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Contraceptive Use among Senior High School Students at Cape Coast Metropolis in the Central Region of Ghana: A Cross Sectional Survey

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Abstract

Background: Contraceptive knowledge and use among adolescents across a number of developing countries reveals some unexpected regional patterns in sexual activity and marriage in the majority of the countries. The purpose of the study was to examine contraceptive use among senior high school students in the Cape Coast metropolis in the central region of Ghana.

Methods: The study design was a cross-sectional survey. Four hundred students were selected from three senior high schools through the multi-stage sampling method. Self-administered structured questionnaire was used to collect the data. Cross tabulations and *Chi-square* were statistical techniques used to analyse the data. Data collected were processed using SPSS version 21.

Results: Four hundred students were sampled for the study. Majority of the students were in form two (51%), 15-19 years (84.7%), male (51.7%), christians (96.5%) and were living with both parents (70.5%). About 73% of their fathers had tertiary level education. Fifty five percent of all the respondents were taught about contraceptives in class. Among those who had ever had sexual intercourse, 25% of them used contraception the last time they had sexual intercourse. Seventy seven percent of the females and 59% of the males used condom. Fifty six percent of the females and 47% of the males got the contraceptives from the pharmacy or chemical shop. From the *Chi square* analysis, form (p=0.001), sex (p=0.000) and level of fathers education (0.000) were statistically significant to the use the contraceptives among the students.

Conclusion: Most of these sexually active senior high school students do not use contraception during sexual intercourse. The implication is that these students are at risk of contracting STIs as well as exposed to the risk of unplanned pregnancy which can lead to abortion and or school dropout. Youth friendly health services must be provided at places that will be accessible them. To facilities and safe spaces should be created for adolescents in order to improve access to SRH services for them.

Keywords: Adolescents; Condom; Contraceptive; Students; Ghana

Abbreviations: GHS: Ghana Health Service; STI: Sexually Transmitted Infections; WHO: World Health Organization; SRH: Sexual Reproductive Health; HIV: Human Immunodeficiency Virus; AIDS: Acquired Immune-Deficiency Virus

Introduction

Contraceptives are devices or methods for preventing pregnancy by either preventing the fertilization of female egg by a male sperm or preventing implantation of fertilized egg. Contraception involves one or more actions, devices, sexual practices or medications followed to intentionally prevent or reduce the likelihood of pregnancy or childbirth. With the advancement of scientific knowledge, the traditional based methods such as the separation of husband from wife after delivery, herbal enemas, prolonged breastfeeding, coitus interfermoralis, among others, give way to practical proven methods of preventing fertility. Some of which are injectables, implants and mechanical barriers [1].

Contraceptive knowledge and use among adolescents across a number of developing countries in Africa, Asia and Latin America reveals some unexpected regional patterns in sexual activity and marriage in the majority of countries. A greater tendency for contraceptive use among adolescents which result in method discontinuation is due to failure or side effects that leave the user in need of a method. In spite of this high level of knowledge, contraceptive use remain low with 22% of all women using any method and only 5% of men relying on a modern method. Countries for which contraceptive knowledge have been studied, the majority of adolescent women recognize at least one contraceptive method and in 21 countries, eight in ten or more young women know about at least one method. Greater variability is found in the levels of knowledge among adolescent women in sub-Saharan African than in the other regions. Levels are low in Madagascar and Nigeria, where fewer than half of all teens know about any method and highest in Kenya, Rwanda and Zimbabwe where at least 90% have knowledge about contraceptives based on reproductive health surveys conducted by local institutions with technical assistance from the centres for disease control prevention [2].

