



Factors Associated with the Use of Emergency Contraceptive Pills among Students of the Takoradi Polytechnic in Ghana

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Authors' contributions

This work was carried out in collaboration between all authors. Authors WTD, SM and FB participated in conceiving the study and in the development of data collection tool. Author WTD carried out data collection. Authors SM and WTD participated in the analysis and drafting of manuscript. All authors read and approve of final manuscript.

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ABSTRACT

Background: Unintended pregnancy and unsafe abortions are major public health problems in sub-Saharan Africa. In the Western Region of Ghana, unsafe abortions account for 3.8% of all maternal deaths. Emergency contraceptive pills (ECP) give women opportunity to prevent unwanted pregnancy in the first few days after unprotected sexual intercourse. The aim of this study was to evaluate the awareness and use of ECPs among students in a tertiary institution in the Western Region of Ghana.

Methods: We conducted a survey using a self-administered questionnaire which inquired into socio demographic background, awareness, knowledge and use of ECPs. We performed descriptive and bivariate analysis, and used logistic regression in analysis to determine the factors influencing ECP use.

Results: Awareness of emergency contraceptive was high (74.7%) but use was low 28.4%. Those who had basic awareness of EC however lacked detailed knowledge about the content,

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effectiveness and the timing schedule after unprotected sex. Sixty seven per cent had used emergency contraceptive pills more than ones within a year.

Conclusions: A high level of ECP awareness in this student population is not matched by usage. Abuse and repeated use of emergency contraceptive could be curbed by educating young adults on emergency contraception with emphasis on content, effectiveness and correct timing of use, through various communication channels.

Keywords: Emergency contraceptive pill; student; Takoradi Polytechnic; Ghana.

1. BACKGROUND

Globally, approximately 222 million women who want to prevent pregnancy do not have access to effective methods of modern contraceptives. It is however the right for women all over the world to have access to an extensive range of contraceptives [1]. Despite this right, there is still a yearly occurrence of 86 million unintended pregnancies [2] which is a troubling public health problem and a major reproductive health issue worldwide.

Emergency contraception (EC) is a type of contraception used to prevent unwanted or unintended pregnancy after an act of unprotected sexual intercourse, contraceptive failure or misuse (such as forgotten pills or torn condoms), rape or coerced sex [3]. It is known by several other names such as 'morning after' or "post-coital" method [4]. Emergency contraception is intended to be used only in emergency situations and not for routine or repeated use. The regimen is more effective the sooner it is taken after intercourse [3]. The risk of unwanted pregnancy increases if it is used several times within a year [5]. Emergency contraception is principally feminine driven so its use and success rest mainly on how women perceive and practice it [6].

Since the introduction of dedicated Emergency Contraceptive Pills (ECPs) in the mid-1990s, there has been comparatively little research into the success of their introduction and uptake in developing countries. Single dose of levonorgestrel 1.5 mg is the first-line hormonal EC in most countries [7]. Some studies done among female university students indicates generally low level of knowledge and practice of emergency contraceptives among tertiary students [4,8–10]. A study in Egypt on women within their reproductive ages revealed an insufficient knowledge about emergency contraceptives, but revealed strong willingness to receive information to use EC methods when desired [11]. Another empirical study shows sex

differences exist in the awareness of ECP in association with contraceptive intentions among tertiary students in South Korea [12].

Result from the multi country analysis on contraception use showed that, knowledge of emergency contraception was progressively associated with education [13]: an odds ratio of 1.6 in Ghana was found for those with secondary or higher education, compared with those who could not complete primary education [14].

Emergency contraception was formally introduced in Ghana in 1996 by the Ministry of Health through inclusion in its National Reproductive Health Policy and Standards. A short survey conducted a year after its introduction to evaluate health providers' knowledge of EC indicated that only 34% (out of 325) had heard of it [15]. Interestingly however, contraceptive use in Ghana has remained generally low. The 2014 Ghana Demographic Health Survey (GDHS) estimated contraceptive use among currently married women to be 27% [16]. General use of contraception method as well as modern method had increased from 24% and 17% in 2008 to 27% and 22% in 2014 [16] respectively. Yet, there is still high unmet need in the use of modern contraceptives.

