

**EMERGENCY CONTRACEPTIVE USE AMONG FEMALES STUDENTS  
AT NURSING AND MIDWIFERY TRAINING COLLEGES IN GHANA: A  
CASE STUDY AT DUNKWA-ON-OFFIN**

**ABSTRACT**

**Background:** The purpose of the study was to assess the use of emergency contraceptives among female trainee nurses in Ghana using Nursing and Midwifery Training College, Dunkwa-On-Offin as a case study.

**Methods:** The study employed a case study design. A structured questionnaire was used, which took data on knowledge, perception and use of emergency contraceptives among female nursing students. Descriptive, bivariate, and logistic regression analysis techniques were used to analyze the data, and the level of significance was set at 0.05. Data were analysed with SPSS version 23.

**Results:** The results showed that majority of the respondents 215 (58.9%) were familiar with the purpose of family planning. Again, an overwhelming majority of the respondents (81.1%) said they had heard about emergency contraceptive and had their information from the health workers. It was agreed by the majority (55.9%) that emergency contraceptives were safe for users, hence positive perception about emergency contraceptive. The usage rate for emergency contraceptive use among the respondents was 63.0%. Age of the respondents was found to be statistically significant OR 0.21(CI; 0.43-1.12; p-value=0.000). Also, marital status and level/class were significant (p-value=0.001) and p-value=0.000 respectively.

**Conclusion:** The study concludes that if students are educated on when and how to use emergency contraceptive, the knowledge, perception and usage will help reduce unwanted pregnancies among female nursing students in Ghana. There is the need for service providers either at the facilities or pharmacies to provide adequate information about emergency contraceptive.

**Keywords:** Unwanted pregnancy, abortion, Prevalence

## 1. INTRODUCTION

The term "emergency contraception" (EC), often known as "post-coital contraception," refers to techniques of contraception that can be used to avoid becoming pregnant within the first five days [35]. "Emergency contraceptive pills (ECPs), combined oral contraceptive tablets (the Yuzpe technique), and copper-bearing intrauterine devices (IUDs) are the three main categories of emergency contraception. ECPs entail administering Levonorgestrel (1.5 mg) or Ulipristal acetate (30 mg) in a single dose within five days (120 hours) following unprotected sexual activity. The Yuzpe technique makes use of two-dose combination oral contraceptive pills" [34]. On the other hand, the copper-bearing IUD technique is applied by inserting it within 5 days of unprotected sexual activity [28].

After engaging in unprotected sexual activity, female students are more vulnerable to unintended pregnancies that could result in abortion, complications from abortion, and other health and social issues [35]. Every year, there are about 80 million unintended pregnancies worldwide [1]. 50 million abortions were performed as a result of this worldwide, many of which were unsafe and led to about 80,000 maternal fatalities [3]. In order to use family planning services and choose an effective method of contraception, it is crucial to evaluate one's understanding of and attitudes toward the use of contraceptives.

However, according to the WHO, 225 million women in underdeveloped nations want to put off or stop having children but do not use any form of contraception [4]. "Due to this, one in three women give birth before the age of 20, and pregnancy-related deaths during childbirth are two times more common in this group of women than in women over the age of 20" [2]. More than 14 million abortions take place annually in sub-Saharan Africa (SSA) [7]. It is concerning how many single girls engage in sexual activity. Female students who engage in unprotected sexual activity are more likely to experience unexpected pregnancies, which can result in abortion, complications from abortion, and other health and social issues like infertility and dropping out of school [9]. Unplanned pregnancies and STI exposure have serious consequences for one's physical, psychological, and social well-being [12].

Due to the significant financial, social, and health implications for students and their families, politicians and the general public view the prevention of teenage and unplanned pregnancies as a top priority [10]. "Despite ongoing international investments in female sexual and reproductive health (ASRH) initiatives, challenges like limited knowledge and lack of access to resources and

services continue to prevent effective satisfaction of females' demands for ASRH information and services. In sub-Saharan Africa, where unwanted pregnancies and childbearing continue to be a burden, these restrictions are particularly noticeable” [27].

“The current use of any method of contraception in Ghana is 23 percent among all women and 27 percent among currently married women” [35]. “Moreover, the median age at first sexual intercourse among urban women age 25-49 years in Ghana is 18.8 years. It is thus not surprising that about one-fifth of Ghanaian women age 25-49 years (22 percent) had given birth before reaching age 18, while nearly two-fifths (39 percent) had given birth by age 20” [28].

While many people in Ghana are sexually active, there is a variable amount of awareness, false perceptions, parental and religious dares, or disapproval associated with the use of the many forms of contraceptive methods accessible [14]. Unwanted pregnancies and abortion rates continue to be high despite numerous government initiatives [14]. Premarital sex, unintended pregnancies, and illegal abortions continue to be more common among female nursing students. If the prevalence of unwanted pregnancy, illegal abortions, and high sexual risky behavior is to be reduced, a study should be conducted to evaluate the knowledge on contraceptive use and sexual behaviors within this high risk group. Their research revealed that the vast majority (70.4%) of students who had had sexual contact knew how to use contraception. More than half of sexually active women (58.5%) said they had ever used contraception, while 41.5% said they still did. The majority (74.7%) of the group who reported having had their first sexual experience between the ages of 19 and 24. Pills (16.8%) and condoms (24.3%) were the two most common forms of contraception [16].

A study was conducted which showed that “almost 21% of 244 students with knowledge on contraception were users, 82% of sexually active respondents were non-users while condom was the most common contraceptive method used. Also, 60% and 30% of respondents obtained knowledge about contraception from the media (TV/Radio) and peers (friends) respectively. However, almost 32% of the study participants thought contraceptives are for only adult married persons” [14].

