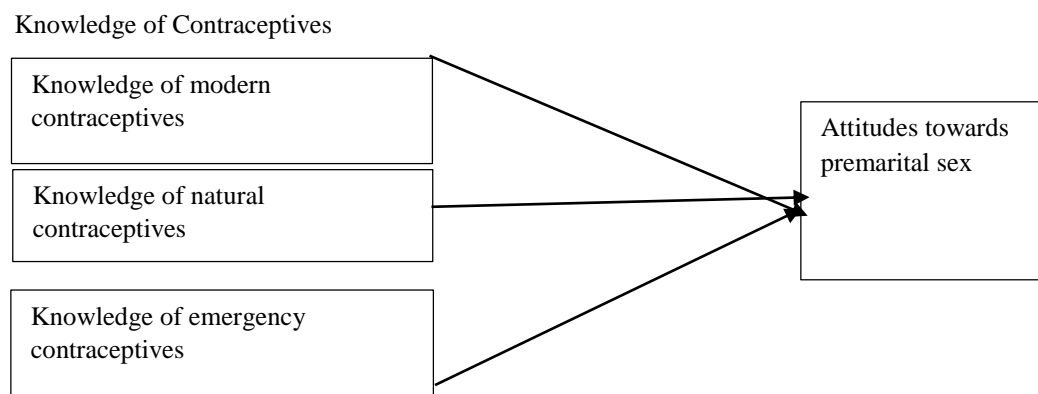
This study is based on the Theory of Reasoned Action (TRA), formulated by Martin Fishbein and Icek Ajzen in 1975. According to Fishbein and Ajzen (1975), individuals' actions are influenced by their existing attitudes and behavioural intentions. Essentially, the decision of individuals to partake in a specific behaviour hinge on their expectations regarding the outcomes of that behaviour. The primary goal of applying TRA in this study is to offer researchers a deeper understanding of the voluntary actions of individuals engaging in premarital sexual activity and their awareness of protective measures.

### 1.1. Research Objectives

The study is guided by three research objectives which sought to:

1. Examine adolescents in senior high schools' knowledge of (modern, natural and emergency) contraceptives.
2. Examine the relationship between adolescents in senior high schools' knowledge of contraceptives (modern, natural, and emergency) and their attitudes toward premarital sex.
3. Investigate whether there is a difference in adolescents in senior high schools' knowledge of contraceptives (modern, natural, and emergency) and their attitude towards premarital sex.

### 1.2. Conceptual Framework



**Figure 1. Conceptual framework for adolescents' contraceptive knowledge and attitudes toward premarital sex**

The study assumed that if adolescents have high level of knowledge on contraceptive usage, it will lead to negative attitude towards premarital. On the other hand, low level of knowledge on contraceptive will lead to positive attitude towards premarital sex.

## 2. Literature Review

Sharma et al. (2021) conducted a study among young people within the ages of 13 and 23 years, who visited Staten Island University Hospital's adolescent clinic from March to August, 2018. The study purposed to examine the attitudes and knowledge adolescents have about contraceptives with emphasis on intra-uterine device. The findings revealed that, the majority of the respondents had knowledge of condoms and other modern methods like injectables, pills, vaginal ring, and intra- uterine device.

A study conducted by Tchokossa and Adeyemi (2018) among female adolescents in secondary schools in Ife Central Local Government found that (61.5%) had adequate knowledge of contraceptives but its usage was limited as (51.1%) of respondents reported of not using any form of contraceptive during their first sexual intercourse. Concerning the type of contraceptive used, although condom was found to be the most commonly used, (67%) of the respondents had never used it, (10.8%) rarely used it, (6.8%) occasionally used it and only (15.4%) of respondents always used it.

Further, Arisukwu et al. (2020) conducted a study in Imo State, Nigeria on adolescents' knowledge and perception of emergency contraceptives. The findings revealed that knowledge of emergency contraceptives was minimal. It was reported that (52.8%) of the respondents had heard of emergency contraceptives, however, only (14.5%) of the respondents had good knowledge of it and only (25%) had ever used it. The non-usage was due to the misconception that emergency contraceptives cause female infertility.