The Western Region is one of the ten administrative regions of Ghana. In 2015 it was estimated that 3.8% of reported maternal deaths were due to unsafe abortion. A high proportion (17.8%) of these deaths were reported among teenagers [17]. This study explored awareness and knowledge of ECPs among female students of the Takoradi Polytechnic, one of the tertiary level institution in the Western Region. It also sought to explore the factors that influence its use among the students.

2. METHODS

A cross-sectional study among a sampled of residential and non-residential female students at the Takoradi Polytechnic were deployed. The

research design involved enquiry into people's personal experience and attitudes.

2.1 Study Population and Size

The Takoradi Polytechnic is one of ten such tertiary institutions in Ghana. It has a total student population about 7,700, out of which 2,287 (29.7%) are female.

We aimed to estimate the prevalence of ECP awareness within a margin of error of 5% at 95% confidence level, and with the prior assumption that awareness will be about 50%. The survey was conducted just about the time students were going to write their end of semester examinations. We therefore anticipated refusals and inculcated a 12% non-response rate. (<http://www.raosoft.com/samplesize.html>).

2.2 Procedure

To avoid bias due to information obtained from class as part of routine training in health related courses, we purposefully sampled respondents from among students in the School of Applied Arts, Applied Science, Engineering and School of Business Studies. Using the class roll, we applied systematic random sampling to select respondents.

Anonymous self-administered questionnaires, which contained a mixture of open and closed ended questions, were then administered to the respondents. The questionnaires were hand delivered to the respondents and collected on the same day or on an agreed date and time. Information collected were on demographic characteristics, knowledge and use and attitude towards use of contraceptive methods with much focus on ECP, the frequency of use, information on sexual activity, access to information on reproductive health and perceived factors that influence the use of ECP. Religious acceptability as well as availability and affordability were assessed using "yes/no" questions that were contained within the questionnaire.

Pre-testing of questionnaire was done with 20 female students from Holy Child Training College, a tertiary institution in Takoradi with similar socio demographic characteristics as the target population.

2.3 Ethical Consideration

Ethical approval was obtained from Ensign College Ethical Review Board. Institutional

approval was also obtained from the Review Board of Takoradi Polytechnic. Signed individual informed consent was obtained from each participant before the questionnaires were handed over to them. Respondents were assured of confidentiality. Study participants were informed of their right to opt out of the study at any time they felt uncomfortable with the posed questions or felt physical and mentally harmed in the course of the data collection. Confidentiality of collected information was ensured.

2.4 Data Analysis

Data was double entered into computer using a platform created in Microsoft Excel. The two datasets were reconciled and corrections were effected using the information contained on the completed questionnaire as source document. The cleaned data was exported into STATA statistical software (Stata Corp. 2007. *Stata Statistical Software Release 14*. StataCorp LP, College Station, TX, USA) for analyses. Univariate analysis of selected variables was conducted to generate descriptive statistics on the socio-demographic characteristics of participants. Bivariate analyses were used to investigate the association between students' socio-demographic characteristics and EC knowledge and use at 95% Confidence level with a statistical significant level set at a value <0.05. Finally, a multivariate logistic regression model was built to evaluate factors that affect the respondents' knowledge and use of the ECPs.

3. RESULTS

Three hundred and ninety-five students out of 400 returned completed questionnaires yielding a response rate of 98.8%. Five of the questionnaires could not be retrieved because the students involved left campus without returning them.

