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Assessing the Knowledge, Use and Perception of Contraceptives among Senior High School Students in the Kumbungu District of Northern Ghana

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Senior high school students are faced with several sexual and reproductive health challenges and make decisions and choices based on their knowledge and perceptions of available sexual and reproductive health services. The study, therefore, assessed the knowledge, use, and perception of contraceptives among senior high school students in the Kumbungu District of the Northern Region of Ghana.
Methods: We conducted a cross-sectional study involving 299 study participants through a multiple sampling approach comprising purposive, proportionate, and simple random sampling techniques. A pretested structured questionnaire was used to collect the data from the study participants. A descriptive and Pearson's chi-square analyses were performed.

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Results: The prevalence of contraceptive use was 23.2% with 55.9% of the study participants incorrectly defined contraceptives. The major source of information on contraceptives was from their peers (53.3%). Apart from condoms, knowledge on the remaining contraceptives methods was poorly understood by the participants. Common misperceptions on contraceptive use included infertility (50.0%), interference with sexual pleasure (37.9%), and promotion of promiscuity (32.3%). Statistically, we found significant differences between ever users of contraceptives and sex (*P< 0.001*) and religion (*P=0.026*). There was a significant difference between knowledge and perception (*P=0.010*).

Conclusion: The study findings describe a seemly poor knowledge and misconceptions on the use of contraceptives among study participants. This is likely to affect the usage of contraceptives among adolescents and students in the Kumbungu District with a resultant effect on the rise of teenage pregnancies. Addressing the poor knowledge and misconception by stakeholders, including the Ghana Health Services and other NGO's is therefore recommended.

Keywords: Knowledge; perception; contraceptives; adolescents.

1. INTRODUCTION

Appreciation of current sexual and reproductive health status in senior high schools might provide essential information that can be used to create and promote sexual and reproductive health rights. Most of the students in senior high schools are often described as adolescents and between the age group of 10-19 years [1]. However, some studies have reported age more than 19 years [2,3]. A countless number of young people are faced with sexual and reproductive health challenges including teenage pregnancy, unsafe abortion, sexual abuse, rape, and early marriage [4]. Incessantly, the risks of adverse pregnancy outcomes, childbirth, and sexually transmitted diseases have been reported among young people and associated mortalities. Relatively, multiple studies have reported large youthful populations in lower and middle income countries (LMICs) coupled with high proportions of unwanted pregnancy, sexually transmitted diseases, unsafe abortion, and early marriages [1,4,5]. Promoting and implementing sexual and reproductive health (SRH) policies among the youthful population especially in LMICs is essential. To address the increasing SRH issues in Ghana, many policies including the promotion of family planning was launched [6,7]. Despite the gains made in family planning in Ghana, contemporary studies report a universally unmet need for family planning [6-9]. Previous studies have reported a 30% prevalence of adolescent pregnancies in Ghana, and predominantly among females aged 15–19 years (14%) [8,10,11]. Regional assessment of adolescent pregnancy in Ghana showed a prevalence of 7.9% in the Northern Region and higher proportions in rural areas 17% of Ghana [12]. Proportion estimates of unmeet spacing and limiting in Ghana stand at 17.4% and 12.5% respectively. Comparatively, the respective proportions of spacing (21.7%) and limiting (6.1%) are higher and lower in the Northern Region of Ghana [7,12,13]. According to the 2017 Ghana Maternal Health Survey report, contraceptive use among sexually active unmarried women between 15-19 and 20-24 years was 35.6% and 48.8% [14]. Unfortunately, 2017 contraceptive use decreased compared to the 2014 (43.7% and 53.4%) [15] and 2008 (66.6% and 74.0%) [16] estimates.