Also, a study by Oppong et al. (2021) reported that (99.8%) and (95%) of respondents had knowledge of at least one modern and one traditional contraceptive method respectively. However, contraceptive prevalence rate was (43%). Modern methods had (34%) and (9%) for traditional methods. Although several studies have been done in this area with regard to contraceptive knowledge, these studies investigated on one type of contraceptive at a time. However, the current study therefore sought to fill gap by examining adolescents' knowledge of the various types of contraceptives: Modern, Natural and Emergency.

On the relationship between contraceptive knowledge and attitudes towards premarital sex, Mbadu Muanda et al. (2018) compared and contrasted the perceptions and attitudes of the youths on contraceptive usage, premarital sex and prevention of pregnancy. Data were analysed to identify themes in fourteen focus group discussions with 224 participants. The findings revealed that in both rural and urban areas premarital sex was largely sanctioned by peers. The findings further revealed that adolescents feared pregnancy but had limited knowledge of contraceptive methods. Zhou et al. (2012) study conducted in Beijing found that respondents have permissive attitudes towards premarital sex as well as having positive attitude relating to premarital sexual intercourse although attitudes towards contraception was negative. A study conducted by Wong (2012) from a public university in Malaysia also found that the group with significantly low scores in contraceptive awareness and knowledge and had an increasingly higher permissive attitude towards sex. However, those with low contraceptive knowledge had positive attitudes towards premarital sex.

Further, Jose et al. (2019) in their study among teenage girls, found that most of the respondents had negative attitudes towards premarital sex. A weak positive correlation was found to exist between knowledge on contraceptives and attitude towards premarital sex. This indicates that as knowledge on contraception increased, negative attitude towards premarital sex also increased. Jose et al. explain that these negative attitudes could be attributed to strong religious beliefs and very good knowledge regarding contraceptives.

Furthermore, in a national survey of young people in the USA, Frost, et al. (2012) found that the odds of looking forward to having unprotected sex in 3 months' time decreased by 9 percent each time a respondent responded correctly to a question on the contraceptive knowledge scale. That is, as knowledge of contraception increase, the likelihood of engaging in premarital sex decreases.

Lastly, Williams et al. (2021) found that the majority of respondents (80.2%) had heard of oral emergency contraceptive , and the knowledge of emergency contraceptive was associated with being older and being involved in sexual activities. Similarly, a study conducted by Ottesen et al. (2002) also found most of the sexually active girls (89.3%) and boys (75.2%) knew of the existence of emergency contraceptives. That is, an indication of positive attitudes towards premarital sex among adolescents with high knowledge of emergency contraceptive.

## 3. Methodology

### 3.1. Research Design

The mixed-methods approach, specifically the explanatory sequential mixed method was employed for the study. An explanatory sequential mixed method, according to Creswell and Plano Clark (2018), is a two-phased mixed method that comprised the collection and analysing of quantitative data first, and then after, collecting and analysing of qualitative data to elaborate on the findings of the quantitative data.

### 3.2. Sampling Procedure

Krejcie and Morgan (1970) sample size determination table was used to sample 365 SHS students in the Ashanti Akim North District from a target population of 7753 under 95 % confidence interval with 5% margin of error. Eleven teenage mothers and six pregnant teenagers were included in the sampling. The multistage sampling technique was adopted for the sampling procedure. First the simple random sampling technique was employed to select two senior high schools from the three senior high schools in the district. Then after, the proportional to size technique was used to calculate the number of participants to be

selected from the two selected schools. Subsequently, the stratification sampling procedure was used to select students in forms one and two to participate in the study. The form three students were not included because they have then completed school. The simple random sampling technique was employed to select students from each of the strata to make up the sample size. Finally, the snowball sampling technique was employed to select 11 teenage mothers and six pregnant teenagers for clarification of the findings for research objective one. This summed up the total sampling size for the study to 382.