“As the name propose, emergency contraception is intended for occasional or emergency use only and not as a regular contraception. Situations of unprotected intercourse that demand the use of emergency contraception include failure of barrier methods such as slippage, breakage or misuse of condom, sexual assaults, failed coitus interruptus, two or more consecutive missed oral

contraceptive pills, or simply because intercourse was unexpected and therefore contraception had not been used” [21].

“Unwanted pregnancy followed by unsafe abortion can be avoided by using different contraceptive methods including emergency contraceptives” [23]. Several studies conducted among adolescents in Ghana revealed low level of knowledge about contraceptive methods [5].

“The lack of knowledge about emergency contraceptive has resulted in women resorting to unsafe or illegal abortions in several low income countries” [6]. “There were number of reasons found by researchers that attribute or influence the use of contraceptives among adolescent in the country. Poor knowledge about the methods, fears and tales about side effects of some methods of contraception, lack of support and bad influence of family members and sexual partners, religion and traditional beliefs attribute to low use of contraceptives” [12].

In sub-Saharan Africa, peers greatly influence nursing students’ sexual behavior [15]. Some of the influence can be abstinence from sexual activity and choice of contraception and induced abortion. For students to select a type of contraceptive, they choose methods that worked for their peers [32]. Young women's contraceptive decision-making processes are sometimes stuck in between peer and health providers or physicians [31]. “Peer influence is primarily based on shared contraceptive goals, while providers are important for myth clarification and education. Peer influence appeared to be greatest when participants shared emergency contraceptive concerns and goals” [29].

According to a study, pricing and accessibility are important considerations when using emergency contraceptives [8]. Health officials must make EC tablets available to women because religious and cultural beliefs have not prevented their usage [8]. The usage of emergency contraceptives rises as education rises. For instance, 34% of married females with secondary or higher education utilize a method of contraception, compared to 19% of married women without education [11]. “Additionally, the usage of emergency contraception tends to increase as more children are born, rising from 21% of married women without children to 30% of those with three or four children with a slight decline to 27% of those with five or more children” [13].

“In Ghana over the last six years, the use of any method of contraception and any modern method has risen somewhat, from 24% in 2014 to 34% in 2020” [13]. Unplanned pregnancies, unsafe abortions, as well as maternal morbidity and mortality have been averted as a result of the

use of modern contraception [16]. “In 1996 and 2000, oral contraceptives and the Emergency Contraceptive pills (Postinor 2) were licensed respectively” [16]. “Without prescription, emergency contraceptives are easier to obtain from clinics and pharmacies” [19]. The emergency contraceptives on the market include are Postinor 2, Lydia, Lenor, Levon 2 which contains levonorgestrel 1.5mg. From 2010 to 2020, modern methods contraceptive prevalence rate and couple-years of protection have increased over the past decade from 18.7% to 34%, while the unmet need has decreased from 22.2% to 30% [31]. “Knowledge of emergency contraceptive effectiveness is crucial to making an informed choice. The consumer has to comprehend the pros and cons of the contraceptive methods being considered” [8].

Young adults in poor nations face significant obstacles to their reproductive health due to unintended pregnancies. Unplanned and unprotected sexual encounters that result in unwanted pregnancies and abortions are always the result of lack of contraceptive knowledge, poor perception of the effectiveness and accessibility of family planning services, methods, and costs, women's concerns about side effects, and women's, husbands' or family members' objections to the use of contraceptives [3]. “According to a University of Ghana study, even sexually active university students have a high risk of misusing contraceptives because of their lack of awareness and maybe inaccurate information regarding their use. In Ghana, 16% of births are unwanted, 40% are unplanned, and 24% are mistimed, according to records” [5]. The risk of unsafe induced abortions and their sequelae is greatest in young people. According to studies, the widespread use of emergency contraceptives may considerably lower the incidence of unplanned births and, as a result, the morbidity and death rates associated with abortions [17].

“Dunkwa Municipality is among the populated municipalities in Ghana with majority of the people, 388,403 and 458,075 in the (15-19) years and (20-24) years range respectively” [28]. “The disparity between those who know about emergency contraceptive and those who use it is alarming” [33]. “This has implication on unwanted pregnancies at Dunkwa municipality. According to a University of Ghana study, even sexually active university students have a high risk of misusing contraceptives because of their lack of awareness and maybe inaccurate information regarding their use. In Ghana, 16% of births are unwanted, 40% are unplanned, and 24% are mistimed, according to records” [5]. The risk of unsafe induced abortions and their sequelae is greatest in young people. According to studies, the widespread use of emergency contraceptives may considerably lower the incidence of unplanned births and, as a result, the

morbidity and death rates associated with abortions [17]. This study therefore sought to assess the knowledge, perception and prevalence of emergency contraceptives usage. Also, to establish the association between the sociodemographic characteristics of the respondents and the use of emergency contraceptive among female nursing students in Nursing and Midwifery Training Colleges in Ghana, using Dunkwa-On-Offin NMTC as a case study. Research in this area can play an essential role in identifying and drawing interventions to look critically into nursing students' perception and knowledge and use of emergency contraceptives so as to provide baseline data to guide in interventions towards contraceptive use. In this way, government, non-governmental organization and health facilities adopt policy to improve emergency contraceptive use among nursing students in the municipality and the nation at large.