3.1 Background Characteristics of Study Participants

Of the 395 who returned the questionnaire, the average age was 21.97 (± 2.27) years; with the youngest being 18 years and the oldest being 34 years. The median age was 22 years. Most of the respondents (52.4%) were from the Business programme. Students from the Applied Art and Applied Science Department constituted 88 (22.3%) and 87 (22%) respectively. The

Engineering Department with only few female students had 13 respondents (3.3%). The overwhelming majority (94.2%) of the students were single. Only 14 (3.5%) were married and only 9 (2.3%) cohabiting. Christianity contributing 359 (90.9%) was the dominant religion among the respondents; 32 (8.1%) were Islam's while only 4 professed faith in the Traditional Religion. One hundred and forty-six representing (37%) were not sexually active. The other 249 representing (63%) who were sexually active were further asked if they had ever been pregnant. The minority 49 (16.5%) were those who had ever been pregnant (Table 1).

Table 1. Demographic characteristics of study participants

Variables n= 395	Categories	N (%)
Programme of study	Business	207 (52.4)
	Applied art	88 (22.3)
	Applied science	87 (22.0)
	Engineering	13 (3.3)
Marital status	Single	372 (94.2)
	Married	14 (3.5)
	Co-habiting	9 (2.3)
Religion	Christian	359 (90.9)
	Islam	32 (8.1)
	Traditional	4 (1.0)
Knowledge of contraception	Yes	371 (93.9)
	No	24 (6.1)
Use of contraception	Yes	143 (36.2)
	No	252 (63.8)
Sex relation	Yes	249 (63.0)
	No	146 (37.0)
Ever pregnant (n= 249)	Yes	41 (16.5)
	No	208 (83.53)
Age	Mean age = 21.97 SD = 2.27	

3.2 Awareness and Use of Contraceptives

Almost all the respondents 371 (93.9%) had awareness of contraceptive in general; only 24 of them representing 6.1% indicated they were not aware. Of the total, 143 (36.2%) had used contraceptives 28% of modern contraceptives and 8% of the traditional methods of contraceptive and a greater percentage had never used any method of contraceptive (Table 1).

On the choice of methods, contraceptive pill was dominant with 56(39.2%) followed by condom 48 (33.6%), followed by Calendar method representing (17.5%) of respondents. The other

three; Withdrawal 7 (4.9%), Injectable 6 (4.2%) and Implant 1(0.7%) were the least choice.

3.3 Awareness of ECPs

Majority of the students 295 (74.6%) sampled had prior knowledge of ECPs. About half 155 (52.5%) of those who had prior knowledge had acquired the information via different media. Just a few had the information through a formal lecture. 175 (59.3%) of those who had prior knowledge knew the correct period for taking ECPs, however quite a substantial number 120 (40.7%) did not know the time that it should be taken. Furthermore, the majority which is (79.9%) of the respondents did not have any idea about the content of ECPs. More than half of those who claimed to have prior knowledge were not sure of its effectiveness. Two hundred and twenty representing 74.6% of the respondents indicated that they knew EC could be obtained from the pharmacy. Only 6 of them representing 2.0% mentioned the supermarket as a source of EC (Table 2).

Table 2. Students' awareness and knowledge of ECPs

Variables (N= 395)	Yes n (%)	No n (%)
Awareness of ECPs	295 (74.7)	100 (25.3)
Asked among those reporting only awareness (n = 295)		
Source of information	Electronic/print media	155 (52.5)
	Family/friends	81 (27.5)
	Hospital	37 (12.5)
	Formal lecture	22 (7.5)
	Immediately after sex	84 (28.5)
Time frame for use	Within 24 hours	82 (27.8)
	Within 5 days	9 (3.1)
	Do not know	120 (40.7)
	Same as other contraceptive	25 (8.5)
Content of ECP	Same but stronger	33 (11.2)
	Different drug	1 (0.34)
	Do not know	235 (79.9)
	Effectiveness of EC	99% effective
Effectiveness of EC	75% effective	48 (16.2)
	≤ 50% effective	32 (10.9)
	Not sure	172 (58.3)
	Where EC could be obtained	Pharmacy
Hospital/Clinic		69 (23.4)
Supermarket		6 (2.0)

3.4 Concern about ECPs

Majority of study participants representing 35% had no concern about ECPs. Ninety two of them representing 23% were concerned about it effects on health; 17% needed more information on ECPs; whiles 13% were worried about future complications. Only 30 out of the 395 respondents perceived EC to cause abortion; four per cent were concern about it being abused by women, the remaining 1% perceived it to be illegal (Fig. 1).