### 3.3. Research Instruments

The instrument used for data collection was the questionnaire and a semi-structured interview guide. The questionnaire was made up of four sections. Section A was used to solicit responses to issues on contraceptive knowledge (modern, natural and emergency). A self-constructed scale based on literature was used. Respondents' knowledge on modern contraceptive had 17 items, knowledge on natural and emergency contraceptives were made up of 6 items each. All the three sub-scales were made up of a 4- point Likert scale ranging from 1 = strongly disagree, 2 = disagree, 3 = agree and 4= strongly agree. All statements were in the affirmative. An agreement to the statement means the respondent has knowledge on that contraceptive. Section B was used to measure participants' attitude toward pre-marital. Sixteen items were adapted from Eze's (2014) study scale on "Adolescents' response on their attitudes towards premarital sex". Respondents' attitude was measured at nominal (dichotomous) level. The items were coded 1 (true of me) and 2 (not true of me). The maximum score a respondent could attain from responding to all items was  $16 \times 2 = 32$  and the lowest score  $16 \times 1 = 16$ . The highest mean a participant could obtain from responding to all items was ( $M = 2$ ) and the lowest was ( $M = 1$ ). All items were negatively worded and a participant who obtained ( $M \leq 1.0$ ) was classified as possessing positive attitudes towards premarital sex (meaning that they view premarital sex as acceptable and normal), and a participant who obtained ( $M \geq 1.1$ ) was classified as having negative attitude towards premarital sex.

For in-depth understanding and clarification on the quantitative analysis for research objective one, a semi-structured interview guide was used to solicit responses from 11 teenage mothers and six pregnant teenagers who were dropped out students from the two schools sampled. This semi- structured interview guide made use of 3 generative questions to elicit initial responses and further probing questions were asked based on initial response during a focus group discussion. A suitable time, and a place of convenient was chosen by the respondents for the focus group discussion.

Before the data were collected, the instrument was subjected to a pretesting to ascertain its reliability. This was done using 30 students from the third school in the district that was not sampled for the study. Cronbach Alpha reliability coefficient obtained were: Modern contraceptives = .92, Natural contraceptives = .78, Emergency contraceptives = .73 and Attitudes towards premarital sex = .92. The overall Cronbach Alpha for the instrument was .84. This value exceeded the recommended threshold of .70 and above as suggested by DeVellis (2016), hence the instrument was reliable and was used to collect the data.

### 3.4. Data Analyses

After the collection of the quantitative data, research objective one was measured using mean and standard deviation. The coded mean was also classified into: Low knowledge ( $M = 1.0 - 2.4$ ), Moderate knowledge ( $M = 2.5 - 3.4$ ), and High knowledge ( $M \geq 3.5$ ). Research objective two was measured using Pearson Product Moment Correlation Coefficient to determine the relationships between respondents' knowledge of modern, natural and emergency contraceptives. and attitudes towards premarital sex at a significance level of 5%. For research objective three, one-way Analysis of Variance (ANOVA) was used to investigate differences in attitudes towards premarital sex between knowledge of modern, natural and emergency contraceptives. Data gathered from the two focus group discussions (teenage mothers, and pregnant teenagers) were analysed using thematic analysis to identify common themes to support the findings of the research objective one quantitative data. Some of the issues gathered from the focus group discussion were presented verbatim under the results section.

To ensure the integrity of the research, the researchers first sought approval to conduct the study from the Institutional Review Board of the University of Cape Coast (ID-UCCIRB/CoDE/2021/02). Second, participants were informed about the purpose, procedures, potential risks, and benefits of the study. Consent forms were also given to participants to indicate their willingness to participate the study. Third, participants were made to understand that participation in the study was voluntary and they have the freedom to withdraw at any point without facing any repercussions. Lastly, in order not to cause psychological harm to the interviewees of the focus group discussion, they were given post study counselling and encouraged to seek professional help if needed. Respondents were also provided with information on contraceptive knowledge and available mental health services.

## 4. Results and Discussion

### 4.1. Results

After cleansing the data collected for the quantitative analyses, 361 responses (translating into 99% of responses) were used for the analyses. Before analysing the main research questions, the sexual relationships of the respondents were explored. Two main questions were used, and the first question was to find out if respondents have a boy or a girlfriend. One hundred and six males out of 193, and 129 out of 168 females' responses used for the analyses responded in the affirmative. This shows that (76.8%) of females had boyfriends as compared to (54.9%) of males having girlfriends. The second question was to find out if respondents had ever involved in any premarital sex. Eighty-one and 62 of the male and female respondents respectively responded in the affirmative. This also revealed that 143(39.6%) of the participants had engaged in premarital sex prior to the collection of the data. Respondents age was within the age group 15-19.

#### 4.1.1. Research Objective One

The primary aim of research objective one was to assess the awareness of senior high school students regarding (modern, natural, and emergency) contraceptives. The mean and standard deviation analyses for the responses related to this research objective are detailed in Tables 1, 2, 3, and 4.

