



Knowledge of Contraceptives, Knowledge of Types, and Identified Challenges to Contraceptives Use among Undergraduate Nursing Students in the University for Development Studies

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How to cite this paper: Issah, H., Salifu, A. and Awal, I. (2022) Knowledge of Contraceptives, Knowledge of Types, and Identified Challenges to Contraceptives Use among Undergraduate Nursing Students in the University for Development Studies. *Open Access Library Journal*, 9: e8530. <https://doi.org/10.4236/oalib.1108530>

Received: February 26, 2022

Accepted: March 21, 2022

Published: March 24, 2022

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Abstract

Background: Contraceptives are classified primarily into two categories: classic/traditional and modern methods. They are considered as critical preventive measure of unplanned pregnancies and sexual transmitted infections (STIs). This survey was carried out among nursing students of the University for Development Studies main campus in Tamale (UDS). The aim of the study was to describe undergraduate nursing students' knowledge of contraceptives, their knowledge of the types, and the challenges they identified to be associated with contraceptive use. **Methods:** A descriptive cross-sectional design was carried out among 230 nursing students (n = 230). A quota was assigned to each level of study (that is, levels 100, 200, 300, and 400) based on the population of students at each level of study. Following that, participants were randomly selected using a class list as a sample frame. Self-administered questionnaire was distributed to students for their response. With the help of IBM's Statistical Package for Social Sciences (SPSS version 22), analysis of the data was conducted using descriptive statistics. **Results:** Approximately 60% of research participants reported having their first sexual encounter between the ages of 15 and 19, with 35% reporting utilizing contraception. Contraception was currently used by 58 percent of recruited students, 82 percent of whom were Christians. There was a gradient in students' knowledge of contraceptives, with the level 100 being the least and level 400 with the highest knowledge. Condom was the most known and often used technique (52%),

followed by emergency contraception (14%). Again, the most frequently cited reasons for using contraceptives were to avoid pregnancy or to prevent someone else from becoming pregnant (57%), and to prevent sexually transmitted illnesses (43%). At 40%, pharmacy/drug stores were reported to be the most popular supplier of contraceptives, followed by family planning clinics at 26%. By virtue of the type of contraceptive commonly used by participants, most of them (75%) reported not experiencing challenge in using contraceptives. For the nonusers of contraceptives, various reasons were cited including that it was against their faith (26%), the fear of side effects (25%), among others. **Conclusion:** Notwithstanding that a greater number of the students had knowledge of at least one contraceptive technique, it did not translate into improved consistent use of contraceptive. There is lacked of adequate knowledge of many contraceptive techniques. We recommend the implementation of educational programs to increase students' knowledge of the various types of contraceptives, including the benefits and drawbacks of all contraceptive techniques. Making contraceptives, mainly condoms, more accessible in appropriate, culturally sensitive, student-friendly contexts has never been more critical than it is now, particularly in light of the growing need to address the proliferation of misguided and misleading information on sexuality and risky sexual behaviours among adolescents in the social media.

Subject Areas

Drugs, Devices

Keywords

Contraceptive Knowledge, Contraceptive Types, Contraceptive Use, Challenges to Contraceptive Use, Nursing Students

1. Background

Adolescent sexual behaviour is a major public health, social, and economic issue in developing countries, including Ghana. Contraceptive Prevalence Rate (CPR) refers to the percentage of women of reproductive age (15 - 49) who utilize contraception at any given period. Contraceptives can be modern or traditional. Male and female condoms, implants, injectables, the pill, and lactational amenorrhoea method (LAM) are modern contraceptives. Traditional contraceptive methods include rhythm, withdrawal, and folk practices [1] [2]. Contraception ensures that all adults and adolescents are safeguarded from the health and socioeconomic consequences of undesired pregnancy. It also allows for a fulfilling sexual life [3]. Despite this, unprotected sexual activity among adolescents is widespread, and unmarried people rarely utilize contraception, that is, 68 percent modern, 87 percent traditional [2]. These actions have significant effects. For instance, nearly half of the 14 million unplanned pregnancies in Sub-Saharan Africa happen to women aged 15 - 24 [4]. Every year, around 410,000 adolescent births

that occur in the US are unplanned [5].

