

ORIGINAL ARTICLE

EMERGENCY CONTRACEPTION: EXPLORING THE KNOWLEDGE, ATTITUDE AND PRACTICES OF ENGINEERING COLLEGE GIRLS IN NAGPUR DISTRICT OF CENTRAL INDIA

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ABSTRACT

Background: The major factor limiting the use of EC may be inadequate information about their effectiveness and availability or unfavourable opinions about their safety due to misinformation. So the study was carried to assess the knowledge, attitude and practice of EC among engineering college girls.

Methods: A cross-sectional survey was conducted in an engineering college. All girls from a field were included in the study. Data was collected by a predesigned, pre-tested, self-administered multiple response questionnaires.

Results: A total of 8(5.7%) reported that they had previously used ECPs. An association was found between users and their level of knowledge. Users had Average/Good knowledge as compared to non-users (OR-12.51). A strong association was found between source of information and level of knowledge. In other words, respondent receiving information from the Health Personnel (OR 21.49) and Audio-Visual Media (OR 10.2) were more likely to have good or average knowledge as compared to family and friends (OR 6).

Conclusion: Knowledge of emergency contraception by students is low and the method is still underused. Strategies to promote use of emergency contraception should be focused on spreading accurate information through medical sources, which have been found to be reliable and associated with good knowledge on emergency contraception.

Key Words: Emergency contraception (EC), Emergency contraceptive pills (ECP), Female students

INTRODUCTION

Post-Coital (Or "Morning after" or "Emergency") contraception is recommended within 72 hours of an unprotected intercourse.³ 2 methods are available:-

1. IUD (Copper Device within 5 Days),
2. Hormonal-In India, Levonorgestrel 0.75 mg tablet is approved for emergency contraception.1 tablet within 72 hrs of unprotected intercourse and 2nd tablet after

12 hrs of 1st dose or 2 OCP containing 50 mcg of ethinyl estradiol within 72 hrs after intercourse and the same dose after 12 hrs or 4 OCP containing 30 or 35 mcg of ethinyl estradiol within 72 hrs and 4 Tablets after 12 hrs or Mifepristone 10 mg once within 72 hours.³

EC (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.⁹

The World Health Organization estimates that 84 million unwanted pregnancies occur annually worldwide. Averagely, 46 million abortions take place every year, out of which 20 million are performed under unsafe conditions. Approximately 13% of pregnancy-related mortality worldwide is due to unsafe abortions.⁹

With decreasing age of menarche and early onset of sexual activity; young people are exposed early to unplanned and unprotected sexual intercourse leading to unwanted pregnancy and, subsequently, abortions.¹¹ EC has the potential, as the last resort, to avoid unwanted pregnancy and therefore abortion¹⁰ FDA approved OTC (Over the counter) for adults aged 18 and older. It remains prescription-only for minors.⁵

Knowledge and practice on emergency contraception are particularly important because of high rates of unwanted and teenage pregnancy.¹⁰ NFHS III, the knowledge about EC is 11% in women¹. The major factor limiting the use of EC may therefore be inadequate information about their effectiveness and availability or unfavourable opinions about their safety due to misinformation.⁹

The aim of this study is therefore to assess the level of knowledge, attitude and practice of emergency contraception among girls at higher institutes¹⁰ i.e. in an engineering college.

DESIGN AND METHODS

A cross-sectional survey was conducted in an engineering college situated in Nagpur. There are total 44 engineering colleges in Nagpur. An engineering college was selected randomly in Nagpur District. There were total 6 different fields in that college, out of which Field of Computer technology was selected randomly and all girls from that field were included in the study. There were approximately 165 girls in that field. However, only girls who were present in the campus i.e. 155 at the time the study was conducted actually participated in the survey.

The study was approved by the Ethical Committee of our institute. In addition, authorization was obtained from the appropriate authority of the engineering college prior to the day of the survey.

A predesigned, pre-tested, self-administered multiple response questionnaires was provided to the students. The students who were found in the campus were requested to gather in 2 Lecture halls.

To reduce the non-respondent rate, the information was not disclosed until all students had gathered in the two lecture halls. They were then informed of the survey, its objectives and procedures, and assured that the information collected would be treated as confidential and used only for research purposes. Students who gave their verbal informed consent were provided with the questionnaire.

Students were well spaced out to avoid communication among them during the exercise. They were also asked to request for clarification if any item in the questionnaire was not clear. Students were not required to identify themselves by writing their names on the questionnaire and confidentiality was emphasized. The exercise took about an hour. Each lecture hall had two baskets in which students were asked to put the completed questionnaire before leaving the halls.

The first part of the questionnaire assessed the knowledge of students about emergency contraception; the second part evaluated their attitudes while the third part was concerned with their practices as regards Emergency Contraception.