**Table 1. Adolescents Knowledge of Modern Contraceptive**

Statement	Mean	SD
Contraceptive use does not provide 100% protection from pregnancy	2.953	1.034
Pregnancy prevention can be done by both males and females	3.056	1.003
Contraceptive use is beneficial for couples for spacing pregnancies	3.068	1.005
Some contraceptive types can be taken orally	2.836	1.024
Some contraceptive types are in the form of injections	2.855	1.020
Intrauterine devices are types of contraceptives	2.839	1.039
Male condom is a type of contraceptive	2.979	1.023
Cervical cap is a form of contraceptive	2.594	1.016
Female condom is a type of contraceptive	2.958	1.016
Spermicides is a form of contraception	2.819	1.044
Implant is a form of contraceptive	2.706	0.999
Sterilization is a type of contraceptive	2.727	1.073
Condoms are not reusable	3.097	0.999
Sterilization is a permanent method of contraceptive	2.623	1.033
Injectable contraceptive is repeated once in every 1, 2 or 3 months	2.602	0.964
Intrauterine device is inserted in the womb	2.735	1.990
Implant is inserted in woman's arm for a period of 3 to 5 years to prevent pregnancy	2.483	1.110
Mean of means	2.660	1.081

The results in Table 1 indicate that “condoms are not reusable” recorded the highest mean [ $M = 3.097$ ,  $SD = 0.993$ ]. “Injectable contraceptive is repeated once every 1, 2 and 3 months” recorded the lowest mean [ $M = 2.602$ ,  $SD = 0.964$ ] however, the mean of means 2.660 and standard deviation 1.081 are skewed towards agreement of the knowledge of modern contraceptive.

To assess respondents' knowledge of natural contraceptive, responses on the six items used in measuring their knowledge on natural contraceptive are computed into Means and standard deviation as shown in Table 2.

**Table 2. Adolescents Knowledge of Natural Contraceptive**

Statement	Mean	SD
Pregnancy can be prevented naturally.	3.122	0.954
Pregnancy can be prevented without the use of medications and devices.	3.086	0.933
Certain times of the menstrual calendar are safe are safe for sex without getting pregnant.	3.219	0.905
A woman's menstrual cycle can be used to prevent pregnancy	3.142	0.892
The withdraw method is a type of contraceptive.	2.976	0.918
Exclusive breastfeeding for six months can prevent pregnancy.	2655	1.055
Mean of means	3.042	0.642

Results in Table 2 show “certain times of the menstrual calendar are safe for sex” has the highest mean [M= 3.219, SD = 0.905]. “Exclusive breastfeeding for six months can prevent pregnancy” recorded the lowest mean [M = 2.655, SD = 1.055]. The overall mean and standard deviation are 3.042 and 0.642 skewed towards agreement of the knowledge of natural contraceptives.

To assess respondents’ knowledge of emergency contraceptive, responses on the six items used in measuring their knowledge on emergency contraceptive are computed into Means and standard deviation as shown in Table 3.

**Table 3. Knowledge of Emergency Contraceptive**

Variable	Mean	SD
Emergency contraceptives can be used to prevent pregnancy after unprotected sex.	2.864	1.060
When emergency pill taken within 5 days of unprotected sex, can prevent pregnancy.	2.582	1.055
The sooner an emergency pill, the more effective it will be in preventing pregnancy.	2.658	0.966
Emergency pill cannot be used to replace a regular contraceptive.	2.763	1.001
Emergency pill make one experience her period earlier or later than usual.	2.836	0.985
Copper intrauterine device can serve as an emergency contraceptive.	2.706	1.057
<b>Mean of means</b>	<b>2.735</b>	<b>0.741</b>

Results in Table 3 show that “Emergency contraceptives can prevent pregnancy after unprotected sex” recorded the highest mean [M= 2.864, SD = 1.060]. “Emergency pill within 5 days of unprotected sex, can prevent pregnancy was identified as sixth [M = 2.582, SD = 1.055]. The mean of means and standard deviation are 2.735 and 0.741 skewed towards agreement of the knowledge of emergency contraceptive.

