

Original Research Article

CONTRACEPTIVE USE AMONG STUDENTS OF HEALTH TRAINING INSTITUTION IN NORTH-EAST REGION OF GHANA

Abstract

Background

Despite contraceptive awareness and availability to the general population including higher education institutions, unplanned pregnancies continue to increase.

Aim/objective

The study assessed the contraceptive usage among female health trainees.

Method

The study assessed contraceptives use among 143 female health trainees, using a descriptive cross-sectional study design. The data was collected using an online survey, analyzed descriptively, Chi-square test and logistic regression analysis were performed using Statistical Package for Social Sciences version 25. A p-value of <0.05 was considered statistically significant.

Results

The age ranged between 18 and 36 years with a mean age of 23.7 (Sd \pm 2.82) years and the majority (69.9%) were in the 21-25 years age category. The mean age of first sexual intercourse was 17.8 (Sd \pm 5.65) years. The overall prevalence of contraceptive use was 59.0% with ever and

current users being 47.6% and 35.7% respectively. The male condom was commonly used contraceptive (53.6%). With the Chi-square test, we found significant differences between current contraceptive use and age at first sex ($X^2=15.42$, $p=0.009$), protection during first sexual intercourse ($X^2=7.30$, $p=0.026$), current relationship status ($X^2=15.12$, $p<0.001$), and multiple sexual partners ($X^2=10.25$, $p=0.001$). We also found that being in a sexual relationship (OR=4.49, 95%CI: 1.61, 12.50, $p=0.004$) was positively associated with current contraceptive use. Prevention of unwanted pregnancy/birth was the common reason for contraceptive use with fear of side effects as the reason for non-use.

Conclusion/Interpretation

Overall, the study found high contraceptive use with significant discontinuation among ever and current users. There is the need for public health education and promotion programmes to increase acceptance and use of contraceptives among the study population and the public.

Keywords: Contraceptive, sex, students, pregnancy, high institutions, and North-East.

What is known

- Contraceptives reduce pregnancy-related morbidity and mortality
- Contraceptives reduce unwanted pregnancies
- Contraceptives benefit the education of women and empower them for higher opportunities

What is added

- Substantial use of contraceptives
- Significant discontinuation of ever users and current users of contraceptive
- Barriers to contraceptive use correspond with reports of other studies

Introduction

Contraceptives are key public health interventions to address unmet needs for family planning and meeting the target of ensuring gender equality and women empowerment of the Sustainable Development Goal five (SDG-5)[1]–[4]. Universally, contraceptives use is reported to be increasing, however, there is a decline among Sub-Saharan African countries [4]. Regional variations in contraceptives use exist in Ghana and largely depend on the type of data used in the estimation. Some previous studies reported prevalence rates of 21.5%, 31.0% in 2014 and 2018 in a national representative data and 18.5% in the Northern Region of Ghana [4], [5]. Likewise, the estimated unmet need for birth spacing in the Northern Region is reported to be the highest (21.7%) in Ghana [5]. Ghana faces increasing medico-social challenges including teenage pregnancy, unsafe abortion, unwanted pregnancies and sexually transmitted infections such as HIV/AIDs [6]–[12]. Previous studies report of increasing incidence of unplanned pregnancies among female students in higher learning institutions globally [13]. This has adverse consequences on learning outcomes, including dropout and unattained goals among women [14], [15]. Addressing these challenges through the use of contraceptives are highly recommended [2], [4], [16]–[18] to empower women and address the unmet needs of family planning. There should be a conscious effort to promote contraceptives use among the population, especially among women of reproductive age. This study determined the contraceptives use among female health trainees, in the North-East Region of Ghana. Health professionals play a critical role in the diffusion of advances in healthcare and medicine including the use of contraceptives. Understanding the level of contraceptives usage and associated factors among health students who would soon transition to practice becomes important conditions to encourage usage among other populations. The North-East Region was recently created out of the Northern Region of

Ghana. No reference of contraceptives use combined with associated factors has been made in the region. The study provides the maiden data on contraceptives use that could be used to address unmet needs for family planning in the region. We, therefore, assessed the contraceptives use among female health students in the College of Nursing and Allied Health at Nalerigu, North-East Region, Ghana.

Materials and Method

Study setting and design

This is a cross-sectional study involving female health students of College of Nursing and Allied Health, Nalerigu, North-East Region, Ghana. The College trains students in programmes including nursing, midwifery, medical laboratory, nutrition and dietetics, and physiotherapy. The data was collected as part of a study on cervical cancer. The contraceptive data was extrapolated and analyzed for contraceptives use and its associated factors. The North-East Region is among the six newly created regions in Ghana, with Nalerigu as the regional capital. The study was conducted between September and October 2021.