We determined the knowledge about EC using eight multiple-choice questions. The eight questions to evaluate the level of knowledge about EC were:

- 1) "Mechanism of action of EC"
- 2) "Is copper-T used as EC"
- 3) "Are Oral Contraceptive pills used as EC"
- 4) "When EC is generally recommended"
- 5) "Maximum acceptable time after sex for a woman to take the EC"
- 6a) "Do you know the side effects of EC"
- 6b) "If yes then mention them"
- 7) "Is EC a method of early abortion"
- 8) "Is EC procured easily from retail outlets"

Each correct question corresponded to 1 point, and so there was a total of 8 points for eight questions.

Girls Knowledge was graded as:

Score	Level of Knowledge
>5	Good
3-5	Average
≤2	Poor

The students' attitudes were measured using four items rated on a four-point Likert scale as (1) strongly disagree, (2) disagree, (3) agree and (4) strongly agree. The four items were: (a) "Would you use EC if you would have unprotected intercourse during the unsafe period", (b) "Is EC safe for its users", (c) "Would you recommend EC to a friend" and (d) "Providing ECPs would discourage consistent use of condom". Using this four-point scale for 4 questions, we arbitrarily set the maximum score for each respondent at 16 and the minimum at 4. We decided that a high score was indicative of positive attitude while a low score would be indicative of a negative attitude.

Part three of the questionnaire required the students to state their prior experience with any type of EC and to mention the type used by them.

The data was entered and analyzed with Epi info software. For descriptive statistics results were expressed in terms of proportions or percentages and for analytical statistics odds ratios were used to examine the relation between variables.

RESULTS

Participation rate

155 girls were approached and accepted to participate in the study. 150 girls completed and returned the questionnaires, giving a total participation rate of 96.7%. Mean age of girls under study was 20.7(SD=1.16) years.

Table 1:-Distribution of Respondents according to Source of Information-

Source of Information	Respondent (%)
Audio-Visual Media (TV/Radio/Internet/Books)	91 (65.5)
Family and friends	34 (24.5)
Health Personnel (Doctors, Nurses and Pharmacists)	12 (8.6)
Other Sources	2 (1.4)

Knowledge of EC

139 (92.7%) reported that they had heard of Emergency Contraception. Only those 139 girls who had heard regarding EC were further analyzed for having knowledge, attitude and practices.

A majority of respondents in this study had knowledge from Audio-Visual Media. The sources were as shown in Table1.Only 37 (26.6%) knew that Cu-T is used as EC. 90 (78.5%) knew that oral contraceptives can be used as EC. Only 64 (46.0%) knew when is EC generally recommended. 59 (42.4%) knew that EC could be taken up to 72-120 hours after unprotected sex. 46(33.1%) girls think ECP interrupts ongoing pregnancy.12(8.6%) knew the side effects of EC. 9 (75%) girls considered Change in Menstrual cycle as the major side effect of EC.76 (54.6%) considered EC as a method of early abortion. 80(57.5%) knew that EC can be procured from retail outlets.

Table2:-Distribution of Respondents according to Knowledge of Emergency Contraception-

Knowledge	Frequency (%)
Good	16 (3.6)
Average	38 (27.3)
Poor	85 (61.15)
Total	139 (100.0)

Table 2 table indicates overall knowledge of what constitutes EC was poor.

We tested whether the source of information was associated with the level of knowledge and found a strong association for each of the following categories: Family/Friends (P<0.001), AV Media (P<0.001), Health Personnel (P<0.001). In other words, a respondent receiving information from the Health Personnel (OR 21.49) and Audio-Visual Media (OR 10.2) were more likely to have good or average knowledge as compared to family and friends (OR-6).Participants having source of information from other sources were not significant.(Fisher Exact-p value-0.7444) as shown in **Table 3**.

The attitude of students towards EC is shown in Table 4. In the first item, 101students (72.2%) either agreed or strongly agreed that they would use EC in the future if need arose, while the rest of the 38 students (27.3%) either disagreed or strongly disagreed. Overall, there was a positive

attitude indicating a strong tendency of use of EC in the future by respondents

Table3:-Association of Source of Information according to Knowledge of Respondents-

Source of information	Good/ Average (%)	Poor (%)	Chi-Square	p-Value	Odds Ratio	Confidence Limit
Family/Friends	24(70.5)	10(29.5)	19.09	<0.001	6	2.563-14.05
Audio-Visual Media	19(20.8)	72(79.2)	35.82	<0.001	10.2	4.52-23
Health Assistants	11(91.67)	1 (8.33)	15.42	<0.001	21.49	2.685-172
Others	0	2(100)	-	0.7444*	-	-

*Fisher Extract p-Value

Table 4:-Attitude of Respondents towards Emergency Contraception

Item	Strongly Disagree (%)	Disagree (%)	Agree (%)	Strongly Agree (%)
Would you use EC† if you would have unprotected intercourse during the unsafe period?	11 (8.0)	27 (19.3)	61 (44.3)	40 (28.4)
Would you recommend EC† to a friend?	15 (11.0)	26 (18.8)	60 (43.1)	38 (27.1)
Is EC† safe for its users?	57 (41.2)	31 (22.1)	28 (20.2)	23 (16.3)
Providing ECP‡ would discourage consistent use of Condom?	22 (15.8)	63 (45.2)	42 (30.1)	12 (8.9)

†EC-Emergency contraception, ‡ ECP-Emergency Contraceptive Pill

A total of 8(5.7%) reported that they had previously used ECPs. All 8 girls had used I-Pill as EC. Table 5 shows that the knowledge of ECP users was significantly higher compared to non-users.