Promoting contraceptive use would significantly address the unmet needs of family planning in Ghana, meet Sustainable Developmentment Goal 3.7 on sexual and reproductive health, which targets among others that, there should be universal access to contraceptive use for all ages by 2030 [17] and preserve the health and well-being of adolescents. But the question is; how do we increase contraceptive use to address the unmet needs of family planning among adolescents? Addressing the information needs on contraceptives among adolescents becomes critical to address the unmet needs of family planning. However, contraceptive-related information received by some adolescents is often inadequate, and inaccurate. A recent study conducted in the Northern Region highlighted a knowledge gap on ASRH. The study reported poor knowledge (67.6%), attitudes (77.7%), and practices (67.7%) towards sexual and reproductive health among in-school adolescents in the Tamale Metropolis [18]. Adolescents' major sources of information on family planning and contraception have often come from unskilled persons, including peers. This has become a major hindrance to the acceptability and usage of common modern contraceptives

[19]. Providing adolescents with the right information, and from the right persons, therefore, becomes essential to addressing major adolescent health challenges, especially in Sub-Saharan Africa, with 19.3% of adolescents becoming pregnant [20]. Some previous studies have demonstrated significant gains in contraceptive use and reported a universal knowledge, [7] nonetheless much is desired to address women and adolescent's health. Most existing programmes on contraceptive use in the northern parts of Ghana, including the Kumbungu District are on a pilot basis and are often initiated by non-governmental organizations (NGOs) [9], [21]. One major setback of the NGOs assisted programmes is the folding up of these programmes for lack of funds resulting in discontinuity. The Ghana Health Service has over the years been providing contraceptive services through family planning services, adolescents-friendly reproductive corners, sexual and reproductive health education in the study setting (Kumbugu District, Northern Region Ghana) [22]. Despite the increasing studies on contraceptives, no particular reference has been made to the Kumbungu District and especially among in school populations. The study was aimed at providing essential data that could influence and support health education and promotional programmes on contraceptive. The current study therefore assessed adolescents' knowledge, use and perception on contraceptives in the Kumbungu District of the Northern Region of Ghana.

2. MATERIALS AND METHODS

2.1 Study Setting

The study was conducted among students of Kumbungu Senior High School in the Kumbungu District in the Northern Region, Ghana. The Kumbungu Senior High School is a mixed school, comprising both male and female students. The school is the only district senior high school and runs programmes in the sciences and humanities. The school currently has an estimated student population of 3,761.

The current population and housing census in the Kumbungu District estimated the population of 10-19 years to be 7,961 [23]. The district is one of the districts in the Northern Region with five sub-districts and shares boundaries with Tamale Metro to the South, West Mamprusi, and West Gonja to the North, Savelugu/Nanton municipality in the East and Tolon district to the West respectively [24].

2.2 Study Design

A cross-sectional study using a multiple sampling approach comprising purposive, proportionate, and simple random sampling techniques was used. The purposive sampling technique was employed to select the Kumbungu Senior High School. The school was selected because it was in the district capital, Kumbungu and therefore would have diverse groups of students. This facilitated the solicitation of information on contraceptives from different perspectives and socio-cultural backgrounds. The proportionate sampling was employed to apportion the number of participants needed from each level, thus the year group. The simple random sampling technique was subsequently used to select the various classes among the various levels, thus, first year and third year senior high school students, and potential participants. The simple random technique was performed through the drawing of a card without replacing it. The cards had a Yes and No inscription. A student who randomly picks a yes is selected to attempt items on the questionnaire and a no was excluded from participating in the study.

2.3 Study Participants, Selection and Rejection Criteria

The main study participants were first- and third-year students of Kumbungu Senior High School. Second year students were not included in the study because they were not in school at the time, we conducted this study. Ghana currently runs a double-track educational system, which only allows two different year batches of students on campus. This accounted for our inability to include the second-year students. The selection criteria included both male and female students, who are well and agreed to participate in the study. Participants were excluded if they refused to consent to participate in the study. School teachers served as surrogates and consented on behalf of students below the age of 18years after researchers explained the study rationale, benefits, potential risks and assurance of confidentiality to them.

2.4 Sample Size Determination

Cochran's (1977) sample size formula was used to estimate the sample size. Using a confidence interval of 95% with a marginal error of 5%, (alpha level of 0.05) with an equivalent Z-value of 1.96, and prevalence of contraceptives use 23% [23], the estimated sample size was 272.

$$n = \frac{z^2 p(1-p)}{m^2}$$

n= Sample size; Z= Z-score of the confidence level (1.96); P= Prevalence rate of the use of contraceptives (23%) = 0.23; m= Marginal error (5%) = 0.05.