In Africa, current use of contraceptive is much higher among adolescent males than females in some countries. For males, it ranges from 7.2% in Zambia to 24.5% in Kenya. Among females, the predominant contraceptive method used in Zambia is the condom while in Kenya and Tanzania it is the pill. The most predominant method used by males in all the four countries is condom. Adolescents indulgence in unsafe sexual activities is on the increase as sex plays an important role in their feelings, fantasies and social relationships. Many teenage pregnancies are the result of inadequate or no contraception. One factor contributing to the high rate of teenage pregnancies and births is the relatively low level of contraceptive use. Less than half of all adolescents regularly use some form of contraceptive. Reports are adolescents believe that condoms are unnatural. They reduce pleasure or sensation, meaning they do not get the desired satisfaction since it is artificial. Another key concern in considering contraceptive use pattern among adolescents is the extent to which sexually active, unmarried ones use contraceptive methods. The level of current use is frequently higher among married teenagers. There are many brands of oral contraception used throughout the world that generally contain both synthetic oestrogen and progesterone. Condom was the most reported method known (77% of males and 66% of females knew the method). Vaginal foaming tablets, secure pills (oral contraceptives), withdrawal and vasectomy have variously been acknowledged by adolescents as some types of contraceptive or birth control mechanisms [3].

A study conducted among university student revealed that more than 90% of adolescents admitted having heard of modern method of contraceptives such as condom, the pill and vasectomy. Natural methods such as withdrawal, calendar or rhythmic method and abstinence were scarcely acknowledged. Consistent with the knowledge patterns, condoms were the most known and used contraceptive among the adolescents. Use of condom is inconsistent and they were at best selectively used to prevent pregnancies than Sexually Transmitted Infections (STIs).

Sex plays an important role in adolescent feelings and social relationships. Many teenage pregnancies are results of inadequate or no contraception. Many teenagers do not use contraceptives the first time they have sex and many, particularly younger adolescents, delay for a year or more after first intercourse before using contraceptive. Most teenagers also believe that contraceptives can guard against unwanted pregnancies, yet the sexually active ones do not use contraceptives. Adolescents' inability to access contraceptive is as a result of socio-cultural factors that serve as a disincentive for them to patronize contraceptive use as has been mentioned earlier. Misconceptions about the risks of contraceptive methods, fear of the pelvic exam and concerns about confidentiality keep many teenagers from seeking advice from their physicians. Better communication with adolescents within families, at school and within the medical system can help them overcome these barriers. Clinicians usually don't bring up the issues of sexually transmitted diseases and contraception but these are subjects that most teens would like to discuss with their providers. Adolescents will discuss their sexuality and contraceptive needs with their physician if they know that these discussions are confidential. In some countries, unmarried teens are denied access to contraceptive services and information, leaving them without support when making reproductive health decisions.

Economic, social inequality and age disparity between partners can create a situation of unequal power within relationships which can in turn, reduce girls ability to negotiate whether intercourse should take place and whether condom or contraceptives should be used. In many instances, the threat of male violence also puts pressure on teenage girls to acquiesce to unsafe sexual practice. Adolescents find talking about sex with parents and adult family members uncomfortable or impossible therefore, peers often constitute the reference group for transmitting information about sexual activity and birth control. The objectives of family planning programmes are to provide information, education and counseling to individuals and couples to enable them decide freely and responsibly the number and spacing of their children and to provide affordable contraceptive services and make available a full range of safe and effective methods of contraceptives usage. By reducing unintended pregnancies and abortions and facilitating family planning, effective contraception provides both health and social benefits to mothers and their children. Contraception is an important factor in the sexual and reproductive life of an individual. Utilization of contraception differs based on varying needs and stages of life continuum of not only women in their reproductive age group, but also for men.

A report from the 2014 Ghana demographic and health survey indicated that irregular use of contraceptives is common with adolescents because of poor communication with parents, lack of knowledge of parental contraceptive experience, experience of friends who become parents, low educational achievement and aspirations, low self-esteem and feelings of fatalism and alienation. The traditional and cultural stereotyped idea that sex is for the adult makes it practically difficult for adolescents to freely communicate and discuss with parents issues concerning sex and contraception use. Similarly, because of the stereotyped idea that family planning clinics are the domain of women, counselors lack experience in conveying information on sexuality and contraception to men.