## **2. METHODS**

### **2.1 Study site**

The study was conducted at the Nursing and Midwifery Training College at Dunkwa-On-Offin. The Nursing Training College established in 2007 as Health Assistant Training School. The school started diploma in registered general nursing in 2011 and now accredited with midwifery program. Dunkwa Municipal Hospital serves as the health facility for the practical aspects of the training. The Nursing and Midwifery Training College, is located at the “heart” of Dunkwa-On-Offin adjacent the Dunkwa Municipal Hospital. It is situated in the Upper Denkyira East Municipality of Central Region.

The College consists of the Health Assistant Certificate, Diploma in Midwifery and Registered General Nursing. The school has a population of two thousand one hundred and fifty students (2,150). The Midwifery programme is strictly for females while the Registered General Nursing has both males and females with the females. All the students are Senior High School graduates with certificate in General Arts, Pure Science and Home Economics. The minimum grade for admission is aggregate 24 with admission age between 16 and 35 year.

### **2.2 Study Population**

The study was conducted among female nursing students at Nursing and Midwifery Training College, Dunkwa-On-Offin in the Central Region of Ghana. The study participants comprised of

females between the ages of 16 and 35 years. The participants had to be in school during data collection and willing to participate in the study.

### 2.3 Study Design

The study employed case study design to determine the knowledge and perception on emergency contraceptive use among female nursing students at Nursing and Midwifery Training College, Dunkwa-On-Offin (DNMTC). A case study is an in-depth study of one person, group, or event. In a case study, nearly every aspect of the subject's life and history is analyzed to seek patterns and causes of behavior [16]. Case studies can be used in various fields, including psychology, medicine, education, anthropology, political science, and social work. The purpose of this study design was to learn as much as possible about trainee nurses knowledge and practice of emergency contraceptive so that the information can be generalized to many others. Unfortunately, case studies tend to be highly subjective, and it is sometimes difficult to generalize results to a larger population. While case studies focus on a single individual or group, they follow a format similar to other types of psychology writing [7].

### 2.4 Sample size determination

To get a suitable sample size for the study, Yamane's (1967) statistical formula was used for the determination of the sample size for this study as follows:

$$n = \frac{N}{1 + N(e)^2}$$

n= the required sample size

N= known population size

1= constant

e= standard error (0.05)

With the known population size of 2190 female trainee nurses in the two schools, the minimum sample size for the study was calculated at 332. The 10% non-response rate was included to the minimum sample size to make it 365. Therefore the actual sample size was 365.

## 2.5 Sampling procedure

Stratified and simple random sampling techniques were used. Stratified sampling method determined the number of respondents from each programme. Based on the required sample size of 365, the number of respondents from each stratum (programme) was proportionately calculated using the formula:  $A/B * C$ , where A' is the total number of female nursing students in of a programme, B'= the total number of female nursing students in the two programmes and C'= the determined sample size. This procedure was used for the various strata as shown in Table 1. The sampling frame was created by listing all female students of the College after obtaining the lists from their respective Programme Heads. Simple random sampling method was then used to pick respondents by writing their index numbers of the elements on slips of paper. The papers were folded, put in a bowl and shuffled. The papers were then picked randomly with non-replacement method until the desired sample size of 365 was met.

**Table 1: Proportionate Stratified sampling of respondents**

Facilities	Population	Sample
Health Assistants	465	79
Diploma (RM and RGN)	1685	286
Total	2150	365

## 2.6 Study Variables

**Table 2: Description of study variables**

Variables	Operational definition	Type of variable
<b>Independent variables</b>		
Age	Refers to age of participants	Categorical
Class	Class of participant e.g. form 1, 2 or 3	Categorical
Residence	Residence of participant either day or boarder	Categorical
Guidance	Refers to who is taking care of the participant	Categorical
Parents occupation	Occupation of the participants	Categorical
Knowledge	Awareness of emergency contraceptive	Categorical
Perception	Observation about emergency contraceptive	Categorical
<b>Dependent variable</b>		

Use of emergency contraceptive	Whether participants use emergency contraceptive	Categorical (dichotomous)
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## 2.7 Data collection tool and technique

A self-administered questionnaire, which had both closed and open ended questions was used in the solicitation of information from the respondents. The questions were structured in a way to assist in meeting the objectives of the study. The questions solicited answers on socio – demographics characteristics of the participants, knowledge on emergency contraceptives and perceptions towards the use of emergency contraceptives. Data collection occurred daily until the entire 365 participants responded to the questions.

## 2.8 Pretesting

The questionnaire was pretested on a sample of 20 respondents at Twifo Praso Nursing and Midwifery Training College. It was chosen because of the similarities of the respondents. The outcome of the pretest was used to modify the questionnaire where necessary. The Cronbach Alpha co-efficient was calculated for the questionnaire and presented in a table as shown below:

**Table 3: Reliability scores of questionnaire subscales**

Subscales	No. of items	Cronbach Alpha
Knowledge	12	0.846
Perception	15	0.832
Prevalence	15	0.803
Overall	42	0.802

## 2.9 Data Processing and Analysis

Questionnaire administered were double checked for completeness and internal consistencies. The data entry sheet was designed and prepared with appropriate variable definitions and codes and place in order to minimize errors during the entry process. The data were sorted in classes of the respondents, coded and cleaned in order to ensure accuracy of information. Double entry of

data aided in detecting discrepancies to ensure corrections are made where needed. The final data were then entered and finally imported into SPSS version 25.0 for the final analysis.