Contraceptive use is a proxy for women's empowerment, population growth and development [6]. Despite their high level of contraceptive awareness, 25% of university students had unmet contraceptive needs [7] [8]. Unprotected intercourse was perceived by students at risk of pregnancy due to lack of planning and concern of contraceptive side effects [9]. Ghana's university students are mostly in their 20 s. These people are more likely to engage in risky sexual behaviors like having several partners, unprotected sexual encounters with strangers, and inebriated sex [10]. Bui *et al.* [11] discovered that 13% of undergraduate girls with boyfriends engaged in vaginal sexual intercourse and 10% engaged in oral sex. One-third of those who had their first vaginal sexual intercourse did not use contraception [11]. Women who had vaginal sex had previously had drunken, unprotected, and multiple partner sex in the prior six months [12]. In Thailand, 94 percent of university students (18 percent of the entire sample) who were moderately or severely at risk of HIV infection either did not recognize or did not believe they were at risk [13]. Similar findings were achieved among African American college students in the Midwest [12]. African American college students avoided safer sex for four reasons [14], including anti-condom attitudes. Unbelievability, trust based on looks or relationship quality, and willingness to live in the moment was also noted. University students are more likely to be exposed to STIs, including HIV, and unexpected pregnancies due to risky behaviors and beliefs [15].

While college students are great human resources, they are also prone to dangerous sexual practices that may hinder their academic progression. Again, while most students are aware of the various contraceptive choices available, their knowledge of how they function, how to use them, and the adverse effects/challenges associated with their use is limited. Preventing unsafe sexual activities among tertiary students will help reduce STIs and undesired pregnancies, all of which impact community health. This study aims to describe students' knowledge of contraceptives, their knowledge of types, and the problems involved with contraceptive use among undergraduate nursing students in UDS, Tamale-Ghana.

2. Methods

2.1. Study Design, Setting and Population

This study was a descriptive cross-sectional study conducted among full-time undergraduate students in Tamale, Ghana. The study population comprises of nursing students of the School of Nursing and Midwifery, Tamale campus, University for Development Studies (UDS), Ghana. The UDS is the largest university in the northern part of Ghana. Currently, programs run in Tamale campus include Medicine (MBChB), Community Nutrition, Education, Nursing, Midwifery, Nurse Practitioner, Medical Laboratory Science, and Public Health related programmes, among others.

2.2. Sample Size

From a total population of 709 nursing students, a sample size of 230 individuals was chosen. The overall sample size was estimated by taking 30% of the total enrollment in each class. The sum of these values represented the total number of subjects used for the study.

2.3. Data Collection

The researchers adapted structured questionnaire from the adolescent reproductive health data collection instrument by the United Nations Development Programme (UNDP)/United Nations Population Fund (UNFPA)/the World Health Organization (WHO)/World Bank [16]. The data collected after students consented to participate in the study included the demographic characteristics of students, contraceptive knowledge, knowledge of type of contraceptives used, and identified challenges and/or adverse effects associated with its use.

2.4. Data Management and Analysis

Data was managed to ensure completeness, accuracy, and consistency. A total of two hundred and twenty (250) questionnaires were distributed, with two hundred and thirty (230) returned. Cleaned and processed data were analyzed using the SPSS version 22 and the results presented using tables.

2.5. Ethical Considerations

The study was conducted after approval from the ethics committee of the Tamale Teaching Hospital. Permission was also obtained from the School of Nursing and Midwifery, and the Department of General Nursing. Verbal consent was obtained from each participant.

3. Results

3.1. Sociodemographic Characteristics of Students

Majority (104, 52%) of the respondent's age fell within the age bracket of 20 - 24. Most of the respondents were female (121, 60.5%), 80.5% were single, and 65% (130) of the respondents were Christians. Sociodemographic characteristics of the students are summarized in **Table 1**.

3.2. Knowledge of Contraceptives

Knowledge of contraceptives was measured by students' ability to name at least a contraceptive method. **Table 2** shows participants knowledge of contraceptives, modern and traditional, by their level of study. There seemed to be gradient in students' knowledge from levels 100 to 400, with the level 100 being the least and level 400 with the highest level of knowledge. Condoms, emergency contraceptive, and oral pills registered the highest level of knowledge among students. Generally, female students recorded more knowledge (132, 93.6%) of different

Table 1. Sociodemographic characteristics of students.

Age of Student (230)	Frequency	Percent (%)
15 - 19	32	13.9
20 - 24	112	48.7
25 - 29	75	32.6
30 - 34	11	4.8
Gender of Participants		
Female	141	61.3
Male	89	38.7
Marital Status		
Single	181	78.7
Married	49	21.3
Level of Student		
Level 100	62	27.0
Level 200	58	25.2
Level 300	56	24.3
Level 400	54	23.5
Mothers Religion		
Christians	135	58.7
Islamic	89	38.7
Traditionalist	06	2.6
Age at First Sex		
10 - 14	09	4.6
15 - 19	118	59.6
20 - 24	67	33.8
25 - 29	04	2.0
Use of Contraceptive at First Sex		
Not used	129	65.2
Used	69	34.8
Ever Use Contraceptives (previous/current)		
No	96	41.7
Yes	134	58.3
Give Breast Milk Upon Delivery		
Christians	110	82.1
Islamic	18	13.4
Traditionalist	06	4.5

Source: Author Constructed, July-August 2021.