In Ghana, although the proportion of adolescents reporting the use of condoms at first and at most recent sexual intercourse has increased over the last years, quite a number still report not using them at all. Reasons given for non-use are, for example, that they are difficult to use for sexually inexperienced, are embarrassing to suggest and are too expensive to buy on a regular basis. The prevalence of unprotected first sexual intercourse among young people in Sweden is steadily increasing, particularly among females aged 16-19 years: It went up from about 12% in 2000 to 22% in 2007. When condoms are used, then this is done primarily as a protection against pregnancy and not STIs and their use becomes irregular when other contraceptives are used. Use of condom was investigated amongst vocational students in Thailand and condom use amongst the students was low. Seven percent of the students had contracted sexually transmitted diseases. One third of the participants who stated that they

never used condoms claimed there was no risk of them contracting an STI. The deaths of girls between ages 15-19 years worldwide are related to pregnancy and diseases and account for 70,000 deaths each year. Making contraceptive services available to individuals may therefore contribute to the reduction of deaths. The study therefore assessed the level of contraceptive use among senior high school students at Cape Coast metropolis in the central region of Ghana [4].

Objectives

The objectives of the study were to:

- Assess contraceptive knowledge and use among senior high school students at Cape Coast metropolis in the central region of Ghana.
- Determine the influence of background characteristics on contraceptive use among senior high school students at Cape Coast metropolis in the central region of Ghana.

Materials and Methods

Research design

The study was a descriptive cross-sectional survey that quantitatively explored the level of contraceptive use among senior high school students at Cape Coast metropolis in the central region of Ghana. The design enabled the study to describe the characteristics of the students surveyed and their perspectives on the research questions posed [5].

Study area

The study was conducted at the Cape Coast metropolis. Cape Coast is located on latitudes 50°07 north and 50°20 north and between longitudes 1°11 west and 1°41 west. The metropolis is bounded to the west by the komenda-edina-eguafo-abrem municipality, to the east by the Abura-Asebu-Kwamankese district, to the north by the twifu/hemang/lower Denkyira district and to the south by the Gulf of Guinea. There are 84 communities in the metropolis which covers an area of 122 square kilometers. The metropolis has various schools which correspond to the three-tier educational system in Ghana. These are basic education schools (or first cycle institutions) comprising kindergarten, primary and Junior High Schools (JHS); second cycle institutions (senior high, commercial and technical) and tertiary institutions (universities and specialist colleges or diploma awarding institutions (colleges of education and nurses training colleges)). The metropolis has four education circuits. These are Cape Coast zone (eastern including ekon), aboom zone (Cape Coast central) and Bakaano zone (Cape Coast west stretching up to the university and pedu zone (Cape Coast north).

The Cape Coast metropolis is recognized nationwide as the focal point of Ghana's secondary education. Cape Coast since the colonial era has been the hub of secondary education in Ghana, priding itself on being the custodian of some of the best and most prestigious schools and has since attracted the cream of school graduates. The secondary schools in the metropolis country are Wesley Girls' high school, St. Augustine's college, Mfantsipim school, Adisadel college, Ghana national college and Holy Child senior high school. Hence, the metropolis was selected for this research [6].

Study population

The population of the study consisted of the students between 10-19 years from form one to form three in the 10 government assisted senior high schools in the Cape Coast metropolis. Both boarding and day students were included in the study. The schools are St. Augustine' college, Mfantsipim school, Wesley Girls high school, Holy Child Girls school, Adisadel college, Ghana national college, academy of christ the king, Oguaa secondary technical school and Aggrey memorial AME Zion secondary school. Males and females in three selected Senior High Schools (SHS) in the Cape Coast metropolis were included. The form three students were excluded because they were writing their final examination during the data collection. Again, students above 19 years were also excluded from the study [7].

Variables

Dependent variable: Contraceptive use.