Therefore, substituting the values into the formula above gives the following.

$$n=\frac{1.96\text{^}2x0.23(1-0.23)}{0.05\text{^}2}$$

$$n=\frac{1.96x0.23x0.77}{0.0025}$$

n=272

To allow for attrition or dropout, a 10% attrition rate was computed;

$$\left(\frac{10}{100}\right)x272 \approx 27$$

Therefore, the estimated sample size was (272+27) = **299.0**

2.5 Data Collection Procedure

The data was collected through the use of a pretested structured questionnaire, after a careful review of relevant literature [10], [12] [25–30]. The questionnaire involved close and open-ended types of questions. The questionnaire included items on sociodemographic characteristics, knowledge on contraceptives, use, and perceptions towards contraceptives.

To collect the data, study participants were randomly from each of the classes till the required number of participants was reached. The questionnaire was explained to study participants where necessary. During the data collection process, the questionnaire was distributed among the various classes by using probability proportionate size determination.

The number of students for the first-year and third-year was determined by dividing the respective class size by the total number of students in the first and third years and multiplying the proportion by the study sample size. The class size for the first and third year student's population were 1648 and 713 respectively, the total number of the students was 2361, and a sample size of 299. Therefore, by applying the formula, the first and third years were allocated 209 and 90 participants respectively.

2.6 Data Analysis

Overall, 299 questionnaires were administered among the study participants out of which 272 questionnaires were considered for data analysis after checking completeness and validation. A simple descriptive and Pearson's chi-square analysis were performed. The data summary was represented using frequencies, percentages, tables, and charts. A P-value of < 0.05 was considered significant for the test of association. All data entries and management were conducted using the Statistical Package for the Social Sciences software (SPSS) version 20.0 for Windows (SPSS Inc., Chicago).

3. RESULTS

3.1 Sociodemographic Characteristics of Participants

Participant's ages ranged between ≤15 - 27 years and a mean age of 18 years (Sd: ±2.35). The majority (n= 144, 52.9%) of the study participants were in the 16-19 age categories. Male participants constituted the majority (n=138, 50.7%) with Muslims accounting for 86.8% (n=236) of the study participants as shown in Table 1.

3.2 Knowledge on Contraceptives

The majority of the study participants (n=182, 66.9%) had some knowledge about contraceptives and their major source of information about contraceptives was from peers (n=73, 40.1%). More than half of the study participants (n=152, 55.9%) incorrectly defined contraceptives with only 44.1% (n=120) able to correctly defined contraceptives to include drugs/medicines/devices used to prevent pregnancy and/or for family planning. On knowledge about the common contraceptive methods, 57.7% (n=157) of the study participants indicated knowledge of only one method, with 12.5% (n=34) of study participants indicating knowledge of at least four contraceptive methods. The male condom was the common (n=176, 64.7%) known contraceptive as shown in Table 2a, 2b.

3.3 Prevalence of Contraceptive Use

The prevalence of contraceptive use was 23.2% (n=63) and none use of contraceptives was 76.8% (n=209). Current contraceptive use among ever used contraceptives was 73.0%

(n=46) and non-users was 27.0% (n=17) as shown in Figs. 1 and 2.

3.4 Commonly Used Contraceptives among Study Participants

The male condom was the most commonly used method of contraceptive 63.5% (n=40). Other commonly used contraceptives included, injection (n= 9, 14.3%), natural method (n=6, 9.5%) and female condom (n= 4, 6.3%) as shown in Table 3.

3.5 Perception about Contraception use among Study Participants

In terms of perception regarding utilization of contraceptives, 41.9% (n=114) and 30.5% (n=83) agreed and strongly agreed respectively that there is nothing wrong with adolescents using contraceptives. About 37.9% (n=103) and 17.6% (n=48) agreed and strongly agreed that contraceptives interfere with sexual pleasure. Whilst 32.4% (n=88) agreed contraceptives promote promiscuity, about 37.9% (n=103) also disagreed. The findings equally showed that half (n=136, 50%) of the study participants agreed that contraceptives cause infertility with 29.0% (n=79) also indicating that contraceptives are made for married individuals as shown in Table 4.