Table 2. Knowledge of participants regarding contraceptives by level of study.

	Level 100 (62)		Level 200 (58)		Level 300 (56)		Level 400 (54)	
	Yes [n (%)]	No [n (%)]	Yes [n (%)]	No [n (%)]	Yes [n (%)]	No [n (%)]	Yes [n (%)]	No [n (%)]
Injectables	10 (16)	52 (84)	15 (26)	43 (74)	25 (45)	31 (55)	35 (65)	19 (35)
IUD	15 (24)	47 (76)	25 (43)	33 (57)	27 (48)	29 (52)	45 (83)	9 (17)
Oral Pills	30 (48)	32 (52)	30 (52)	28 (48)	36 (64)	20 (36)	47 (87)	7 (13)
Emergency Cont. Pills	47 (76)	15 (24)	32 (55)	26 (45)	41 (73)	15 (27)	51 (94)	1 (6)
Condoms	60 (97)	2 (3)	58 (100)	0 (0)	56 (100)	0 (0)	54 (100)	0 (0)
Implants	17 (27)	45 (73)	32 (55)	26 (45)	35 (63)	21 (37)	42 (78)	12 (22)
Natural Family Planning	21 (34)	41 (66)	35 (60)	21 (40)	41 (73)	15 (27)	43 (80)	11 (20)
Cervical Caps & Diaphragms	12 (19)	50 (81)	28 (48)	30 (52)	25 (45)	31 (55)	35 (65)	19 (35)
Cont. Patch & Sponge	8 (13)	54 (87)	24 (41)	34 (59)	22 (39)	34 (61)	31 (57)	23 (43)
Sterilization	7 (11)	55 (89)	29 (50)	29 (50)	25 (45)	31 (55)	44 (81)	10 (19)

Source: Author Constructed, July-August 2021.

contraceptive techniques than their male (51, 57.3%) counterparts and this was prominent among those in level 400. Overall, students had good knowledge (138, 60%) of contraceptives however, there is room for improvement.

3.3. Source(s) of Information on Contraceptives Used, Access Points to Contraceptives Used, and Whether Contraceptives Were Acquired with/without Prescription

Current users or ever used contraceptives were 58.3%. As shown in **Table 3**, respondents indicated they got information on contraceptives from more than one source, but the major one was from friends (51, 38.8%). With regards to source(s) of access to contraceptives used, pharmaceutical/drug stores were the highest (54, 40.3%), 76.1% indicated that contraceptives could be obtained without prescription.

3.4. Knowledge of Types of Contraceptives Used, the Person(s) Who Used It, Reason(s) for Using It, Option Used and Education on Contraceptive Use at Orientation

Knowledge of types of contraceptives used by participants was defined as any contraceptive method (modern and traditional) students mentioned to have used or are currently using. Of the current users or ever used contraceptives (134, 58.3%), 70 (52.2%) mentioned condoms. As to who uses contraceptives during intercourse, 56.0% of them indicated they used it themselves. Reasons for using contraceptives: 56.7% said they use contraceptive(s) to prevent themselves or others from getting pregnant, 43.3% said they used it to prevent acquiring STIs, among others. **Table 4** summarizes these findings.

Table 3. Distribution of respondents by source(s) of information on contraceptives, on access to contraceptives, and whether contraceptives were acquired with/without prescription.

	Frequency (134)	Percent (%)
Sources of Information on Contraceptives		
Community health worker	14	10.4
Friends	51	38.1
Books/Magazines	18	13.4
Doctors/Nurses	15	11.2
Relatives	12	9.0
Media	24	17.9
Total	134	100
Source(s) of Access to Contraceptives		
Family Planning Clinics	35	26.1
Pharmaceutical/Drug Stores	54	40.3
Private Clinics	25	18.7
Hospitals	20	14.9
Total	134	100
Contraceptives with Prescription		
Yes	18	13.4
No	102	76.1
Don't know	14	10.5
Total	134	100

Source: Author Constructed, July-August 2021.

Table 4. Distribution of respondents who used contraceptives by types used, the person(s) who used it, reason(s) for using it and choice of option and education on contraceptive use at orientation.