**Table 4. Adolescents' Overall Level of Knowledge on Modern, Natural and Emergency Contraceptives**

Contraceptive Type	Levels	Ratings	Frequency	Percentage
Modern	Low	1.0 – 2.4	87	24.1
	Moderate	2.5 – 3.4	100	27.7
	High	> 3.5	174	48.2
Natural	Low	1.0 – 2.4	106	29.4
	Moderate	2.5 – 3.4	29	8.0
	High	> 3.5	226	62.6
Emergency	Low	1.0 – 2.4	107	29.6
	Moderate	2.5 – 3.4	64	17.7
	High	> 3.5	190	52.6

Results in Table 4 show that respondents have high level of knowledge in natural contraceptive, followed by emergency and modern contraceptives. However, when moderate and high levels were put together, modern contraceptives, yielded the highest knowledge.

Insights into this viewpoint were extracted from the information gathered during the focus group discussion with teenage mothers and pregnant teenagers from the two schools sampled for the study to find out whether they had knowledge of contraceptives. Inquiries about awareness of contraceptives posed to the teenage mothers and pregnant teenagers, unveiled that a notable proportion were familiar with both condoms and contraceptive pills but the issue lies in their actual utilisation. Presented below are the responses reported by the teenage mothers and pregnant teenagers.

*“I am aware of condom, but the man I had sexual intercourse with opposed using it”.* (Pregnant teenager).

*“I am aware of condom, but I feel shy to purchase it even if I can afford”* (Teenage mother).

*“I know about the condom and the pills but I have never used them.”* (Pregnant teenager).

*“I know of contraceptives but I am aware that contraceptives have some side effects. I did not want to suffer the negative consequences of using contraceptives”* (Pregnant teenager)

*“I have no idea of contraceptives. It was my first time of having sex and I got pregnant. I was afraid to abort the baby so I gave birth”.* (Teenage mother)

*“I know of the safe period. I didn’t know I will get pregnant because I know the timing of the menstrual cycle was safe”.* (Teenage mother).

Asked if they have knowledge of female condom, only eight of the 17 interviewees who participated in the focus group discussion had knowledge on that. However, all interviewees had knowledge of the male condom.

The third question sought to understand the underlying reasons that drove individuals to participate in premarital sex. Although not directly aligned with the research objective, it was included to contribute depth to the discussion. The predominant themes identified were ignorance and the pursuit of financial and material gains

*"I had limited knowledge about sexual activity, and I was enticed into it by my friend". (Pregnant teenager).*

*"I stay with my aunt, who doesn't provide me with money to purchase sanitary pads for my menstrual needs. To address this, I engage in relationships with men who offer financial support for these necessities and other basic items" (Teenage mother).*

*"I lack nothing, but I engage in sexual activity simply for the enjoyment of it. I made a considerable effort to quit, but I couldn't succeed until I ended up getting pregnant." (Teenage mother).*

#### 4.1.2. Research Objective Two

The second research objective aimed to explore the link between adolescents' knowledge of contraceptives (modern, natural, and emergency) and their attitudes towards premarital sex. To address this objective, the initial step involved computing the means and standard deviations of respondents' responses to statements about premarital sex. Participants indicated their agreement using the options "either true of me" or "not true of me," with coding as 1 = not true of me and 2 = true of me. The findings are detailed in Table 5.

**Table 5. Respondents Attitude towards Premarital Sex**

Statement	Mean	SD
I like engaging in premarital sex	1.349	0.477
I like to have sexual relations before marriage	1.415	0.493
I enjoy breast fondling with the opposite sex	1.357	0.479
I enjoy sex play with the opposite sex	1.332	0.471
I desire oral-genital sex with the opposite sex	1.310	0.463
There is nothing wrong with having premarital sex for material things	1.360	0.480
I like having intimate kissing	1.465	0.499
I cherish casual kissing	1.446	0.497
I cherish petting without affection before marriage	1.307	0.462
I cherish sex without affection before marriage	1.360	0.480
I enjoy petting with little affection before marriage	1.313	0.464
I enjoy sex with little affection before marriage	1.396	0.489
I have no problem with premarital sexual intercourse	1.473	0.500
I will not scold my girl/boy for having sexual intercourse with many boys/girls	1.482	0.500
I enjoy sexual intercourse before marriage	1.368	0.483
I don't see anything wrong sleeping with married men/women for money	1.254	0.436
Mean of means	1.368	0.313

The mean and standard deviation for the overall attitude towards premarital sex were calculated as 1.368 and 0.313, respectively. These values suggest that respondents' general attitude exceeds the threshold of 1.1, indicating a predominantly negative stance towards premarital sex. The overall perspective of adolescents on premarital sex reveals that 32.1% hold a positive attitude, while 67.9% hold a negative one. Subsequently, the Pearson Product Moment Correlation coefficient was employed to examine the relationship between the variables, with the results presented in Table 6.