3.5 Use of ECPs

About a third of the respondents, 112 (28.4%) had ever used ECPs. 37 out of the 112 representing (33.0%) were one time users. The remaining (67%) had used it more than once, but interestingly 26 (23.3%) had used ECPs more than twelve times. About two thirds 70 (62.5%) claimed that their male partners recommended use followed by family and friends 25 (22.3%). A vast majority of the respondents 103(92%) said that ECPs were available and 95 (84.8%) of respondents indicated ECPS were affordable. Seventy (62.5%) reverted to the use of a regular contraceptive after ECP use (Table 3).

From the bivariate analysis, marital status and religious belief were the only variables which were statistically significantly associated with the use of ECPs (Table 4). However, when assessed further in the multivariate logistic regression model with all other variables held constant, marital status, religious acceptance and partner

acceptance of ECP were not significantly associated with use of ECP with a 95% CI.

Table 3. Univariate analysis on Students’ use of ECPs

Variable (n=395)	Categories	n (%)
Use of ECPs	Yes	112 (28.35)
	No	283 (71.65)
Asked only among those reporting use (n = 112)		
Frequency of use	Once	37 (33.04)
	2 – 4 times	33 (29.46)
	5- 8 times	12 (10.71)
	9- 12 times	4 (3.57)
	≥ 12 times	26 (23.21)
Who recommended use	Partner	70 (62.50)
	Friends/Relatives	25 (22.32)
	Media	17 (15.18)
Availability	Yes	103 (91.96)
	No	9 (8.04)
Affordability	Yes	95 (84.84)
	No	17 (15.18)
FP after EC use	Yes	70 (62.50)

Use of other family planning methods, partner’s preference for condoms, knowledge of time to take ECP after unprotected sex, and respondents’ sexual activity were identified as being statistically significant predictors of EC use (Table 5).