The categorical variables were presented in percentages, mean, standard deviation and compared with Pearson chi-square. The analysis of association between normally distributed variable was done using Pearson correlation and odds ratio and regression analysis. A probability value of less than 0.05 was considered as having a significant statistical association. Odds ratio sensitive analysis was added to the bivariate analysis to exclude all confounding variables for validity and reliability of the test. Missing data were addressed by referring to the primary data to enter any oversight data. Any data genuinely missing from the primary data were excluded. To reduce missing data, the investigator made sure respondents complete all items on the questionnaire before retrieval.

### 3. RESULTS

#### 3.1 Socio-demographic characteristics of respondents

From table 4, almost half of the respondents 172 (47.1%) were within the age range of 21-25 years while 10 (2.7%) were within 31-35 age range. While 286 (78%) of the respondents were diploma students, 79 (22%) were Nurse Assistant Clinical students. An overwhelming majority of the respondents 303 (83.0%) were Christians while only 3 (0.8%) were Traditionalists. The majority of the respondent 302 (82.7%) were single as against 5 (1.3%) who were married. On level/class of respondents, 124 (33.9%) were level 100 students while 120 (32.8%) came from level 200.

**Table 4: Socio-demographic characteristics of respondents**

<b>Variables</b>	<b>Frequency, n=365</b>	<b>Percentage (%)</b>
<b>Age range of respondents</b>		
16-20yrs	35	9.6
21-25yrs	172	47.1
26-30	148	40.5
31-35	10	2.7
<b>Programme</b>		
Diploma	286	78
NAC	79	22
<b>Religion</b>		
Christian	303	83.0

Muslims	59	16.1
Traditionalist	3	0.8
<b>Marital status</b>		
Single	302	82.7
Co-habiting	58	15.8
Married	5	1.3
<b>Level/Class</b>		
Level 100	124	33.9
Level 200	120	32.8
Level 300	121	33.1

### 3.2 Knowledge on emergency contraceptive

Table 5 shows respondents knowledge about emergency contraceptives. Majority of the respondents 215 (58.9%) were familiar with the purpose of family planning while 150 (41.1%) said no. Again, an overwhelming majority of the respondents (81.1%) said they have heard about emergency contraceptive before as against 69 (18.9%) who said no. most of the respondents 140 (47.2%) who have heard about emergency contraceptives had the information from the health workers. Furthermore, majority of the respondents 306 (83.8%) were aware of the risks associated with unprotected sex hence stating unwanted pregnancy as the major risk associated with unprotected sex. More than half of the respondents 281 (77.0%) knew emergency contraceptive can be used to prevent unwanted pregnancy after unprotected sex. **Most of the respondents 209 (57.2%) rated their knowledge on emergency contraceptive as high.**

**Table 4: Knowledge on emergency contraceptive**

Variables	Frequency	Percent
<b>Are you familiar with family planning?</b>		
Yes	215	58.9
No	150	41.1
<b>Have you ever heard about emergency contraceptive before?</b>		
Yes	296	81.1
No	69	18.9
<b>If yes, source of information</b>		
Health workers	140	47.2
Media	77	26.0

Partner	27	9.1
Relative/friends	52	17.5
<b>Are you aware of the risks associated with unprotected sex?</b>		
Yes	306	83.8
No	59	16.2
<b>If yes, what are some of the risks</b>		
Unwanted pregnancy	197	57.9
Contracting HIV/AIDS	78	22.9
Contracting STI	65	19.1
<b>Do you know that ECs can be used to prevent unwanted pregnancy after unprotected sex?</b>		
Yes	281	77.0
No	84	23.0
<b>How will you rate your knowledge on EC</b>		
Low	50	13.6
Average	209	57.2
High	106	29.0

Figure 1 shows the modern emergency contraceptives that the respondents knew about. Majority of the respondents 191 (52.3%) said they knew about Postinor 2 while 5 (1.4%) did not know about any emergency contraceptive.

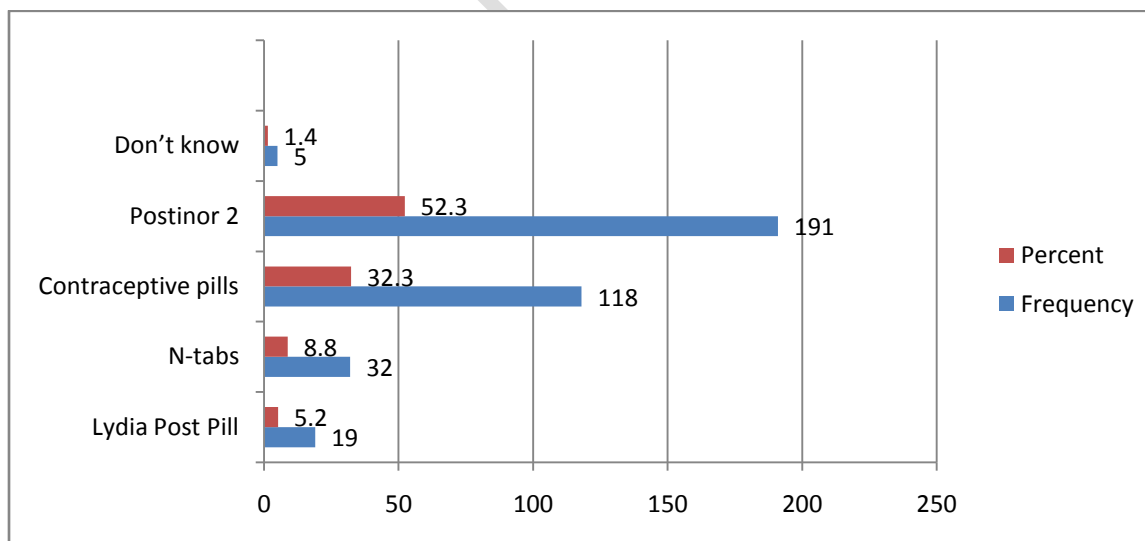


Figure 1: Which modern emergency contraceptive do you know?