**Table 6. Correlation between Knowledge of Contraceptives and attitude towards Premarital Sex**

Variables	Attitude towards Premarital Sex		
	N	Pearson's Coefficient	P-Value
Knowledge of Modern Contraceptive	361	-0.127*	0.019
Knowledge of Natural Contraceptive	361	-0.091	0.095
Knowledge of Emergency Contraceptive	361	0.136*	0.013

\*Correlation is significant at 5% 2 tailed

The outcomes reported in Table 6 demonstrate that in terms of the correlation coefficient between adolescent knowledge of modern contraceptives and attitude toward premarital sex [N = 361, r = -0.127\*, p-value = 0.019], a significant negative relationship is evident. This indicates a substantial inverse link between adolescent knowledge of modern contraceptives and

their stance on premarital sex. Concerning the correlation coefficient for adolescent knowledge of natural contraceptives and attitude toward premarital sex [ $N = 361$ ,  $r = -0.091$ ,  $p\text{-value} = 0.095$ ], it suggests a negative relationship, although not statistically significant, between adolescent knowledge of natural contraceptives and their attitude toward premarital sex. Lastly, in the case of adolescent knowledge of emergency contraceptives and attitude toward premarital sex [ $N = 361$ ,  $r = 0.136^*$ ,  $p\text{-value} = 0.013$ ], a significant positive relationship is observed. This implies a noteworthy positive association between adolescent knowledge of emergency contraceptives and their attitude toward premarital sex.

#### 4.1.3. Research Objective Three

The third research objective sought to investigate whether there are variations in adolescents' knowledge of contraceptives (modern, natural, and emergency) and their attitudes toward premarital sex. A null hypothesis, which assumes that there will be no difference in adolescents' knowledge of contraceptives and attitudes toward premarital sex was formulated, and a One-way Analysis of Variance (ANOVA) was employed. The initial step involved conducting a descriptive statistic to gain insights into the data. It was revealed that, 130 demonstrated a higher level of knowledge about modern contraceptives, 204 exhibit heightened knowledge of natural contraceptives, and lastly, 148 respondents showcase advanced knowledge of emergency. The result in difference in knowledge and attitudes are shown in Table 7.

**Table 7. Analysis of Variance (ANOVA)**

Groups	Sum of Squares	Df	Mean Square	F	p-value
Between Groups	0.331	2	0.166	1.758	0.174
Within Groups	45.107	497	0.094		
Total	45.438	481			

Results in Table 7 show that from the F-statistic table, the p-value of the F-stat of 1.758 is 0.174. This is greater than 0.05, thus we failed to reject the null hypothesis which states that there will be no difference in the means of adolescent attitude towards premarital sex.

#### 4.2. Discussion

This study delved into how awareness of different contraceptive methods (modern, natural, and emergency contraceptives) influences attitudes toward pre-marital sex in the Asante Akim North District. The first research objective unveiled that the participants exhibited a substantial level of knowledge across all three contraceptive types, with the highest familiarity observed with natural contraceptives, followed by emergency and modern contraceptives. This discovery corresponds with prior research conducted by Arisukwu et al. (2020). Oppong et al. (2021) Tchokossa and Adeyemi (2018), and Sharma et al. (2021). In contrast to the findings of Oppong et al., and Arisukwu et al., the current study registered a heightened positive response regarding awareness of emergency contraceptives, whereas the former studies reported minimal awareness. The finding however, contradicts that of Muanda et al. (2018) who reported that adolescents had limited knowledge of contraceptive methods. The study further aimed to determine whether adolescent mothers and pregnant teenagers possess awareness of contraceptives and, if so, why they still experienced pregnancies. The qualitative findings indicated that while respondents have knowledge of contraceptives, the issue lies in their actual utilisation.