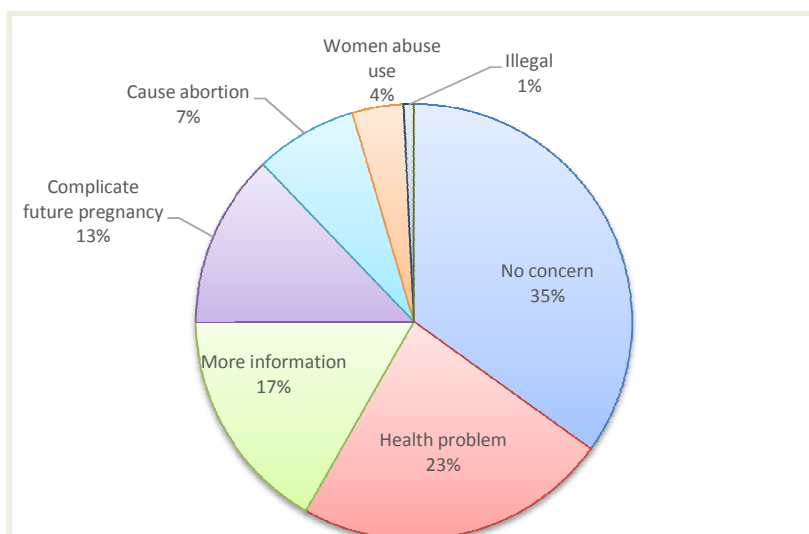


Fig 1. Concerns of EC

Table 4. Bivariate analysis of some demographic data on EC use

Variable EC use (N = 395)	Yes n= 112(%)	No n= 283(%)	P- value
Age group			0.154
18 – 22	64 (57.14)	189 (66.78)	
23 – 27	45 (40.18)	85 (30.04)	
≥ 28	3 (3.18)	9 (3.18)	
Programme of study			0.586
Business	58 (51.79)	149 (52.65)	
Applied art	29 (25.89)	59 (20.85)	
Applied science	23 (20.54)	64 (22.61)	
Engineering	2 (1.79)	11 (3.89)	
Marital status			0.032*
Single	100 (89.29)	272 (96.11)	
Married	7 (6.25)	7 (2.47)	
Cohabiting	5 (4.46)	4 (1.41)	
Level			0.154
Level 100	67 (59.82)	137 (48.41)	
Level 200	20 (17.86)	89 (31.45)	
Level 300	25 (22.32)	57 (20.14)	
Religious belief			0.046*
Christianity	97 (86.61)	262 (92.58)	
Islam	12 (10.71)	20 (7.07)	
Traditional	3 (2.68)	1 (0.35)	

Note: * indicates the measured association is statistically significant at $\alpha < 0.05$

Table 5. Output of logistics regression between EC use and respondents attitude towards ECPs

Variable	Categories	N (%) n=395	P- value	OR (95%CI)
ECP use is necessary	No	15 (3.80)	Reference	1
	Yes	254 (64.30)	0.078	3.9 (0.85, 17.68)
	Don't know	126 (31.90)	0.872	0.9 (0.18, 4.28)
ECP use promotes promiscuity	No	60 (15.19)	Reference	1
	Yes	168 (42.53)	0.006	0.4 (0.23, 0.78)
	Don't know	167 (42.28)	<0.001	0.3 (0.15, 0.53)
ECP use promotes the spread of STIs	No	107 (27.09)	Reference	1
	Yes	173 (43.80)	0.606	0.9 (0.53, 1.44)
	Don't know	115 (29.11)	<0.001	0.2 (0.07, 0.32)
Religious acceptance	No	119 (30.13)	Reference	1
	Yes	121 (30.63)	0.33	1.3 (0.76, 2.19)
	Don't know	155 (39.24)	<0.001	0.3 (0.17, 0.57)
Will recommend ECP to a friend	No	102 (25.82)	Reference	1
	Yes	192 (48.61)	<0.001	2.9 (1.68, 5.13)
	Don't know	101 (25.57)	0.013	0.3 (0.14, 0.79)
EC should be sold to men	No	83 (21.01)	Reference	1
	Yes	168 (42.53)	0.63	1.1 (0.66, 1.96)
	Don't know	144 (36.46)	<0.001	0.2 (0.08, 0.34)
Partners acceptance	No	58 (14.68)	Reference	1
	Yes	155 (39.24)	0.01	2.1 (1.17, 3.69)
	Don't know	182 (46.08)	<0.001	0.1 (0.04, 0.17)
Will prefer condoms to ECP	No	90 (22.78)	Reference	1
	Yes	147 (37.22)	0.122	1.5 (0.89, 2.62)
	Don't know	158 (40.0)	<0.001	0.1 (0.05, 0.25)
Partner use condom after ECP awareness	No	94 (23.80)	Reference	1
	Yes	99 (25.06)	0.013	2.1 (1.17, 3.69)
	Don't know	202 (51.14)	<0.001	0.1 (.04, 0.17)

Table 6. Output of multiple logistic regression analysis of factors affecting ECPS use