Figure 2 depicts respondents' knowledge on when to use emergency contraceptives to effectively prevent pregnancy after sexual intercourse. Virtually half of the respondents 129 (35.3%) said the emergency contraceptives should be used within 72 hours after sex while 82 (22.5%) said it should be taken within 24 hours. This put the knowledge of respondents on EC average.

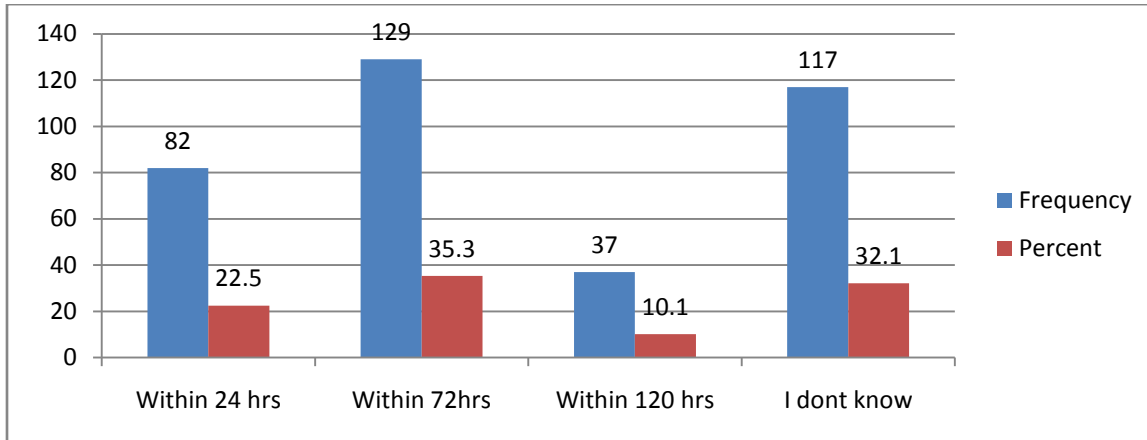


Figure 2: When to use emergency contraceptives to effectively prevent pregnancy after sex

**\*low knowledge=0-30%, Average=31-60% and High=61-100%**

Figure 3 presents where respondents were able to access emergency contraceptives. About half of the respondents 143 (39.2%) accessed the contraceptives from their friends while 9 (2.5%) had it from the chemical shops.

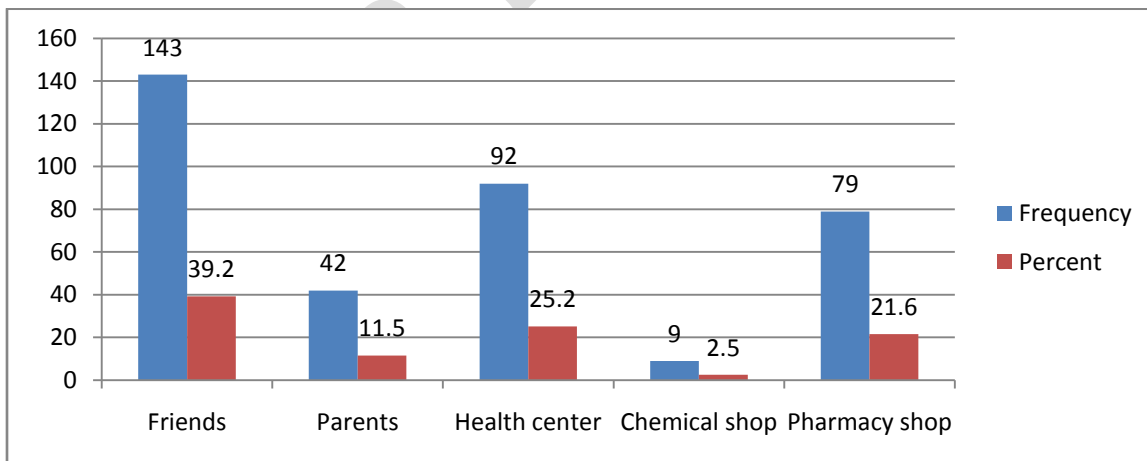


Figure 3: Where emergency contraceptive can be accessed

### 3.3 Perception about emergency contraceptive use

Table 6, shows the perception of respondents about emergency contraceptive use among female **trainee nurses**. Most of the respondents (38.4%; 32.4%) agreed it was against their religious doctrines to use emergency contraceptives. Majority of the respondents (38.4%; 32.6%) agreed that they used emergency contraceptives even if it was against their religious beliefs. Again, most of the respondents (32.1; 35.3%) agreed that emergency contraceptive has significant side effect while the minority disagreed. Furthermore, majority of the respondents (67.6%) agreed that emergency contraceptives promote promiscuity hence increase the prevalence of HIV/AIDS and STIs. Also, most of the respondents (70.4%) agreed that they would take emergency contraceptives if they had unintended sexual intercourse. Lastly, it was agreed by the majority (55.9%) that emergency contraceptives are safe for its users.