Independent variable:

- Contraceptive knowledge-nominal
- Background characteristics-continuous nominal and ordinal

Sample and sampling procedure

Sample size: Four hundred students were estimated and sampled from the target population. Sample size estimation was done to determine the sample size for the study using the formular $n=N/1+N(e)^2$ Yemane. Where n is sample size, N is total population and e is confidence level/margin of error. A 5% confidence level/margin of error was chosen. Therefore;

$n=4241/1+4241(0.05)^2$ $n=4241/4242 \times 0.0025=4241/10.605 =400$

The senior high schools in the Cape Coast metropolis were categorized into female only, male only and mixed schools. One school was selected through simple random sampling. Stratified sampling was used to select respondents from the schools that were selected from among the 10 senior high schools in the metropolis. Students from private schools were excluded from the study. And form three students were also excluded because they were not available on campus at the period of the data collection [8].

Sampling procedure

There were 10 government assisted SHSs in the Cape Coast metropolis at the time of the study. Multi-stage sampling was adopted in the selection of respondents. First the schools were classified into three strata; single sex (male), single sex (female) and mixed schools. Three schools were then randomly selected from the clusters; one from each cluster, mixed, female and male.

After the three schools were selected, stratified sampling was again adopted to select the students that were included in the study. To achieve this, the school registers were used as the sample frame. Each school was divided into two strata (forms one and two); form three students had graduated at the time of data collection for the study. Depending on the population of each year group, proportional stratified sampling was used to determine the sample size from each form in each school (Table 1). For confidentiality purpose A, B, C was used to represent the schools selected for the study [9].

Table 1: Sampling frame.

School	Student population	Sample size
School A		
Form one	1000	94
Form two	1025	97
Total	2025	191
School B		
Form one	429	40
Form two	527	50
Total	956	90
School C		
Form one	660	62
Form two	600	57
Total	1260	119
Grand Total	4241	400

Research instrument

Questionnaire was used for the data collection. The questionnaire was developed based on the objectives of the study. It had five sections. Section A was based on the background characteristics which consisted of form, age, gender, religion, ethnicity, living arrangements, level of education of parents. Section B was based on level of contraceptive use. Issues under this sub-section included knowledge on the effectiveness of condoms. While some questions were close-ended, others were open-ended. Responses of participants to the open-ended questions were, however, later categorized to make them close-ended for analysis.

Pre-testing

In order to ensure validity and reliability of the instrument, a pre-test was conducted at the Winneba senior high school located in the Winneba municipality. The school was chosen in Winneba because students in senior high schools in both Cape Coast and Winneba were likely to have similar socio-demographic characteristics, which influence their sexual behavior and contraceptive use [10].

Data collection procedure

After explaining the purpose of the study to the students, the questionnaires were distributed to the students who consented to participate in the study. The instruments were self-administered. The respondents were given the instruments to respond to and the instruments were taken right after completion. The data collection took three weeks; 28th August 17th September, 2015. An instrument took about 20 minutes for each respondent to complete. To avoid information contamination, data were collected during a single day in each selected school. Data collection took place in the absence of class teachers and efforts were made to ensure maximum comfort and privacy for the participants. Students sat apart from each other and discussion was not allowed when completing the questionnaires, both to ensure privacy and to avoid shared responses. When they had finished, students were requested to put their completed questionnaires into a sealed cartoon box instead of giving them to the researcher. All the eligible respondents selected took part in the study. The completion rate was 100%. All items on the questionnaire administered were completed [11].

Ethical issues

Introductory letters were obtained from the department of population and health of the university of Cape Coast, which was presented to authorities of the three schools. This enabled the researcher to acquire approval from the selected schools to conduct the study. Verbal consent was sought from each student after explanation of the purpose and procedure of the study. Participation in the study was voluntary. All information obtained from the participants was kept confidential and the questionnaires were anonymous. The names of respondents were also not associated with responses provided to ensure their anonymity. The need for ethics approval and consent by the Ghana health service ethics review committee and university of Cape Coast ethical board was waived [12].