In terms of perception regarding utilization of contraceptives, the majority of participants at least agreed that there is nothing wrong with adolescents using contraceptives (n=197; 72.4%), however, more than half of the participants indicated that contraceptives interfere with sexual pleasure (n=151, 55.5%). The majority of participants at least disagreed that contraceptives promote promiscuity (n=149, 54.8%). The findings equally showed that more than half of the study participants agreed that contraceptives cause infertility (n=201, 73.9%) with 47.0% (n=128) also indicating that contraceptives are made for married individuals as shown in Table 4.

3.6 Barriers to the Use of Contraceptives among Study Participants

Common barriers to contraceptive use among study participants included fear of stigmatization (n=124, 45.6%), difficulty using contraceptives (42.3%), scaring attitudes of healthcare workers (n=110, 40.4%), cultural or religious reasons (n=97, 35.7%), difficulty in accessing contraceptives (n=82, 30.1%) and cost of contraceptives (n=67, 24.6%) as shown in Table 5.

3.7 Sociodemographic Characteristics and the Use of Contraceptives among Study Participants

There was a statistical difference between, sex (*P<0.001*) religion, and contraceptive use (*P=0.026*) with contraceptive use. Males were more common users of contraceptives (n=45, 32.6%) compared to their female counterparts (n= 18, 13.4%) as shown in Table 6.

Table 1. Socio-demographic characteristics

Variable	Frequency	Percentage
Age	**Mean =18 (SD ±2.35)**	
≤15	40	14.7
16 - 19	144	52.9
20 - 23	80	29.4
24 - 26	6	2.2
27+	2	0.7
Gender		
Male	138	50.7
Female	134	49.3
Religion		
Christianity	33	12.1
Muslim	236	86.8
Traditional	3	1.1
Programme		
General Science	53	19.5
General Arts	128	47.1
Agriculture Science	35	12.9
Business	23	8.5
Home economics	33	12.1
Total	**272**	**100**

Table 2a. General Knowledge on contraceptives

Variable	Frequency(n)	Percent (%)
Do you know about contraceptives?		
Yes	182	66.9
No	90	33.1
Source of information (for yes response)		
Media	40	22.0
Relatives	14	7.7
Clinic/health staff	55	30.2
Peers	73	40.1
Definition of contraceptives		
Contraceptives refer to drugs/medicines/devices used to prevent unwanted pregnancy and/or STIs	120	44.1
It refers to methods only used to prevent diseases	66	24.3
It is a method used by women to prevent pregnancy	86	31.6
Total	**272**	**100.0**
Number of contraceptives known		
One	157	57.7
Two	48	17.6
Three	33	12.1
Four and above	34	12.5
Total	**272**	**100.0**

Table 2b. Knowledge on the methods of contraceptives

Variables	Yes n(%)	No n(%)
Contraceptive pills	59 (21.7)	213 (78.3)
Injection	78 (28.7)	194 (71.3)
Male Condom	176 (64.7)	96 (35.3)
IUDS	9 (3.3)	263 (96.7)
Rhythm method	17 (6.3)	255 (93.8)
Implant	14 (5.1)	258 (94.9)
Male sterilization	17 (6.3)	255 (93.8)
Spermicides	9 (3.3)	263 (96.7)
Diaphragm	7 (2.6)	265 (97.4)
Emergency contraceptives	8 (2.9)	264 (97.1)
Female sterilization	7 (2.6)	265 (97.4)
Cervical mucous method	22 (8.1)	250 (91.9)
Female condom	59 (21.7)	213 (78.3)
Withdrawal method	21 (7.7)	251 (92.3)

Multiple responses allowed

3.8 Relationship between Knowledge and Perception

There was a significant difference between contraception knowledge level of adolescents and their perception about the use of contraceptives (*P=0.010*) as shown in Table 7.

4. DISCUSSION

Our study found age 16-19 as the majority and consistent with the findings of a similar study [31] in the Ashanti region of Ghana. Our study included both males and females, which is in contrast to a similar study in Korle-Gono in the Greater Accra Region of Ghana that only considered the perspectives of female adolescents on contraceptives [32]. Our study, therefore, discusses important findings of contraceptives use from the perspectives of both genders. It was obvious that Muslims constituted the majority of study participants, as the northern parts of Ghana are dominated by the Islamic religion. Other studies on contraceptive use in the northern part of Ghana, reported Muslim dominance [33], [34]. It is, therefore, important to consider key religious groups including the Islamic religion and other minority religious

groups in the Kumbungu District and the northern parts of Ghana as stakeholders in the design of family planning and contraceptive services. Past literature has extensively discussed the role of religion and health, including the use of contraceptives [34].