Sampling technique

The study purposively used an institutional-based online survey to collect information on contraceptives use among female health trainees of the College of Nursing and Allied Health, Nalerigu. A total of 143 female health trainees attempted the questionnaire, out of 3095 female health trainees (College of Nursing and Allied Health Sciences, 2021). The female health student's population were stratified from the school's database to get their means of contacts, including emails and mobile phone numbers. A link to the online survey was subsequently sent to them to participate in the study. Prior to participation, study participants were asked to

indicate their willingness to partake in the study after explaining the rationale of the study. Participants who indicated an unwillingness to participate were automatically excluded from the study. Study participants who consented to participate in the study continued to attempt items in the survey questionnaire. The study was approved by the Research Office of the College of Nursing and Allied Health, Nalerigu (MOH/NMTC/RES21-9/003).

Study instrument and data collection

An online questionnaire, using google form was designed after careful review of relevant studies elsewhere [4], [17]–[19]. The questionnaire was reviewed by independent assessors from the Department of Population and Health at the School of Public Health, University for Development Studies. Subsequently, a pilot study of the questionnaire was conducted among a group of 25 female students at a nursing training college in the Northern Region, Ghana. Modifications were made where necessary to the questionnaire. The questionnaire was designed to capture data on sociodemographic characteristics, sexual history, contraceptive use, and associated determinants. Data quality was maintained by designing the questionnaire in a way that allows participants to complete the form before submission. This was to exclude incomplete forms. By way of eliminating multiple submissions by a participant, the form was designed to allow for only one submission by a participant.

Data analysis and presentation

The online data was extracted and converted to Microsoft Excel File (version 16). The extracted data was cross-checked for distortions and accuracy. The data was subsequently transferred onto SPSS (version 25) for further data management and analysis. The string data were categorized into numeric data.

The outcome variable used in this study was current contraceptives use and was a dichotomous variable, “yes (1) or no” (2). The explanatory variables were age at first sex, protected first sex, sexual relationship status, and multiple sexual partners.

The data was analyzed descriptively, chi-square and logistic regression were performed. A p-value < 0.05 was considered statistically significant. The data summary was presented in frequency, percentages, chart and tables.

Results

Sociodemographic characteristics

The study consisted of 143 female study participants with age ranging between 18 and 36 years. The mean age was 23.7 (Sd±2.82) years and the majority (69.9%) in the 21-25 years age category. Greater proportions of the study participants were single (85.3%), Christians (67.1%) and received monthly income of GHC ≤ 500.0 (55.2%). The majority (65.0%) of the study participants were in the first year of their training as shown in **Table 1**.

Table 1. Sociodemographic characteristics of study participants

Variables	Categories	Frequency (n= 143)	Percentage (%)
Age	≤20	14	9.8
	21-25	100	69.9
	26-30	25	17.5
	30≥	4	2.8
Marital Status	Co-habiting	3	2.1
	Married	18	12.6
	Single	122	85.3
Religion	Christian	96	67.1
	Muslim	45	31.5
	Traditionalist	2	1.4
Monthly income (GHC)	>500.00	64	44.8

	≤500.00	79	55.2
Year	First year	93	65.0
	Second year	47	32.9
	Third year	3	2.1

GHC; Ghana Cedis (Currency), Sd; Standard deviation

Sexual History and First Contraceptive Use Among Study Participants

The mean age of first sexual intercourse was 17.8 (Sd ±5.65) years with the majority (61.5%) being in the age category of 16-20 years. A greater proportion (62.9%) of the study participants indicated that they protected their first sex. Common contraceptive used during first sexual intercourse included the male condom (32.9%), emergency contraceptive (9.8%) and contraceptive pills (9.1%). The majority of the study participants indicated that they were currently in a sexual relationship (67.8%) out of which a low proportion have multiple sexual partners (19.6%) as shown in **Table 2**.

Table 2. Sexual History and First Contraceptive Use Among Study Participants

Variables	Categories	Frequency	Percentage (%)
Age at first sex (years)	≤10	4	2.8
	11-15	8	5.6
	16-20	88	61.5
	21-25	32	22.4
	26≥	2	1.4
	None	9	6.3
Mean age (years) at first sex	17.80 (Sd ±5.65)		
Protection during first sexual intercourse	Yes	90	62.9
	No	43	30.1
	None	10	7.0
Contraceptive used for first sex (n=90)	Contraceptive pills	13	9.1
	Emergency contraceptives	14	9.8
	Female condom	2	1.4
	Implant	1	0.7
	Injection	1	0.7

	Male condom	47	32.9
	Withdrawal method	12	8.4
Current relationship status	In sexual relationship	97	67.8
	Not in sexual relationship	46	32.2
Multiple sexual relationship (n=97)	Yes	19	19.6
	No	78	80.4

Sd; Standard deviation

Prevalence of Contraceptive Use Among Study Participants

The prevalence of contraceptive use (ever and current users) is high among the study participants (59.0%) as shown in **Figure 1**.

