

**Awareness and Utilization of Emergency Contraceptives: A Survey
among Ghanaian Tertiary Students**

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ABSTRACT

BACKGROUND: Unplanned pregnancies have become a public health concern globally. It has been linked to unsafe abortion and maternal mortality. According to the World Health Organization, developing countries bear nearly all the burden of the 22 million abortions and two thirds of the abortion related mortalities each year. Ghana is one of the developing countries with high prevalence of unplanned pregnancies and unsafe abortions. Emergency contraceptives (EC) are the only female contraceptive method that offers women the opportunity to prevent pregnancy after unprotected sex. However, little is known about its utilization among women in Ghana. This study investigated the knowledge and utilization of EC among tertiary students in the Bolgatanga Municipality of the Upper East Region of Ghana.

METHODS: This cross sectional study was conducted in the Bolgatanga Municipality of the Upper East Region of Ghana from February to April, 2016. Participants were selected using simple random sampling. A structured questionnaire was administered to 300 participants. The data was analyzed using Spss version 21.0.

RESULTS: Majority (85.9%) of the participants were between the ages of 15-25 years, single (82.8%) and Christians (75.0%). Among the participants, 72.4% were sexually active and 17.8% have ever been pregnant. Among those reporting ever being pregnant, 31 (72.1%) of them stated that the pregnancies were unplanned. Over 80% of the participants had knowledge on EC. Those who were sexually active had more knowledge than those who were not ($p=0.026$). Teachers (51.6%) and friends (41.5%) were the main source of information for the students. Only 33.3% of those who have ever heard of EC ever used it with 83.8% of them using it more than once.

CONCLUSION: There was high level of knowledge of EC among participants but important gaps were identified. Sexual activity and religion were important factors in determining the use of EC.

KEY WORDS: Emergency contraception, Bolgatanga Municipality, Upper East Region, Post-Secondary, Utilization, Awareness, Unplanned pregnancy

Background

Emergency contraceptives (ECs) also known as “post coital method”, “morning after pill “ or “second chance” is the only method of contraception that offers women the opportunity to prevent unplanned pregnancy after unprotected sex, contraceptives failure or incorrect use(1–3). There are numerous methods of emergency contraceptives including the pills; levonorgestrel (progestin-only, Postino-2), ulipristal acetate (progesterone modulators), mifepristone (antiprogestone synthetic steroids), combine oral contraceptive pills (Yuzpe method), and the copper intrauterine device (IUD). However, the levonorgestrel and the IUD are the most known and widely used (4,5). These methods are 52 %-98% effective depending on the method and the time it is used after the unprotected sex. It is up to 5days effective after unprotected sex(6,7). Their mechanism of action is either to delay, inhibit ovulation or prevent the implantation of a fertilized ovum but does not in any way affect an already established pregnancy (5,8).

Unplanned pregnancies has attendant problems; unsafe abortion and maternal morbidity and mortality. These pregnancies have become a public health concern worldwide. Each year, about 38% percent of the pregnancies that occur globally are unintended (9,10). According to the World Health Organization, about 25% of all pregnancies that occurred during the period 2010 to 2014 resulted in induced abortion. Globally, 22 million unsafe abortion occur annually. Over 90% of these abortions occur in developing countries. Also, two-thirds of all abortion related deaths worldwide, occur in Africa(2). Unsafe abortion is one of the leading causes of maternal mortality accounting for 13% of global maternal mortality. Maternal mortality is seen as the

easiest preventable cause of death by the World Health Organization (11,12). In Ghana, unsafe abortion accounts for 11% of all maternal deaths (13).

Emergency contraceptives reduces the possibilities of unplanned pregnancies after unprotected sex(2,3). Increasing the awareness level, availability and utilization of emergency contraceptives is essential for the reduction of unplanned pregnancies and the resultant unsafe abortion in developing countries (14,15).

Although we came across studies investigating knowledge and utilization of emergency contraceptives in Ghana, very few of these studies were conducted among tertiary students. Tertiary students are generally at an age that they are sexually active and prone to unplanned pregnancies which may result in unsafe abortions. Thus investigating their knowledge and usage of emergency contraceptive and its associated factors will make available data that will inform the design of future interventions.

This study assessed the awareness level and utilization of emergency contraceptives among tertiary students in the Bolgatanga Municipality of Ghana.

Methods

Study area and participants

This is a cross sectional study conducted in the Bolgatanga Municipality, the capital city of the Upper East region of Ghana. This study was conducted from February to April, 2016. The Bolgatanga Municipality is one of the thirteen Districts and Municipalities of the Upper East Region. It is the largest urban centre in the region. It houses four of the region's nine post-secondary institutions; three nurses training colleges and a polytechnic. It is located

approximately 779 km north of Accra, Ghana's capital city. The participants of the study were tertiary (post-secondary school) females who were in their next level of study.