Results

Data analysis

Data collected from respondents was processed using Statistical Product for Service Solutions (SPSS) version 21. The questionnaires were checked for accuracy and consistency of the responses to the items. After editing, a template was developed and used to create a data analysis matrix on the computer, as well as code responses to the items on the instrument. After coding, the data was then entered into the computer analysis matrix developed with the computer software. The collected data were first cleaned, assessed for normality and outliers. The scores that fell outside the possible range of the data entered for the analyses were corrected. Percentages and cross tabulations were used to present the data in the form of tables. *Chi square* analysis was also conducted to investigate the influence of the students socio-demographic characteristics on their contraceptives use [13].

Findings

Four hundred students were sampled for the study. Respondents were asked to indicate whether they were ever taught about contraceptives in class, since this had a likelihood of influencing their level of knowledge on contraception. Concerning background characteristics of respondents, majority students were in form two (51%), 15-19 years (84.7%), male (51.7%), christians (96.5%) and were living with both parents (70.5%). Regarding education background of their parents most of them had tertiary level education. About 73% of their fathers had tertiary level education and their mothers 50% (Table 2) [14].

Table 2: Background characteristics of respondents.

Variable	Frequency	Percentage (%)
Form		
One	196	49
Two	204	51
Age		
10-14	61	15.3
15-19	339	84.7
Gender		
Female	193	48.3
Male	207	51.7
Religion		
Christianity	386	96.5
Islam	13	3.2
African traditional	1	0.3
Living with both parents		
Yes	282	70.5
No	118	29.5

Level of education of mother		
No formal education	22	5.5
Primary education	56	14
Secondary education	123	30.7
Tertiary education	199	49.8
Level of education of father		
No formal education	9	2.3
Primary education	23	5.8
Secondary education	75	18.7
Tertiary education	293	73.2

Fifty five percent of all the respondents sampled for the study were taught about contraceptives in class. About 86% had never had sexual intercourse. Among those who had ever had sexual intercourse, 25% of them used contraception the last time they had sexual intercourse. Seventy seven percent of the females and 59% of the males who ever had sex used condom. Overall, 69% of the sexually active respondents who used contraceptives used condom the last time they had sexual intercourse. Fifty six percent of the females and 47% of the males got the contraceptives from the pharmacy or chemical shop. In all, 56% of the sexually active participants accessed contraceptives from pharmacies/chemical shops. From the *Chi square* analysis form (p=0.001), gender (p=0.000) and level of fathers education (0.000) were statistically significant to the use the contraceptives among the students (Tables 3 and 4) [15].

Table 3: Knowledge and contraception use.

Variable	**Gender (%)**		**Total (%)**
	Female	**Male**	
Being taught in class about contraception N=400			
Yes	81.9	60.2	55.3
No	18.1	19.8	44.7
Ever had sexual intercourse N=400			
Yes	6.2	20.8	13.8
No	93.8	79.2	86.3
Use of contraception at last sexual encounter N=55			
Yes	75	39.5	47.4
No	25	60.5	52.6
Type of contraceptive used N=26			
Condom	66.7	58.8	69.3
Oral contraceptive	11.1	11.8	11.5

Condom and oral contraceptives	11.1	17.6	7.7
Withdrawal method	11.1	5.9	11.5
Source of access to contraceptives N=26			
Store or shop	33.3	35.3	28.4
Pharmacy/chemical shop	55.6	47.1	56.3
Clinic or hospital	11.1	-	3.8
A friend	-	17.6	11.5

Table 4: Influence of background characteristics on contraceptive use.