The majority of our study participants have heard about contraceptives with common sources of information comprised of peers, clinic/health staff, and relatives. Our study finding is inconsistent with reports in a similar study with all participants indicating they have heard about contraceptives and common information sources to include television broadcast and internet, school, and family members [35]. The source of information on health-related issues including contraceptives affects the adequacy and accuracy. As explained by Betancourt et al. [36], information source has been a hindrance to the acceptability and usage of common modern contraceptive as some of the information are often inaccurate and full of misconceptions. This may explain why most of the study participants in our study incorrectly defined contraceptives as the major source of information was among their peers. This places emphasis on providing information on contraceptives from the right sources such as from healthcare workers, and the development of a robust School Health Education Programme (SHEP) to address sexual and reproductive health issues in school.

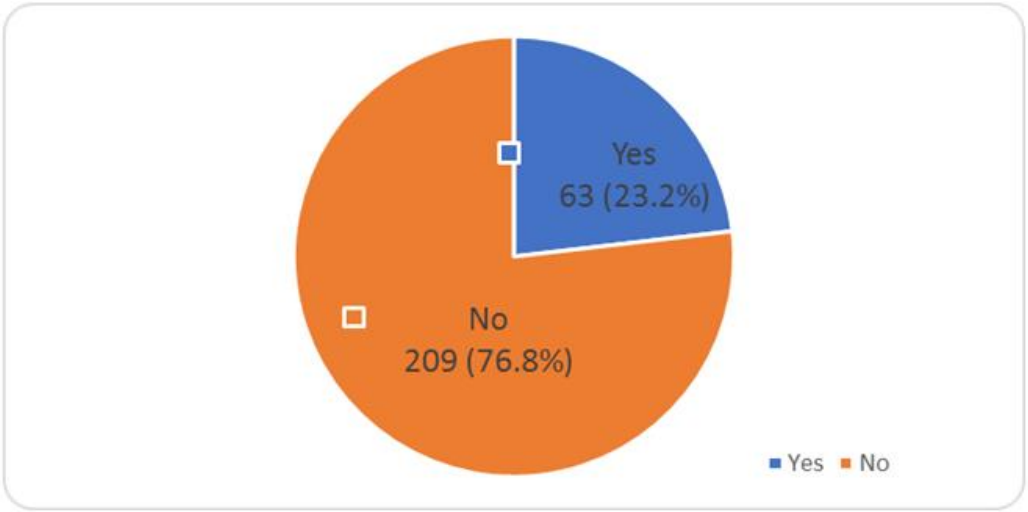

Fig. 1. Prevalence of contraceptive use among study participants

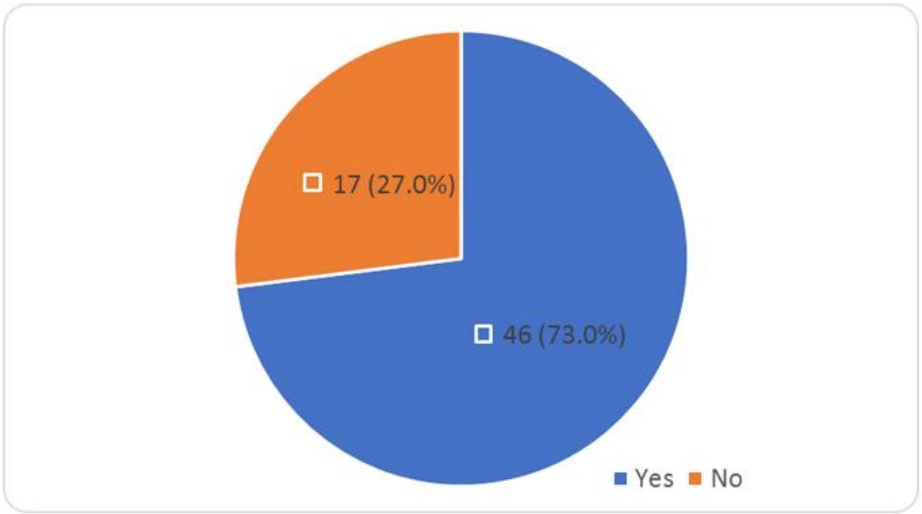

Fig. 2. Current Contraceptive use among previous users

Table 3. Common contraceptives used by participants

Variables	Yes n(%)	No n(%)
Contraceptive pills	5 (7.9)	58 (92.1)
Injection	9 (14.3)	54 (85.7)
Male condom	40 (63.5)	23 (36.5)
IUDS	1 (1.6)	62 (98.4)
Rhythm method	0 (0.0)	63 (100.0)
Implant	2 (3.2)	61 (96.8)
Male sterilization	0 (0.0)	63 (100.0)
Spermicides	0 (0.0)	63 (100.0)
Diaphragm	1 (1.6)	62 (98.4)
Emergency contraceptives	3 (4.8)	60 (95.2)
Cervical mucous method	6 (9.5)	57 (90.5)
Female condom	4 (6.3)	59 (93.7)
Withdrawal method	3 (4.8)	60 (95.2)

(Multiple responses were allowed)

Table 4. Perception about contraception use

Variable	Strongly agree n(%)	Agree n(%)	Disagree n(%)	Strongly disagree n(%)
There is nothing wrong with the use of contraceptives	83 (30.5)	114 (41.9)	45 (16.5)	30 (11.0)
Contraceptives interferes with sexual pleasure	48 (17.6)	103 (37.9)	62 (22.8)	59 (21.7)
Contraceptives promote promiscuity	35 (12.9)	88 (32.4)	103(37.9)	46 (16.9)
Contraceptives can cause infertility	65 (23.9)	136 (50.0)	38 (14.0)	33 (12.1)