Table 5- Association of Knowledge of ECP users compared to non-users.

I-Pill (ECP) †	Average/Good	Poor	Total
Users	7	1	8
Non- Users	47	84	131
Total	54	85	139

† ECP-Emergency Contraceptive Pill

Yates corrected Chi -square= 6.424 OR-12.51(CL 1.49-104.8).p-Value- 0.01126

DISCUSSION

In India, where rates of unplanned pregnancies and illegal abortions are high, it is estimated that 78% pregnancies are unplanned and 25% are definitely unwanted, despite a 'National Family Welfare Programme' and widespread efforts by the government.⁴ The number of unsafe abortions has also been increasing despite legalization of abortion in India through MTP Act in 1972. However, morbidity associated with

abortion is preventable to a great extent through use of suitable contraception. Introduction of EC through government supply in the new millennium has a potential to significantly change the scenario by empowering the young females in India.

The awareness of EC among girls in our study was 92.7%. This level of awareness was higher than the level found among university students in Cameroon (63%)⁹, Ghana (43.2%)¹³ and Kathmandu (66%)¹⁴. On the other hand, it was low compared to the university students, for example, in the USA (94%).¹⁵ Only 12.9% knew Cu-T can be used as EC which was lower than study from Haryana (14.9%) and Ethiopia,(34.1%).¹⁰ 70.5% mentioned pills can be used as EC which was lower than Ethiopian study (82.8%).¹⁰

Knowledge about the correct time for taking EC after unprotected sex was 42.4 %. This finding is higher than 11.3% reported in Ghana¹³ and Cameroon (5.7%)⁹. More than half of the respondents (54.6%) thought EC was a form of abortion which was similar with students from Cameroon (51.2%)⁹ and higher than students of Ghana (25.8%)¹³. 33.1% girls thought that the ECP interrupts an ongoing pregnancy which was higher than the study carried out in Uganda¹⁶.

Only 16.6% girls mentioned nausea vomiting as most common side effect of ECP which was much lower than girls from Chandigarh.⁸ 57.5% girls knew that ECP can be procured easily from retail outlets which was lower than study from Sikkim (74%)¹¹. Only 4.3% girls knew that EC generally recommended in Rape whereas (32.4%) girls from Haryana knew that EC could be used in case of rape.⁴ The most important sources of information on EC for these students was from Audio-Visual Media. Similar findings have been reported by other studies.^{10, 13}

Unfortunately, Audio-Visual Media which was the largest source of information on EC for the students turned out to be unreliable. The source was associated with misinformation, while medical sources were associated with better knowledge.

Although our students generally held favourable opinions about EC, most of them believed that EC were unsafe for their users. Similar findings have been reported from the studies carried out in Cameroon and Ghana^{9, 13}. 36.5% girls thought providing ECPs would discourage the consistent use of condoms compared to 53.4% of students in Ghana¹³. 39% girls think that providing ECP would discourage consistent use of Condom

The students were unanimous that the principal objective of condom use was to prevent HIV and so the availability of ECPs could not discourage the use of condoms; if the users understand that ECPs do not prevent HIV infection.

5.7% reported that they had used ECPs before, compared to 7.4% of students in Cameroon.⁹ The knowledge of ECP users was significantly higher compared to non-users (p-Value-0.01126).OR-12.51(CL 1.49-104.8).

Therefore, the knowledge and practice on emergency contraceptive is very low. There is a need to raise awareness about emergency contraceptives as an option with other contraception methods.

This article is first of its kind which look at emergency contraception among students of Engineering college.

One of the limitations of our study was that it was based on only young women pursuing higher studies. Hence our study may not be truly representative of young females of Nagpur. We cannot guarantee that students

provided honest answers to the questions, since the survey involved a sensitive matter (i.e. sex).

The strength of our study lies in the fact that it focused on young females rather than only on adult married females. Many studies have been done on married females but not on college students, who also are important candidates for awareness generation with respect to EC.

CONCLUSION:

We conclude that the knowledge about the general features of EC is poor and misinformation is high among these students; that although the students generally have positive attitudes regarding EC, most of them believe that EC are unsafe for their users; and that, despite widespread availability in Nagpur for several years, the method is still underused.

We strongly recommend that strategies to promote EC use be focused on spreading accurate information through information, education and communication in by health personnel and which have been found to be reliable and associated with good knowledge on EC.

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