Variables		**Use of contraceptive during last sexual encounter**			
		Yes n (%)	**No n (%)**	**X^2**	**p-value**
Form	One	5 (19.2)	10 (34.5)	13.322	0.001
	Two	21 (80.8)	19 (65.5)		
Age	10-14 years	1 (3.8)	5 (17.2)	2.833	0.243
	15-19 years	25 (96.2)	24 (82.8)		
Gender	Female	9 (34.6)	3 (10.3)	21.076	0
	Male	17 (65.4)	26 (89.7)		
Religion	Christianity	25 (96.2)	28 (96.6)	0.196	0.996
	Islam	1 (3.8)	1 (3.4)		
	African tradition	0 (0.0)	0 (0.0)		
Living with both parents	Yes	14 (53.8)	18 (62.1)	5.098	0.078
	No	12 (10.2)	11 (9.3)		
Level of education of mother	No formal education	3 (11.5)	2 (6.9)	8.38	0.212
	Primary education	3 (11.5)	6 (20.7)		
	Secondary education	8 (30.8)	13 (44.8)		
	Higher than secondary education	12 (46.2)	8 (27.6)		
Level of education of father	No formal education	3 (11.5)	2 (6.9)	24.79	0
	Primary education	1 (3.8)	5 (17.2)		
	Secondary education	7 (26.9)	5 (17.2)		

	Higher than secondary education	15 (57.7)	17 (58.6)		

Discussion

The findings of the study indicated that, majority of the respondents were in form two, 15-19 years, male, christians and were living with both parents. Regarding education background of their parents most of them had tertiary level education. From the results, it has been realized that majority of the participants who had ever had sex, used no contraception the last time they had sexual intercourse. This implication is that contraceptive use was low among students in the present study as also observed. Over 50% of adolescents did not use any contraceptives during sexual intercourse. The percentage of participants who ever had sex and used contraceptives was higher than the 18.6% recorded in the 2014 demographic and health survey of Ghana and about 39 percent in the USA [16].

Majority of respondents who said they used contraceptives, however, used condoms. The high rate of condom use among contraceptive users may be due to the availability of condoms in almost all pharmacies/chemical shops, compared to other contraceptives. This was evident in the fact that majority of the contraceptive-using adolescents indicated pharmacy/chemical shop as their main source of contraceptives. These findings are consistent with results of the studies conducted, in which they found pharmacy shops as the commonest source of contraceptives for their participants [17].

Strengths and weaknesses of the study

The weaknesses of the study were that 3 schools were selected out of the 10 public senior high schools in Cape Coast metropolis. Private schools were not also included in the study therefore it will be difficult to generalize the findings. Contraceptive use and sexuality information is very sensitive and could alter the information provided by the respondents. The strength of the study was that it has provided relevant information to stakeholders on how to implement best interventions to improve contraceptive use among sexually active senior high school students to reduce teenage pregnancies, abortions and STIs including HIV and AIDS [18].

Conclusion

Most of the students were not sexually active. Most of the sexually active senior high school students do not use contraception during sexual intercourse. The implication is that these students stand the risk of contracting stis as well as unplanned pregnancy which can lead to abortion and or school dropout. The few sexually active students who use contraceptives during sexual intercourse, however, depend on condoms, which they generally purchase from pharmacies and chemical shops, to protect themselves from STIs and unplanned pregnancies. Majority students were in form two (51%), 15-19 years (84.7%), male (51.7%), christians (96.5%) and were living with both parents (70.5%). Regarding education background of their parents most of them had tertiary level education. The findings of the study will inform Ghana health service on how to improve services for adolescents in general. There is the need to strengthen adolescent reproductive health services mostly on contraceptive use among sexually active ones. Further studies could be done on the attitude of contraceptive service providers on the sexually active who intend to use contraceptives

Ethics Approval and Consent to Participate

All procedures performed in the study were in accordance with the ethical standards of the Ghana health service. The need for ethics approval and consent by the Ghana health service ethics review committee and university of Cape Coast ethical board was waived. Written permission was sought form the school authorities. The purpose and produce were explained to the participants. Participation of the study was voluntary and anonymity and confidentiality were ensured.

Consent for Publication

Not applicable.

Availability of Data and Material

The datasets generated during and/or analysed during current the study are not publicly available due to ethical reasons but are available from the corresponding author on reasonable request.

Competing Interest

I declare that I have no competing interest.

Funding

N/A.

Authors' Contributions

I conceived the study, the design, data collection, data analysis, interpretation and write-up and in the preparation of the draft manuscript.

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