Only married people should use contraceptives	49 (18.0)	79 (29.0)	75 (27.6)	69 (25.4)

Table 5. Barriers to the use of contraceptives

Variables	Responses	
	Yes n(%)	No n(%)
Do you have a problem accessing contraceptives?	82 (30.1)	190 (69.9)
Do you find buying contraceptives costly?	67 (24.6)	205 (75.4)
Does stigmatization stop you from using contraceptives?	124 (45.6)	148 (54.4)
Does your culture/religion support the use of contraceptives?	97 (35.7)	175 (64.3)
Do you find difficulty or problems using contraceptives?	115 (42.3)	157 (57.7)
Do health workers scare you in assessing contraceptives?	110 (40.4)	162 (59.6)

The prevalence (both previous and current users) of contraceptive usage was almost the same with the prevalence in a related study in Cape Coast, Central region of Ghana [37]. However, Boamah et al. [38] reported a higher prevalence rate of contraceptive usage among adolescents in Kintampo in the Bono-East Region of Ghana. The differences can partially be attributed to the varying sample sizes and other environmental factors. Comparing the prevalence of contraceptive use (23.2%) to current users of contraceptives 73.0% (46/63), there is a significant reduction in contraceptive use. The commonly used contraceptive was the male condom, together with others including injection, natural method, and the female condom. [37]–[39] It is therefore important to encourage and educate adolescents on the proper use of available contraceptives. Nonetheless, the encouragement and education on the use of contraceptives would not be effective without addressing misconceptions and barriers to contraceptive use raised by participants in our current study and as described

elsewhere [37]. Common misperceptions indicated by our study participants comprised the tendency of contraceptives interfering with sexual pleasure, promotion of promiscuity, causes infertility and contraceptives should be predominantly used among married individuals. These findings, including contraceptives causing infertility and should be used by married individuals, were also reported by Buxton [37]. The focus of health education programmes on contraceptive services should be designed to address these misconceptions. If left unaddressed, will linger on and spread among adolescents as has been established in this study and others elsewhere, adolescents are the source of information among themselves [35], [37].