The sample size was calculated to be 257 using the Cochran formula, based on the assumption that 21.2% (16) of the population had ever used emergency contraceptives. In order to adjust for the possible loss of participants, the sample size was recalculated to be 285 ($257/0.90$) assuming a response rate of 90%. Three hundred participants were therefore included in the study. They were contacted at their places of industrial attachment. Information about the study and data collections procedures were explained to the participants. Those agreed to participate were taken through the consent processes and subsequently provided with the questionnaire to complete. Participants were told they could decide to withdraw from the study anytime without any conditions attached. Their inclusion was on voluntary basis. The purpose of the study and the assurance of confidentiality of information given during the study were explained to participants. They were also told they could decide not to answer any question they were not comfortable with. At the end, 297 agreed to participate resulting in a 99% response rate. Ethical approval was given by the ethics committee of the University for Development Studies' School of Allied Health Sciences.

Data collection methods

Data was collected using a structured questionnaire that assessed demographic data of participants, their knowledge level of EC and utilization. The questionnaire was pretested in the University for Development Studies using ten (10) students. The necessary corrections were made with the main data collection activity. Participants were given the questionnaire to answer at their own convenience. The researchers then went back to each of them to retrieve the answered questionnaire.

Data analysis

The data was entered on excel and analysed using SPSS version 21.0. Data was presented as frequency tables. Findings were also compared using cross tabulations. A p-value of less than 0.05 at 95% confidence interval was considered significant.

Results

Table 1 presents the demographic data of participants. The majority 225(75.8) of the participants were between the ages of 21-25 years with a mean age of 23 and standard deviation 3 years. Also, 246(82.8%) were single and 223(75.0%) Christians. Among these, 215(72.4 %) of them were sexually with only 82(27.6%) who have never had sex. Forty- three participants (20.0%) had ever been pregnant with 31(72.1%) stating the pregnancies were not desired.

Table 1: Socio-demographic data of respondents

Variable	Frequency (%)
Age	
15-20	36(12.1)
21-25	225(75.8)
26-30	31(10.4)
31-35	4(1.3)
36-40	1(0.3)

40-45	0(0.0)
Marital status	
Single	246(82.8)
Married	38(12.8)
Divorced	12(4.0)
widow	1(4.0)
Religion	
Christian	223(75.0)
Islam	71(24.0)
Traditionalist	3(1.0)
Type of institution	
Nurses Training College	243(81.8)
University	35(11.8)
Polytechnic	19(6.4)
Sexually active	
Yes	215(72.4)
No	82(27.6%)
Ever been pregnant (n= 215)	
Yes	43(20.0)
No	172(80.0)
Was pregnancy desired (n=43)	
Yes	12(27.9)

No	31(72.1)
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Table 2 shows participants' knowledge level of EC. Majority, 258 (87.0%) of them were aware of EC. Teachers, 133 (51.6%) and friends, 107 (41.5%) Doctors/Nurses 18(0.7%) were the sources of information of emergency contraceptives. The most common type of EC known by the participants were pills 233(90.3%) followed by IUD 25 (9.7%). Out of the total number of participants, 225(87.2%) of them were able to state the right use of EC and were also aware of the fact that it can fail (91.9%). Majority (72.5%) also had knowledge of the contraindications to EC. However, only 39.1% of those who had knowledge of EC were able to mention the right time to take the pill after unsafe sex.

Table 2 Information on EC

Variables	Frequency (%)
Ever heard of EC	
Yes	258(87)
Source of information	
Teachers	133(51.6)
Friends	107(41.5)
Doctors/nurses	18(0.7)
Where to purchase EC	
Pharmacy	212(82.2)
Hospital	45(17.4)
Supermarket	1(0.4)
Types of EC	
Pills	233(90.3)
IUD	25(9.7)
Uses of EC	

Prevention of unwanted pregnancy	225(87.2)
Treatment of STI	29(11.2)
Abortion	4(1.6)
Timing of EC	
Before sex	144(55.8)
1-5 days after sex	101(39.1)
Anytime	13(5.0)
Contraindication of EC	
Yes	187(72.5)
No	71(27.5)
Whether EC can fail	
Yes	237(91.9)
No	21 (8.1)

Table 3 presents data on the utilization of EC by participants. Among those who reported awareness of EC, 33.3% (n=86) of them have ever used the method with over 90.0% using it more than once. The use of EC was suggested by friends (69.8%) and partners (27.9%). Those who have never used EC mentioned religion (65.1%) and fear of infertility (34.9%) as their reasons for the non-usage

Table 3 Utilization of EC

Variables	Frequency (%)
Ever used EC	
Yes	86(33.3)
No	172(66.7)
No. of time ever used EC	

Once	14(16.3)
Twice or more	72(83.7)
Reasons for not using EC	
Fear of infertility	60(31.3)
Religious reasons	112(58.3)
Fear of ill Health	9(4.7)
STIs	11(5.7)

As shown in the table 4, participants who were sexually active were more likely to have heard of EC compared to those that were not.