	Frequency (230)	Percent (%)
Types of Contraceptives Used		
Emergency Cont Pills	19	14.2
Condoms	70	52.2
Implants	3	2.2
Oral Pills	17	12.7
Cont Patch & Sponge	0	0
Natural Family Planning	17	12.7
Cervical Caps & Diaphragms	0	0
Injectables	4	3.0

Continued

IUD	4	3.0
Sterilization	0	0
Total	134	100
Person(s) Who Used Contraceptives		
My Self	75	56.0
My Partner	41	30.6
Both of us	18	13.4
Total	134	100
Reason for the Choice of Contraceptive Option		
Easy to use	32	23.9
Cheap	23	17.1
Fewer/No side effect	21	15.7
Easily accessible	32	23.9
Most effective option	16	11.9
Others	10	7.5
Total	134	100
Reason for Using Contraceptives		
Fear of getting pregnant/someone pregnant	76	56.7
To prevent getting STIs	58	43.3
Total	134	100.0
Education on Contraceptives at Students Orientation		
Yes	167	72.6
No	36	15.7
Don't know	27	11.7
Total	134	100.0

Source: Author Constructed, July-August 2021.

3.5. Challenges to Contraceptive Usage

Table 5 presents information on the distribution of respondents regarding challenges (perceived or real) they attribute to the use contraceptives, reasons for nonuse of contraceptives and adverse effects (perceived or real) of contraceptive use. Of those who were either current users or ever used contraceptives (134, 58.3%), 50.9% said they do not experience any challenge using contraceptives, while 18.7% said otherwise, citing delay of coitus and irritations especially with condoms use. Of the nonusers of contraceptives (96, 41.7%) who are sexually active, 26% (25) indicated it was against their faith/religion beliefs, 25% (24) cited fear of side effects, among others. The most prominent adverse effect of contraceptive use

Table 5. Distribution of respondents on challenges to contraceptive use, reasons for non-use of contraceptives and adverse effects of contraceptive use.

	Frequency (134)	Percent (%)
Challenges to Contraceptives Usage		
Yes	33	24.6
No	101	75.4
Total	134	100
Reason for Not Using Contraceptives		
Against faith/religious practice	25	26.0
Fear of side effects	24	25.0
Unsupportive partner	19	19.8
Against culture	12	12.5
Personal to the individual	11	11.5
Cost	05	5.2
Total	96	100
Adverse Effects of Contraceptives		
Infertility	34	14.8
Between period bleeding	16	7.0
Weight gain	40	17.4
Irregular menses	53	23.0
Nausea and vomiting	24	10.4
Headache/body pains	14	6.1
Allergic reactions	25	10.9
Mood swing	9	3.9
Other	15	6.5
Total	230	100
Knowledge of Adverse Effects among Female		
Infertility	35	24.8
Weight gain	71	50.4
Irregular menstruation	68	48.2
Between period bleeding	32	22.7
Nausea and vomiting	36	25.5
Headache/body pains	82	58.2
Total	141	100

Source: Author Constructed, July-August 2021.

related to irregular menses (23.0%). Furthermore, female students achieved higher level of knowledge about adverse effects of oral pills (short- and long-term). These adverse effects identified by female students included: infertil-

ity (35, 24.8%); weight gain (71, 50.4%); irregular menstruation (68, 48.2%); headache/body pain (82, 58.2%); Nausea and vomiting (36, 25.5%); and between period bleeding (32, 22.7%). There were however, deficient in identifying the method of contraception with the greatest adverse effect, whether it was the injectables (Depo-Provera), oral pills, or intrauterine device (IUD).

4. Discussions

The goal of this study was to describe students' knowledge of contraceptives, including their knowledge of the types contraceptives and the challenges identified with it use among regular undergraduate nursing students of UDS. The study was informed by the deficiency of contraceptive knowledge among university students [17] and the high levels of adolescent pregnancies in Ghana [2].

4.1. Sociodemographic Characteristics of Study Participants

We enrolled male and female nursing students between the ages of 15 and 34, with a mean age of 27.4 years. This was an appropriate age limit, as contraceptive use is mostly dependent on one's age. We discovered that the majority of our participants (61.3%) were female and unmarried (78.7 percent), a finding that is comparable to that conducted among university students in Uganda [18], Dodoma, in Tanzania [19], and Imo State, in Nigeria [20]. Majority of our study participants (59.6 percent) had their first sexual debuts between the ages of 15 and 19, and this was also consistent with the findings of Hansen *et al.* [21], Magnusson *et al.* [22], and Zaba *et al.* [23]. It also conforms to the reported legal age for initiating sexual relations in Ghana [24]. The apparent connection is unsurprising, given that majority of our study participants were in their teens, a stage of life marked by a desire to explore one's sexual debuts in order to create one's identity. Again, our study reported a significant proportion (65.2 percent) of the participants did not use contraceptive during their first sexual debut and this is consistent with other studies [18] [22].