**Table 5: Perception about emergency contraceptive use**

<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>EC use is against my religious doctrines</b>		
Strongly agree	140	38.4
Agree	119	32.6
Disagree	69	18.9
Strongly disagree	37	10.1
<b>I will use EC even if it is against my religious beliefs</b>		
Strongly agree	100	27.4
Agree	127	34.8
Disagree	88	24.1
Strongly disagree	50	13.7
<b>EC has significant side effects hence fear to use it</b>		
Strongly agree	117	32.1
Agree	129	35.3
Disagree	64	17.5
Strongly disagree	55	15.1
<b>EC increases rate of HIV/AIDS and other STIs</b>		
Strongly agree	129	35.3
Agree	118	32.3

Disagree	75	20.5
Strongly disagree	43	11.8
<b>Unintended sexual intercourse lead to EC use</b>		
Strongly agree	99	27.1
Agree	158	43.3
Disagree	75	20.5
Strongly disagree	33	9.0
<b>Emergency contraceptives are safe for its users</b>		
Strongly agree	86	23.6
Agree	118	32.3
Disagree	115	31.5
Strongly disagree	46	12.6

### 3.4 Prevalence of emergency contraceptive usage

The table 7 shows the prevalence of 63.0% emergency contraceptive use among the female **trainee nurses**. Most of the respondents 180 (78.2%) used emergency contraceptive sometimes while 20 (8.6%) used it most of the time. Almost half of the respondents 104 (45.2%) used Postinor 2 as their emergency contraceptive. Also, most respondents 146 (63.4%) used emergency contraceptives when their condoms break during sexual intercourse.

**Table 6: The prevalence of emergency contraceptive usage**

Variables	Frequency	Percent
<b>Have you ever used emergency contraceptive before?</b>		
Yes	230	63.0
No	135	37.0
Total	365	100.0
<b>If yes how often do you use EC</b>		
Sometimes	180	78.2
Most of the time	20	8.6
All the time	30	13.0
Total	230	100.0
<b>What drugs/method do you use as EC?</b>		
Combined oral pills	82	36.0
N-tab	18	7.8
Lydia post pill	18	7.8
Postinor2	104	45.2
Hot bath and douching immediately after sex	8	3.4

Total	230	100.0
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**When do you use emergency contraceptives?**

Condom breakage	146	63.4
Failed Interruptus Coitus	20	8.6
Miscalculation of rhythm method	5	2.1
Unexpected unprotected	59	25.6
Total	230	100.0

**4.6 The association between the socio-demographic characteristics of respondents and the use of emergency contraceptive**

Table 8 shows the association between the socio-demographic characteristics of the respondents and the use of emergency contraceptives. Age of the respondents was found to be statistically significant (p-value=0.000). Also, marital status of respondents and level/class were significant (p-value=0.003) each.

**Table 7: Bivariate analysis of association between the socio-demographic characteristics of respondents and the use of emergency contraceptive**

Independent Variables	Have ever used EC before		Total f(%)	$\chi(p\text{-value})$
	Yes	No		
<b>Age of respondents</b>				
16-20	5(1.4)	5(1.4)	10(2.7)	
21-25	125(34.2)	47(12.9)	172(47.1)	
26-30	85(23.3)	63(17.3)	148(40.5)	15.683(0.001)*
31-35	5(1.4)	5(1.4)	10(2.7)	
Total	230(63.0)	135(37.0)	365(100)	
<b>Programme</b>				
Diploma	200(54.7)	87(23.8)	287(78)	
NAC	70(19.1)	9(2.4)	79(22)	2.462(0.292)
<b>Religion of respondents</b>				
Christian	183(50.1)	120(32.9)	303(83.0)	
Muslim	42(11.5)	10(2.7)	52(14.2)	9.356(0.019)
Traditionalist	5(1.4)	5(1.4)	10(2.7)	
<b>Marital status</b>				
Single	187(51.2)	115(31.5)	302(82.7)	

Co-habiting	29(7.9)	10(2.7)	39(10.7)	13.699(0.003*)
Married	19(5.2)	5(1.4)	24(6.6)	
<b>Level/class</b>				
Level 100	81(22.2)	43(11.7)	124(33.9)	
Level 200	91(24.9)	29(7.9)	120(32.8)	8.837(0.003)*
Level 300	85(23.2)	36(9.8)	121(33.1)	

Table 9 shows the multivariate logistic regression on association between the socio-demographic characteristics of the respondents and the use of emergency contraceptives. Age of the respondents was found to be statistically significant OR 0.21 (CI; 0.43-1.12) and p-value = (0.000). Also, marital status of the respondents was statistically significant (p-value=0.001). Level/class of the respondents appeared to be highly significant OR 1.70 (CI 0.97-2.97) and p-value=0.000).

**Table 8: Multivariate logistic regression on socio-demographic factors and the use of EC**

Independent Variables	Have ever used EC		OR (95% CI)	$\chi^2(p\text{-value})$
	Yes	No		
<b>Age of respondents</b>				
16-20	5(1.4)	5(1.4)		
21-25	125(34.2)	47(12.9)	0.21(.04,-1.12)	
26-30	85(23.3)	63(17.3)		15.683(0.000)*
31-35	5(1.4)	5(1.4)		
<b>Programme</b>				
Diploma	200(54.7)	87(23.8)		
NAC	70(19.1)	9(2.4)	0.75(.19,3.00)	1.699(0.009)
<b>Religion of respondents</b>				
Christian	183(50.1)	120(32.9)		
Muslim	42(11.5)	10(2.7)	1.65(.94,2.90)	8.837(0.007)
Traditionalist	5(1.4)	5(1.4)		
<b>Marital status</b>				
Single	187(51.2)	115(31.5)		
Co-habiting	29(7.9)	10(2.7)	1.70(.97,2.97)	30.535(0.001)*
Married	19(5.2)	5(1.4)		
<b>Level/class</b>				
Level 100	81(22.2)	43(11.7)		
Level 200	91(24.9)	29(7.9)		89.387(0.000)*

## 4. DISCUSSION

### 4.1 Knowledge of respondents on emergency contraceptives

This study revealed that more than half 58.9% of the respondents were familiar with the emergency contraceptives. The findings also showed that an overwhelming majority (81.1%) of the respondents said they have heard about emergency contraceptive before. Most of the respondents 141 (43.3%) who have heard about emergency contraceptives had the information from the health workers. Also, 227 (62.2%) had been involved in sexual intercourse before. Furthermore, majority of the respondents 306 (83.8%) were aware of the risks associated with unprotected sex hence stating unwanted pregnancy as the major risk associated with unprotected sex. More than half of the respondents 281 (77.0%) knew emergency contraceptive can be used to prevent unwanted pregnancy after unprotected sex.