Variables	Categories	N (%) n=395	P- value	OR (95%CI)	P- value	AOR (95%CI)
Marital status	Single	372 (94.2)	Reference	1		1
	Married	14 (3.5)	0.07	2.7 (0.93,7.95)	0.78	1.3 (0.21, 7.5.78)
	Co-habiting	9 (2.3)	0.07	3.4 (0.90, 12.91)	0.40	3.8 (0.16, 89.39)
Use FP	No	252 (63.8)	Reference	1		1
	Yes	143 (36.2)	<0.001*	22.8 (12.76,40.75)	<0.001*	6.3 (2.64, 14.93)
Partner prefer condom	No	94 (23.8)	Reference	1		1
	Yes	99 (25.1)	0.013*	2.1 (1.17, 3.69)	0.16	2.0 (.07, 0.70)
	Do not know	202 (51.1)	<0.001*	0.1 (.04, 0.17)	0.009*	0.2 (0.76, 5.08)
ECP timing after sex	No	120 (40.7)	Reference	1		1
	Yes	175 (59.3)	<0.001*	36.2 (14.06,93.16)	<0.001*	12.9 (4.21, 39.31)
Partner accept ECP	No	58 (14.7)	Reference	1		1
	Yes	155 (39.2)	0.01*	2.1 (1.17, 3.69)	0.19	2.0 (0.70, 5.77)
	Do not know	182 (46.1)	<0.001*	0.1 (0.04, 0.17)	0.15	0.4 (0.10, 1.42)
Religious acceptance	No	119 (30.1)	Reference	1		1
	Yes	121 (30.6)	0.33	1.3 (0.76, 2.19)	0.19	0.1 (0.18, 1.41)
	Do not know	155 (39.2)	<0.001*	0.3 (0.17,0.57)	0.51	0.7 (0.25, 2.01)
Sexual activity	No	146 (37.0)	Reference	1		1
	Yes	249 (63.0)	<0.001*	37.1 (11.51, 119.63)	0.028*	5.5 (1.19, 24.89)

Note: * indicates the measured association is statistically significant at $\alpha < 0.05$

4. DISCUSSION

Ninety-four per cent of the respondents were aware of contraceptive generally. One hundred and forty-three (36.2%) had ever used any method of contraceptives (28% for modern contraceptives and 8% of the traditional methods of contraceptive). The most popular choice was the contraceptive pill use (39.2%) followed by condom (33.6%). The use of contraceptives is lower than those obtained in the 2014 GDHS on the general population. According to the report, 45% sexually active unmarried women were using any method of contraceptive (32% modern method, 13% for traditional method). It also stated that, the male condom, pill and rhythm or calendar methods were the most commonly used method among sexually active unmarried women. This disparity may be accounted for by the fact that most of the respondents were young adult and the age range (18-34) did not cover the whole reproductive age group of 15-49 years.

Awareness level of ECP among the respondents was 74.7% which was higher than those obtained in similar studies of university students done in Ghana [4,18,19] and that done in Taibah

(24.5%). Our findings were however lower than those reported among students of Korea (88.2%) [20] and in Kenya(88.0%) [21].

Awareness of ECPs seems to have increased markedly over the years. The common sources of getting information about ECPs and its use were through the electronic and print media 155 (52.5%), family/friends 81 (27.5%) respectively. This finding is similar to studies other studies done in Ghana [4].

Of those who had prior knowledge, 59.3% knew the correct time period for taking ECPs. However quite a substantial number 120 (40.7%) did not know the time that it should be taken. This is lower compared to studies done in Tamale which indicated that 85% of the women knew the correct timing for use of ECP [19]. Other studies in Nigeria and California reported lower values [22,23]. Eighty per cent did not know the content of ECP and 58.31% were not sure of its effectiveness. These results are similar to studies done in Ghana and California indicating that women who are aware of ECP do not have adequate knowledge on timing of use [1,24]. The media which appears to be the major source of

information may be giving inadequate information about ECPs which may account for this. Sixty three per cent of the students interviewed were sexually active, of which 16.5% had ever been pregnant, which is quite understandable because the mean age of respondent is within the early adult transition stage [17-22] years [25]. Twenty-three per cent of the students were concerned about the health implications of ECPs; however, 17% wanted to have more information about ECPs.

Another major problem is the lack of knowledge about how ECPs are to be used. This may be the problem with providers not giving adequate information about ECP when dispensing. Also students were aware of the existence of emergency contraceptive pills from different information sources. The awareness created by the media may not be comprehensive enough to include knowledge on appropriate use, content and effectiveness of method.