The second research objective sought to examine the relationship between adolescents' knowledge of contraceptives (modern, natural, and emergency) and their attitudes toward premarital sex. The study findings support that of Jose et al. (2019) where a weak positive connection was found between knowledge on contraceptives and attitude towards premarital sex, and also that of Zhou et al. (2012) where respondents have permissive attitudes towards premarital. However, the findings concur with Wong (2012), where no link was found between higher contraception and knowledge and attitudes towards premarital sex.

The third research objective sought to investigate whether there is a difference in adolescents' knowledge of contraceptives (modern, natural, and emergency) and attitude towards premarital sex. The findings indicate a significant positive effect of knowledge of emergency contraceptive on attitude toward pre-marital sex. That is, a high knowledge of emergency contraceptive leads to positive or permissive attitudes towards premarital sex. Similar to the findings of this study, Williams et al. (2021) found that higher knowledge of emergency contraceptive was associated with being older and being involved in sexual activities. This is also similar to study conducted by Ottesen et al. (2002) who found that adolescents who engage in sexual intercourse before marriage had high level of knowledge in emergency contraceptives. That is, an indication of positive attitudes towards premarital sex among adolescents with high knowledge of emergency contraceptive.

Lastly, the findings revealed that adolescents with enhanced knowledge of modern contraceptives tend to have lower scores in attitudes towards premarital sex compared to those with increased knowledge of natural and emergency contraceptives. This indicates that individuals with extensive knowledge of modern contraceptives are more likely to hold negative attitudes towards premarital sex when contrasted with their counterparts with advanced knowledge of natural and emergency contraceptives.

#### 4.3. Educational and Counselling Implications

Adolescents' contraceptive knowledge and attitude toward premarital sex have several implications. However, the present findings have educational and counselling implications. With regard to education, the Ministry of Education in collaboration with the Ghana Education Service should make conscious effort to integrate comprehensive sex education into the senior high school curriculum. This should cover diverse aspects of premarital sexuality, and information on choices of contraceptives and their related usage. Additionally, heads of senior high schools should promote activities like school-based debates that explore personal values and ethical considerations surrounding premarital sex.

In terms of counselling, school counsellors play a pivotal role in offering strategies to prevent unintended pregnancies by helping students in their decision-making process, and advocating for the responsible use of contraceptives. Thus, school counsellors should organise engaging guidance workshops to educate senior high school students about various contraceptive methods and their proper application. They should also empower students through supportive guidance sessions to help them make well-informed decisions about their sexual health.

Lastly, considering the risk of being infected with sexual transmitted diseases and HIV, it is imperative for counsellors to implement behavioural interventions that promote positive attitudes toward the use of condoms (especially, the female condom). Educating adolescents on the significance of consistently using condoms during sexual activity is essential, as it serves as the primary method for preventing both pregnancy and sexually transmitted diseases. As opined by Kanku and Mash (2010), teenage pregnancy and HIV/AIDS are vital issues that need special attention as the two are co-related. Christofides et al. (2014) affirm that early adolescent pregnancies increase the incidence of HIV.

## 5. Conclusion

In conclusion, the findings revealed that adolescent's knowledge of contraceptives is not associated with permissive attitudes towards premarital sex, rather high contraceptive knowledge is associated with negative attitudes towards premarital sex.

## 6. Recommendations

Based on the study findings, the following recommendations were made.

1. Heads of senior high schools should increase knowledge on available contraceptive methods especially that of emergency contraceptives to enable students to make informed decisions in the use of contraceptives.
2. Teachers and counsellors need to provide students with a comprehensive sex education with emphasis on effects of premarital sex as well as detailed information on contraceptives.
3. Parents should be educated through Parent-teacher associations to create conducive atmosphere in the home so that children can freely talk about sex without fear.
4. School counsellors, teachers and parents should address issues about sex in a non-judgmental manner so that students who have concerns can easily seek for help. In this manner, students will be able to get the right information to enable them make the right choices.

## 7. Limitations and Area for Future Study

The study's results revealed a diverse range of perspectives among respondents, as male and female students were not differentiated in the analysis. This lack of distinction may overlook gender-specific variations in attitudes between male and female respondents. To enhance the validity and depth of the findings, future research might consider conducting separate analyses for male and female participants.

### Declaration of Interest's Statement

The authors declare there is no conflict of interest.

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### Data Availability Statement

Data will be made available by the correspondent author on request.

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