Knowledge on emergency contraceptive in this study was higher than that of Takoradi Technical University where majority of the students (74.6%) sampled had prior knowledge of emergency contraceptive. A most of them heard of it through a formal lecture [6]. The difference could be due to the fact that most of the female **trainee nurses** in the this current study felt shy to go to health facilities for long term family planning methods hence the use of emergency contraceptives after sexual intercourse.

The findings corroborate with a study undertaken at the University of Ghana also revealed an overwhelming majority of the respondents (87.9%) stated they had knowledge on some emergency contraceptives such as Postinor 2. The students that study had their information from different sources, (48.5%) said their source of information was from the media and (36.5%) stated their source as friends and relatives. The rest of the respondents (15%) got information from health professionals [16]. However, in this study most of the students had their knowledge from the health workers. On the contrary, the finding is higher than a study among female university students in Uganda which indicated that (45.1%) who knew about emergency contraceptive pills and friends, media and school were their sources of information [31].

To find out if the students had enough knowledge on emergency contraceptive a question on the duration of time for the effectiveness of emergency contraceptive was asked. Most of the respondents stated 72 hours after sexual intercourse. This is in support with a study where those

who had prior knowledge knew the correct period for taking ECPs. However quite a substantial number (40.7%) did not know the time that it should be taken [18]. The efficacy of the emergency contraceptive method requires correct timing of use. The longer one delays after unprotected sex taking emergency contraceptive, the greater the probability of unwanted pregnancy. It was obvious in this research that understanding of correct timing was low for emergency contraceptive use. Emergency contraceptive knowledge is very critical in the quest to avoid unwanted pregnancies among students because it could negatively affect their academic work.

The low level of students on good timing for emergency contraceptive use might be due to the issue of providers failing to provide appropriate emergency contraceptive details when dispensing with the notion that it will promote promiscuity among female nursing students. Students were also informed of the existence of emergency contraception emergency pills from various sources of information. Media-created awareness may not be sufficiently thorough to include understanding of adequate method use, content, and efficacy. This low level of knowledge on timing may also be due to the lack of a Careers and Counseling Centers in the various schools that enhances students' reproductive health programmes and helps to incorporate these concerns into fresh student orientation programmes. Unwanted pregnancies have become a problem for many students, and school authorities need to provide students with the needed information on emergency contraceptive use.

#### **4.2 Perception of nursing students about emergency contraceptive use**

The findings showed that the majority of the respondents agreed it was against their religious doctrines to use emergency contraceptives. Again, most of the respondents agreed that emergency contraceptive has significant side effect hence their failure to use them. Furthermore, majority of the respondents agreed that emergency contraceptives promote promiscuity hence increase the prevalence of HIV/AIDS and STIs. Also, most of the respondents agreed that they would take emergency contraceptives if they had unintended sexual intercourse. Lastly, it was agreed by the majority that emergency contraceptives are safe for its users.

The findings are in support with a research at the University of Ghana that disclosed that students had the understanding and appreciated the significance of emergency contraceptives, but most believed they preferred not to use emergency contraceptives because they abstained or feared their side effects [1]. Few students in Uganda also feared to use emergency contraceptives

because of the side effects. Majority of the respondents did not fear about the side effects of emergency contraceptives because of the inadequate knowledge on the use of emergency contraception and a higher number of them did not experience any side effect.

There are number of reasons found by researchers that attribute or influence the use of emergency contraceptives among female **trainee nurses** in the country. Poor knowledge and perception about the methods, fears and tales about side effects of some methods of contraception, lack of support and bad influence of family members or friends and sexual partners, religion and traditional beliefs attribute to low use of contraceptives which supports the findings of the current study. For example in sub-Saharan Africa, peers greatly influence females' sexual behavior and contraception use [14]. This implies that **trainee nurses** and young women's contraceptive decision-making processes are sometimes stacked in between peer and health providers or physicians. Peer influence is primarily based on shared contraceptive goals, while providers are important for myth clarification and education. Peer influence appeared to be greatest when participants shared contraceptive concerns and goals. "In Ghana the reasons for non-use of contraceptives include fear of side effect and opposition to contraceptive use on religious grounds. Partner refusal and the fact that some female **trainee nurses** feel they are not susceptible to pregnancy are some reasons why female **trainee nurses** do not use contraceptives" [15].

According to a study, "the fundamentalist opinion leaders and conservative politicians have stood against the introduction emergency contraceptives in many countries of the world, mentioning moral issues. This was a result of strong opposition by the Catholic Church as well as anti-abortion groups" [32]. Thus women are hesitant to use emergency contraceptives if they believe it is an abortifacient. A study done in Sweden showed that 33% of the respondents considered emergency contraceptives pills as a kind of abortion drug [19]. This finding was not different from a study done in Nigeria in which 25.8% of the participants also considered use of emergency contraceptives as a form of abortion. However, in this study respondents see emergency contraceptives as agents of promiscuity.