Table 4 Factors influencing the utilization of EC

Variable	Sexually active (n=215)	Have never had sex (n=82)	p-value
Ever Heard of EC			
Yes	200(93.0)	69(84.1)	0.026
No	15(7.0)	13(15.9)	
Knows uses of EC			
Yes	173(80.5)	69(84.1)	0.508
No	42(19.5)	13(15.9)	
Knows when to use			
Yes	101(47.0)	43(52.4)	0.437

No	114(53.0)	39(47.6)
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Discussion

Though majority of the participants of the study have heard of emergency contraceptives, this did not translate to its utilizations. In addition, participants who had awareness on EC were significantly more likely to be sexually active and to report ever using it.

The findings of this study indicated 87% of the participants have heard of emergency contraceptive. Our results is similar to what was reported among Ethiopian undergraduate female students where 84.2% of studied subjects had knowledge of emergency contraception(17).

However, the knowledge of emergency contraception were much higher in our study than that reported among women of reproductive age in the Tamale Metropolis (69.0%)(14) and the 41.9% among graduating female students of Jimma University, Southwest Ethiopia (15). This could be attributed to cultural and demographic differences.

An important finding of the study was that students who were sexually active were more likely to report having heard of EC. There was a statistically significant association between contraceptive knowledge and being sexually active ($P \leq 0.026$). Women who were sexually active had more knowledge of emergency contraceptives than their counterparts who had not started sexual activities.

Over 87% of the study participants who have ever heard of emergency contraceptives stated what emergency contraceptives are used for, where one can purchase them, the types of emergency contraceptives and also the knowledge of failure. This high level of knowledge may be

attributed to the fact that 81.8% of the participants were nursing students at various levels of training.

Although the participants had high level of knowledge of EC, some gaps in knowledge were identified. Only 39% of the participants who had knowledge of EC were able to state the time frame within which emergency contraceptives are able to prevent pregnancy after unprotected sex. However, this is lower than the reported among women of reproductive age in the Tamale Metropolis where 85% of studied subjects knew the exact time frame after unprotected sex, within which EC can prevent pregnancy (14) but similar to the 38% in the study conducted among reproductive age women in California (18).

Several studies have identified friends as the main source of information about emergency contraceptives (16,19). However, we found teachers to be the main source of information in this study (51.6%). In view of the fact that majority of the study participants were student nurses whose teachers are qualified nurses, it is just right to say this findings agrees with (14) who identified health workers as the main source of information about emergency contraceptives.

On the utilization of emergency contraceptive, only 33.3% of those who have ever heard of emergency contraceptives used EC with over 90% of them using EC more than once. This is slightly similar to the 36.2% and 40% of EC utilization reported among female students in Mizan Tepi University, south west Ethiopia and women in their reproductive age in the Tamale Metropolis respectively (10,14). It is however higher than the 11.2% and 24.5% of EC utilization reported among Indian educated women and Egyptian women aged 19-49 years respectively (20)

Among participants who reported ever being pregnant, 72.1% were unplanned. This is higher than the global figure of unplanned pregnancies (13). Given that majority of these students were

within the ages of 21-25 years (75.8%) and were single (82.8%), a large proportion of them may not be ready for a family yet. There is thus the likelihood that most of these unplanned pregnancies may result in abortion with the possibility of some being unsafe. There is evidence indicating a strong association between unplanned pregnancies and unsafe abortions(21).

Religion (65.1%) and fear of infertility (34.9%) were the reasons for non-utilization of EC among the study participants. Participants were either Christians or Muslims. Each of these religions have their own beliefs about emergency contraception with some believing it is another form of chemical abortion. Despite the explanations given by experts on the **safety** of EC, the Catholic Church **forbids her members from taking any form of contraception, including EC. The Catholics believed that EC** has anti-implantation effect **which** involves intercepting the origin of life. Therefore, **the Catholic Church believes** EC acts as a contraceptive or an abortifacient and the church does not accept both **conditions** (10,12). Islam however, allows contraception but forbids abortions (4,13,22). From our study, religion and fear of infertility are the major barriers to the **effective** utilization of EC to reduce unsafe abortion and maternal mortality.

Conclusion

Participants had high level of knowledge of EC but important gaps were identified.

Perceived infertility as a side effect of emergency contraception and religion remains the main obstacles to the patronage of EC. Advocacy in the communities, Churches and mosques are required to stem the tide of unbelief on emergency contraception use.

Availability of data and materials

The data used for this article are available and **will be made available** upon request by contacting the corresponding author.

Authors' contributions

¹ conducted the interview and wrote the manuscript. ² planned and designed the study. ³ Entered and analysed the data. All authors reviewed the manuscript draft and approved the final version.

Competing interest

The authors declare that they have no competing interest

Consent for Publications

Consent to participate in the study was obtained from all the participants. The consent for publication was also obtained from the participants.

Ethics approval

The ethics committee of the school of Allied Health Sciences of the University for Development approved the study.

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