Figure 1. Prevalence of contraceptive use among study participants

Pattern and Usage of Contraceptive Among Study Participants

Ever use and current contraceptive users were 47.6% and 35.7% respectively. Current contraceptive users who have multiple sex partners were 68.5%. The male condom (53.6%), emergency contraceptive (52.4%), and contraceptive pills (35.7%) were the most commonly used contraceptives. The reasons accounting for contraceptives use included prevention of unwanted pregnancy/births (78.4%), prevention of sexually transmitted infections (33.3%) and partners choice (15.5%). The major reason accounting for nonuse of contraceptive includes fear of associated side effects (37.0%) as shown **Tables 3a and 3b**.

Table 3a. Pattern and Usage of Contraceptive Among Study Participants

Variables	Categories	Frequency	Percentage (%)
Ever contraceptive users	Yes	68	47.6
	No	75	52.4
Current contraceptive users	Yes	51	35.7
	No	92	64.3
Current contraceptive users who have multiple sex partners (n=19)	Yes	13	68.4
	No	6	31.1
Age distribution of current contraceptive users (n=51)	≤20	5	9.8
	21-25	35	68.6
	26-30	9	17.6
	31≥	2	4.0
Marital status and contraceptive use (n=51)	Co-habiting	0	0.0
	Married	5	9.8
	Single	46	90.2
Commonly used contraceptives by both current and previous users (Multiple response type of question) (n=84)			
Male condom	Yes	45	53.6
	No	39	46.4
Female condom	Yes	5	6.0
	No	79	94.0
Emergency contraceptives	Yes	44	52.4
	No	40	47.6
Contraceptive pills	Yes	30	35.7
	No	54	64.3
Withdrawal method	Yes	18	21.4
	No	66	78.6
Injection	Yes	10	12.0
	No	74	88.0
Diaphragm	Yes	1	1.2
	No	83	98.8
Rhythm method	Yes	2	2.4
	No	82	97.6
Implant	Yes	4	4.8
	No	80	95.2
Intrauterine Device (IUD)	Yes	1	1.2
	No	83	98.8

Table 3b. Continuation: Pattern and Usage of Contraceptive among Study Participants

Variable	Categories	Frequency	Percentage (%)
Reasons for using contraceptives among current users (n=51)			
Easily available	Yes	10	20.0
	No	41	80.0
Easy use	Yes	9	17.6
	No	42	82.4
Partner's choice	Yes	13	15.5
	No	38	84.5
Less expensive	Yes	7	13.7
	No	44	86.3
Spacing of birth	Yes	3	3.6
	No	48	96.4
Prevention of unwanted pregnancy/birth	Yes	40	78.4
	No	11	21.6
Prevention of sexually transmitted infections	Yes	17	33.3
	No	34	66.7
Reasons for not using contraceptive among current non-users (n=92)			
Bad perception of society towards it uses	Yes	5	5.4
	No	87	94.6
I am a Christian and therefore I am forbidden to use	Yes	9	9.8
	No	83	90.2
I am a Muslim and therefore I am forbidden to use	Yes	2	2.2
	No	90	97.8
It is not readily available	Yes	0	0.0
	No	92	100.0
Fear of side effects	Yes	34	37.0
	No	58	63.0
Not sexually active	Yes	9	9.8
	No	83	90.2
My partner does not allow me to use	Yes	9	9.8
	No	83	90.2
Stigmatization	Yes	4	4.3
	No	88	95.7
Costly	Yes	5	5.4
	No	87	94.6

Association between Sexual History and Current Contraceptive Use of participants

A chi-square was performed to determine the level of association between the dependent variable (current contraceptive use) and the independent variables; including sociodemographic characteristics and sexual history of study participants. The Chi-square test showed significant differences between age at first sex ($X^2=15.42$, $P=0.009$), protection during first sexual intercourse ($X^2=7.30$, $P=0.026$), current relationship status ($X^2=15.12$, $P<0.001$) and multiple sexual partners ($X^2=10.25$, $P=0.001$) as shown in **Table 4**.

Table 4. Association between Sexual History and Current Contraceptive Use of participants

Variables	Categories	Current contraceptive use		p-value (X^2 , df.)
		Yes	No	
Age at first sex (years)				0.009 (15.42, 5)
	≤10	2	2	
	11-15	2	6	
	16-20	41	47	
	21-25	6	26	
	26≥	0	2	
	None	0	9	
Protection during first sexual intercourse				0.026(7.30, 2)
	Yes	21	42	
	No	30	40	
	None	0	10	
Current relationship status				<0.001 (15.12,1)
	In a sexual relationship	45	52	
	Not in a sexual relationship	6	40	
Multiple sexual partners				0.001(10.25,1)
	Yes	13	6	
	No	38	86	

Predictors of Contraceptive Use among Study Participants

We performed logistic regression analysis to determine the level of association between independent variables with the dependent variable of current CP use. We found that being in a sexual relationship (OR= 4.49, 95%CI (1.610-12.498), $p=0.004$) was positively associated with current contraceptive use among study participants as shown in **Table 5**.