A vast majority of the respondents said that ECPs were available and affordable representing 103(92.0%) and 95(84.8%) of respondents respectively. Seventy of the respondents representing 62.50% reverted to the use of a regular contraceptive after ECP use.

Among the 28.4% respondents who reported ever using ECPs, 33% were one time users, but interestingly 26 (23.3%) had used ECPs more than twelve times already. Findings on the use of ECP are similar to a study done in Egypt which reported 24.5% use among women aged 18 – 49 years. This is however lower compared to other studies done in Ghana [23,24]. Even though access and availability was high, use was low similar to a study that reported low usage despite convenience to access [26].

The frequent use of ECPs may be attributed to the fact that the study participants did not have in-depth appreciation on its purpose for emergencies. This is of public health concern because studies have shown the risk of unwanted pregnancy increases if ECP is used several times [27]. Seventy of the respondents representing 62.5% claimed that their male partners recommended usage while another 25 representing 22.3% indicated their recommendations came from family and friends. Education on ECP and its usage should not be limited to just females of reproductive ages but frantic effort should be made to include their male partners as well.

Marital status, religious acceptance, partner acceptance of ECP and partner preference for condoms were not significantly associated with use of ECP when the other variable were held constant, even though the unadjusted odds ratio had significant p-values of (<0.05). This is in line with another study done in Ghana, where high use of EC was reported in Tamale despite religious unacceptability [19]. Use of other family planning methods, knowledge of time to take ECP after unprotected sex, and respondents' sexual activity were statistically significant predictors of ECP use. Student who were using modern contraceptive were 6.3 times more likely to use ECPs with reference to those who were not, adjusting for other predictor variables in the model.

Those who knew the correct time for taking ECP after unprotected sex had about 13 times likelihood of using ECP compared to those who cannot time well after adjusting for the other predicting variables. It could be explained that those who had enough information on ECP were sure of the method and did not hesitate its use. Also students who sexually active were 5.5 times more likely to use ECPs compared to their colleagues who were not at the time of the study, adjusting for all other indicators. This seems to be much expected.

The study was limited in the sense that it focused on only female students of Takoradi Polytechnic. The campus is situated close to the central business town of Sekondi/Takoradi with a number of pharmacies close to the premises. The students may have substantial knowledge and access to emergency contraceptive pills.

5. CONCLUSION

Emergency contraception is a useful method of contraception that prevents unwanted pregnancy after unprotected sexual intercourse. It is however not recommended as a regular family planning method.

Knowledge and use of regular family planning methods as well as partner support of method positively associated to the use of emergency contraceptives. Most of the students were not sure of the correct time of using emergency contraceptives and therefore repeated use within a year. Frequent use of emergency renders the method ineffective, there is therefore the need to educate students on emergency contraception with emphasis on content, effectiveness and

correct timing of use and also development of policy and regulation on the sale and advertising of emergency contraceptive pills such that in-depth education about content, effectiveness and use goes along with it. Partner acceptance of ECPs and use of regular contraceptives also positively influenced the use of ECPs.

Marital status and religious acceptors did not affect the use of EC according to the data. Previous use of any method of contraceptives and in-depth knowledge of emergency contraceptive were factors associated with the use of ECP.

6. STRENGTH AND LIMITATIONS

A noticeable strength from this study hinge on the fact that, in the developing world including Ghana, there is a vast knowledge gap emanating from the absence of rigorous scientific research activities. Findings from this project will contribute immensely in generating some needed information to fill the knowledge gap. This notwithstanding, there are some limitations to the study. The small nature of the sampled size used will make it impossible to generalize the key findings to a larger population. Secondly, some information gathered from the respondents could be subjected to recall bias. Classical among this is the frequency of EC usage, as most respondents do not keep any written record on such activities. An attempt to minimize such recall bias was however done by suggesting usage frequency categories.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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