4.2. Knowledge of Contraceptives and Knowledge of Contraceptive Types

We found knowledge of at least one contraceptive method among the students to be very high, especially knowledge of condoms. However, knowledge of the types of contraceptives was not encouraging. The deficiency in knowledge relative to the types of contraceptive methods in use other than condoms seems to be a major one among adolescents and tertiary students in Ghana and other sub-Saharan Africa countries [1] [2] [25] [26]. The high level of knowledge related to condoms among adolescents in Ghana is not surprising given the enormous campaign programmes that were rolled out at the peak of HIV pandemic [25]. Furthermore, the high level of knowledge related to condoms may be attributable to condoms being the easiest to use contraceptive method by unmarried adolescents; given its dual ability to prevent STIs and unwanted pregnancy.

Knowledge of at least one contraceptive technique varied across students' level of study, with level 400 students recording higher levels of knowledge compared to level 100 students. Implication of these findings is that interventions designed to improve students' knowledge of contraceptives should be initiated.

4.3. Contraceptive Use and Challenges Identified Related to Contraceptive Use

Contraceptive use among the students was relatively low, as has been found in similar studies [2] [26] [27] [28] [29]. Notwithstanding the fact that some (58.3%) of the students reported ever or currently using contraceptives, this was not consistent. Many reasons were given to be responsible for this including being against their faith, fear of side effects, unsupportive partner, being against their culture, among others. Although low contraceptive use was recorded, there was increasing use of condoms among students compared to the other methods as has been found in similar studies [1] [30]. The likely explanation could be the ease with which condoms can be accessed by students. Our findings corroborated those conducted in Nigeria [31] and other Sub-Saharan Africa countries [32] [33] [34] [35]. The fact that students have more knowledge about condoms relative to the other methods may have accounted for high levels of condoms usage.

4.4. Other Findings

The low and inconsistent use of contraceptives among students may have been responsible for the adoption of risky sexual behaviours likely to expose them to the acquisition of STIs [36]. Menon *et al.* [36] found that students with less use of contraceptives (condoms for example), were 3.44 times more likely to be diagnosed with STIs compare to those who use it every time.

Our findings indicate that the most frequently used sources of knowledge were friends, the media, and books/magazines. Jones *et al.* [37] reported similar findings. This however, differ from those of Majer *et al.* [38], who found that internet and television were preferred sources of information over friends and media, and Fatimah *et al.* [17], who found that health care professionals were the preferred source of information. It was established from the study that having a credible source of information was likely to offer adolescents with more accurate information. Participants expressed contradictory attitudes about contraceptive use.

4.5. Study Limitations

We observed some limitations to this study that should be noted when interpreting the findings: the study population was restricted to students enrolled in a single university and from a single program of study. Hence study's findings cannot be generalized to all undergraduate students in UDS or other Ghanaian universities. There may be an information bias, since some information deemed sensitive by the students may have been withheld. Again, the study does not es-

establish any relationship/association between student sociodemographic characteristics and contraceptive knowledge, knowledge of the types, use, and identified challenges associated with its use.

5. Conclusion

Condoms were the most often used technique (52%), followed by emergency contraception (14%). The most frequently cited reasons for using contraceptives were to avoid pregnancy or to prevent someone else from becoming pregnant. The study showed that students have good knowledge of at least one contraceptive technique, and this knowledge was mostly related to condoms. It has helped in identifying information gaps for future research and in highlighting priority areas to inform the design of interventions to improve students' sexual reproductive health.

6. Recommendations

The following recommendations are offered in light of the study's findings:

- 1) Provision of continuous education (during student orientation, and by the Students' Representative Council (SRC)) among all students on campus about contraceptives and how to use them properly given current proliferation of misguided information in the social media directed at adolescents within the age brackets of the University students.
- 2) Commonly known and used contraceptives such as condoms are put at places of convenience for students' easy access and use.

Acknowledgements

The authors are extremely grateful to the Dean, Head of Department and Staff of the School of Nursing and Midwifery, as well as to the leadership of Nursing Students Association, who contributed in diverse ways to the success of the study. We especially thank Dr. Salifu Abukari for reviewing the manuscript.

Our special thanks go to the student respondents, without whom this work would have been impossible.

Conflicts of Interest

The authors declare no conflicts of interest.

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