#### **4.3 Prevalence of Emergency Contraception Use**

The prevalence of emergency contraceptive use among the female **trainee nurses** was 63.0%. Most of the respondents 192 (52.6%) used emergency contraceptive sometimes. Majority of the respondents 184 (58.7%) used Postinor 2 as their emergency contraceptive. Also, most

respondents 173 (55.2%) used emergency contraceptives when their condoms break during sexual intercourse. This may be because of the higher level of education among respondents in this current study since they are second cycle students. The respondents might have researched to know the importance of emergency contraceptives.

“The proportion of female students who had ever used an emergency contraceptive was 60.0% this is higher compared to the study conducted in Takoradi Technical University and University of Ghana where 28.4% and 29.6% respectively of respondents had ever used an emergency contraceptive” [6]. “The rate of use was low in University of Ghana because most students were aware of ECs and had the knowledge but had never used any because they abstained” [10]. “The rate of use is also lower in this study as compared to a study in Ethiopia where 82.97% of students used emergency contraceptives” [8].

The use of emergency contraceptive was high in this study which may be due to the fact that higher majority of the respondents were sexually active. Also, there was no in-depth appreciation of the study participants about their purpose for emergencies since they had a low level of knowledge on when to use the emergency contraceptives. From the analysis, health workers were the major source of information and access to information is influential to the use of emergency contraceptives hence this could contribute to the high level of emergency contraceptive use.

Also, most of the students who lived on campus used emergency contraceptive more because getting access to emergency contraceptive pills would be easier through their friends and mostly engage in sexual intercourse since they are living on their own with no parental guidance. Those who experienced no side effects of the emergency contraceptive pills might continue to use the emergency contraceptive pills. This is of concern to public health because studies have shown that if emergency contraceptive pill is used several times, the danger of unwanted pregnancy rises.

“Over the past 35years, the highest value of contraceptive prevalence in Ghana was 28.60% in 2015, while its lowest value was 5.20% in 1988. In relation to the use of emergency contraceptive pills, a research conducted disclosed the accessibility and affordability are factors that cannot be ignored” [31]. Some religious and cultural beliefs have not hindered the use of emergency contraceptive pills and therefore health officials must make emergency contraceptive pills accessible to women.

#### **4.4 The association between the socio-demographic characteristics of respondents and the use of emergency contraceptives**

The findings revealed that age of the respondents was statistically significant to the use of emergency contraceptive among the students OR 0.21(CI0.43-1.12; p-value=0.000). Also, marital status and level/class of the respondents were significant. From the analysis, respondents within the age 21-25 used emergency contraceptive. This implies that individuals' age influences their decision to use emergency contraception. Age influences one's sexual behavior and knowledge about pregnancy so after engaging in sexual intercourse one might take an emergency contraceptive to avoid any unwanted pregnancy. Support from parents would also influence one's decision to use emergency contraceptive. When a female stays with the parents it will be easier for them to accept and use emergency contraceptive since they would not like to be pregnant for their parents to withdraw them from school.

Level/class was statistically significant to the use of emergency contraceptive. A study on the socio-demographic factors on the usage of modern contraceptive by females in Ghana's at Asuogyaman district disclosed that about 97% of the survey participants educational level influenced the use of contraceptive method [6]. It also showed that in the research area, the marital status and religion did not influence modern contraceptive use among females. Contraceptive use is associated with formal education, increased wealth and unmarried partnership, while Muslims women are not likely to use contraceptives than the female Christians [9]. A survey conducted in Nkwanta also revealed that, less female elites, beliefs, social or cultural and communication among couples also played a critical part in the modern family planning usage [12].

#### **4.5 Limitations of the Study**

A crucial challenge that the researcher encountered in the study was how to obtaining support from target population due to the sensitive nature of the study however the questions were worded in such a way that the sensitivity was reduced. Again, social desirability bias was introduced as the response was self-reported hence the respondents were encouraged to give frank answers.

## **5 CONCLUSION**

The knowledge on when to use the emergency contraceptive was low hence most of the respondents did not get the desired effects of the emergency contraceptives. The perception on emergency contraceptive use was good since respondents agreed that it was safe to use emergency contraceptives to prevent unwanted pregnancies. Socio-demographic factors that influenced the use of emergency contraceptive included age, marital status and level/class of the respondents. The study concludes that if female student nurses are educated on when and how to use emergency contraceptive, the desired effects, perception and prevalence rate would be increased within the female student population in Ghana. Based on the findings, the study recommends that health care agencies and family planning advocates should educate nursing students in family planning education and sensitization programmes. This will enable students to have a better understanding, so that the emergency contraceptive is not mistaken for a regular family planning method. Also, there is the need for service providers either at the facilities or pharmacies to provide adequate information about emergency contraceptive to the students such as the correct timing and side effects in order to make it effective. Further studies should be done on the relationship between source of information on emergency contraceptive and the use of emergency contraceptive.

## **6. ETHICAL APPROVAL AND CONSENT**

Ethical clearance and approval was sought from The Ghana Health Service Ethical Committee. Also, written consent was sought from the respondents as well as staff members of the College in the participating schools. The participants were given clear explanations on the objectives and details of the study as well as its benefits. Those who agreed to be a part of the study asked to give acknowledgement by signing the consent form. They were also made aware that, notwithstanding their consent given, they were free to pull out from the study at any point in time they felt they did not want to continue. To ensure confidentiality, student's identities were remained anonymous and undisclosed at every point of the study.

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