Table 5. Predictors of Contraceptive Use among Study Participants

Variables	P-Value	OR (95%CI)
Protection during first sexual intercourse		
Yes	0.894	0.89 (0.159-4.984)
No	0.376	0.44 (0.070-2.734)
None (RC)		-
Relationship status		
In a sexual relationship	0.004	4.49 (1.610-12.498)
Not in a sexual relationship (RC)		-
Multiple sexual partners		
Yes	0.119	2.67 (0.777-9.195)
No (RC)		-

RC; Reference Category, OR; Odds Ratio

Discussion

Our study provides the maiden findings on institutional-based contraceptive use in the North-East Region. We found the overall contraceptive use to be high (59.0%) with relatively higher proportions of ever (47.6%) and current users (35.7%). Similar to studies elsewhere, contraceptive use was reported to be high among health students in Ghana [20], female tertiary students in Botswana [21] and low among other tertiary students in Ghana [13]. The results in our study are particularly important considering our study participants, who are health trainees. Their usage of contraceptive may affect the type of education and recommendation they offer to the public. The high contraceptive use among our study participants may be partly due to their health background, given them substantial information, including the benefits of contraceptives. Comparatively, there was significant discontinuation of contraceptive use among ever and current users. The discontinuation raises an important public health challenge, with recent reports of increasing unplanned pregnancies among tertiary students globally (Gbagbo, 2019; Maja, 2004). Understanding the factors accounting for the discontinuation among ever contraceptive users offer important data for public health education and promotion activities and prevent unplanned pregnancies. Among the many reasons asserted by study participants for non-use of contraceptive included; fear of side effects, partners not encouraging contraceptive use and bad perception of society towards contraceptive use. These reasons have been equally identified by other researchers [5], [23], [24]. These reasons should not be addressed, if Ghana and the subregion are to meet our family planning needs. The enablers of contraceptives use among current users provides public health experts in contraceptive and family planning services valuable information critical to address unmet needs of family planning. Unavailability of contraceptive was not cited as a reason for non-use of contraceptive among non-users, this was confirmed by current users indicating that contraceptives were readily available. This may

highlight Ghana's progress towards achieving universal family planning and the SDGs 3 and 5 by the year 2030. Our study found that partners can either influence the use or disuse of contraceptives. Therefore, contraceptive use interventions should be bidirectional, targeting both females and males to achieve optimum acceptance and use.

The majority of our study participants engaged in sexual activities in their teenage period and was high among persons within the age groups of 16-20 years. Other recent studies in the northern region of Ghana reported sexual activities among 16 years and above [25]–[30]. Suggestively, teenagers should be a target for contraceptive use, this may not only prevent teenage pregnancies and attending consequences but also sexually transmitted infections including HIV/AIDS which is a major public health challenge in Ghana and the subregion. Important in this study is the finding of early use of contraceptives among our study participants, re-emphasizing a need to target teenagers in family planning services in Ghana. A recent study in the Northern Region reported the use of contraceptives among senior high school students [23] who are normally teenagers, however, knowledge and contraceptives use were relatively low. Corroborating the findings of Abdul-wahab et al. (2021), knowledge, attitudes and practices of sexual and reproductive health among a group of teenagers were poor in the Tamale Metropolis, Ghana. These findings stress the need to intensify the efforts in addressing the unmet needs of family planning, including knowledge and use of contraceptives. More significantly, the design of public health interventions on contraceptive use should consider factors age at first sex, protection during first sexual intercourse, current relationship status and persons with multiple sexual partners.

Study limitation

The data used in this study was self-reported and subjected to information biases combined with our inability to confirm responses given. The study was limited to only females and may not express the perspectives of males on contraceptives use. However, our study provides important information on contraceptive use among important subpopulation as healthcare students who would soon transition to practice. Understanding the use of contraceptives among them provides essential information that could be factored into health education and promotion programmes at the various healthcare facilities to increase contraceptive uptake and prevent unwanted pregnancies among tertiary students.

Conclusion

Overall, the study found high contraceptives use, and a relatively higher proportion of current contraceptive users. Comparatively, contraceptive dropout was significant among ever users and current users. An important reason for discontinuation of contraceptive use included fear of side effects which can be relied on for public health education and promotion programmes. Reasons for contraceptives use should be highlighted among the public to increase acceptance and use.

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