Common barriers to contraceptive use among our study participants comprised cultural or religious reasons, fear of stigmatization, difficulty using contraceptives, scaring attitudes of healthcare workers, problems in accessing contraceptives, and cost of contraceptives. Some previous studies have written extensively on the barriers to contraceptive use [10][38]. For example, some previous studies asserted that stigmatisation against females as being called a "bad girl" has been a major challenge for females to acquire contraceptives [2], [38], [40]. Agyemang et al. [31] equally found that cultural beliefs and cost were important barriers to contraceptive use. Ahanonu (2014) also reported poor attitudes of healthcare workers towards the provision of contraceptives to unmarried adolescents as a hindrance to the use of contraceptives. Addressing these barriers would necessitate a holistic approach, from the sociocultural, service providers, and cost perspectives. Statistically, our study revealed significant differences between sex, religion, and contraceptives. These significances emphasise the role of gender and religion in the acceptability and use of contraceptives. Other studies including Boamah et al. [38] reported a statistical difference between sex, religion, and contraceptive use. Similarly, Ngoc et al. [37] observed a significant difference between sex and contraceptive use but not religion. There exists a gender difference in the uptake and use of contraceptives. Some previous studies have explained that determinants such as individual and family influences are important predictors of contraceptive use among males, whereas partner and relationship factors are key determinants of contraceptive use among females [41]. There was a significant difference between contraception knowledge level and perception of contraceptive use. This suggests that an increase in the level of knowledge on contraceptives among adolescents could address the increasing teenage pregnancy.

Table 6. Association between sociodemographic characteristics and the use of contraceptives

Sociodemographic		Ever users of contraceptives		
Characteristics	**Total**	**Yes n(%)**	**No n(%)**	**X^2, P-value**
Age				
12-15	40	8 (20.0)	32 (80.0)	
16 - 19	144	31 (21.5)	113 (78.5)	X^2=2.590
20 - 23	80	23 (28.8)	57 (71.3)	P-value=0.629
24 - 26	6	1 (16.7)	5 (83.3)	
27+	2	0 (0.0)	2 (100.0)	
Sex				X^2=14.05
Male	138	45 (32.6)	96 (67.4)	P-value<0.001*
Female	134	18 (13.4)	116 (86.6)	
Religion				
Christian	33	2 (6.1)	31 (93.9)	X^2=7.28
Islam	236	61 (25.8)	175 (74.)	P-value=0.026*
Traditional	3	0 (0.0)	3 (100.0)	
Total	**272**	**63(100.0)**	**209 (100.0)**	

*Note: X^2 denotes Chi-square value, * significant value*

Table 7. Association between high school students' knowledge and perception towards the use of contraceptive methods

		Knowledge of the respondent about contraceptive methods		
Perception	**Total**	**Knowledgeable n(%)**	**Not knowledgeable n(%)**	**X^2, P-value**
Good perception	232	3 (1.3)	229 (98.7)	X^2=10.32
Bad perception	40	4 (10.0)	36 (90.0)	P-value=0.010*

5. CONCLUSION

The study findings described a relatively low contraceptive use and a seemly poor knowledge and misconceptions on the use of contraceptives among study participants. This is likely to affect the usage of contraceptives among adolescents and students in the Kumbugu District with a resultant effect on the rise of teenage pregnancies and other sexually transmitted infections. Addressing the poor knowledge, and misconception and barriers to contraceptive use in the district by local stakeholders, including the Ghana Health Services, health facilities, Ghana Education Service, and other NGO's is therefore recommended.

6. LIMITATION OF THE STUDY

The study was mainly conducted among students of Kumbungu Senior High School in the Kumbungu District, in the Northern Region of Ghana, and did not extend to other schools in the district and the Northern Region. The result may not reflect the general outlook of contraceptive use among adolescents in the Region.

CONSENT AND ETHICAL APPROVAL

Permission to conduct the study was approved by the School of Nursing and Midwifery, District Director of Education, Kumbungu District, and the Headmaster of the Kumbungu Senior High School. The study was conducted with strict adherence to the provisions of Helsinki's Declaration on ethical principles for human research [42]. Informed consent was sought from all the participants through a dialogue, during which each participant was informed of the purpose of the study and assured of their confidentiality and anonymity. Where the participant was below age 18 years, school teachers served as a surrogate to consent. Participating in the study was strictly voluntary and participants were at liberty to withdraw from the study or decide not to answer any specific questions if they felt uncomfortable during the data collection process without any consequences.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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