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Original Research Article

Emergency contraception: knowledge, attitude and awareness of its usage among medical students in a private medical college of Davangere

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ABSTRACT

Background: Emergency contraception (EC) is the contraception used to prevent pregnancy after unintended or unprotected sexual intercourse. EC can be used after contraceptive failure or misuse (as in slippage or breakage of condoms, forgotten pills). It is used before the time of implantation and prevents pregnancy in 75-99% of the cases. EC is available as pills or IUCD.
Methods: A cross-sectional study involving final year medical students was conducted at SSIMS and RC, Davangere, Karnataka, India. A 32-point questionnaire encompassing the socio-demographic details, knowledge and attitude towards EC was answered by a total 146 participants. The data were entered in Microsoft excel sheet and the descriptive statistics were analysed using Epi-info software
Results: Majority of the participants had heard about EC and also knew the trade name under which it is available. The main indication for EC usage was thought to be unprotected sex by 76% participants. Nearly 90% participants knew that EC does not protect against STDs. 85% participants thought that failures can happen despite EC usage. On assessing the attitude, majority disagreed to the notion that EC usage promotes promiscuity and using EC is a sinful act.
Conclusions: Knowledge and attitude regarding EC and its usage was fairly good among the medical students in our study. The inclusion of EC in medical curriculum has added to their knowledge. Being the responsible future physicians, their knowledge with regard to EC is deemed important. Similarly, an awareness regarding EC should be spread across the general public to prevent the unwanted pregnancies and its consequences.

Keywords: EC, Unintended pregnancy, EC pills, IUCD

INTRODUCTION

In the present era, one of the leading problems in the world is rising population. World's population today is almost three times more than what it was in mid-twentieth century. World population in 1950 was 2.5 billion and it is expected to reach 8 billion by the mid November 2022. The current population of India in 2022 is 1410 million.[1] This rising population is adding to economic burden to the nation, depletion of the natural resources, illiteracy, malnutrition and unemployment.

Worldwide the unintended pregnancies are around 121 million each year in 2015-2019.[2] 48% of total pregnancies are unintended out of which 61 % pregnancies end in induced abortion.[3]

Out of all the unintended pregnancies happening worldwide , one in seven unintended pregnancies occur in India.[3] Around 78% of pregnancies in India are unplanned and out of them nearly 25% pregnancies are unwanted.[3] The outcome of these unintended pregnancies is usually an induced abortion or if the woman continues pregnancy then it results in poor utilisation of health care services and poor maternal and neonatal outcome.[4] In India , unsafe abortions account for 8 deaths each day[5] and unsafe abortion is the third leading cause of maternal mortality in India.[6] Hence, these unintended pregnancies have a

remarkable effect on the reproductive health of a woman. One of the main reasons for unintended pregnancies is the lack of knowledge about the availability and usage of EC.

EC is the contraception used to prevent pregnancy after unintended or unprotected sexual intercourse.[7] EC can be used after contraceptive failure or misuse (as in slippage or breakage of condoms, forgotten pills).[7] It is used before the time of implantation and prevents pregnancy in 75-99% of the cases. EC is available as pills or IUCD.[8]

Emergency contraceptive pills act mainly by preventing ovulation, fertilization and/or implantation. EC pills are called morning after pills and it is easily available and best taken within 72 h of unprotected intercourse.[8] Different formulations are available in market like: levonorgestrel only pill, COCs, ulipristal acetate. Oral ECs can be used more than once in same menstrual cycle.[8] Copper intra-uterine device can be inserted upto 5 days after unprotected sexual intercourse. It acts by preventing implantation.

Appropriate knowledge and awareness about EC prevent unwanted pregnancies and hereby preventing unsafe or illegal abortions and its untoward consequences.[9] Unsafe and illegal abortions are one of the main causes of maternal morbidity and mortality.[10]

EC is nearly 95% effective in preventing pregnancies according to WHO.[11] The increasing trend of high-risk sexual activity in young adolescents and adults highlights the importance of EC which prevents unintended pregnancies and thereby the unsafe abortions. The awareness and utilisation of EC in developed countries is nearly 61-93%.[12-14] But the same awareness is lacking in developing countries and India is facing one such challenge regarding the reproductive health of women.[15]

METHODS

This study is a cross-sectional descriptive study which was conducted in S. S. Institute of Medical Sciences and Research Centre, Davangere, Karnataka, India in the month of August 2022. Institutional ethical committee approval was obtained prior to conducting the study. The participants were final year medical students.

The 146 students participated in the study. A verbal consent was taken from all the participants prior to data collection. Anonymity and confidentiality of the students was assured. All the students willing to participate in the study were included in the study and those students present on the day of the study were included in the study. Students not willing to participate in the study and those who were absent on the day of study were excluded from the study.

The student participants were given a 32-point questionnaire. This questionnaire consisted of three parts. The first part of the questionnaire obtained details regarding their socio demographics, second part tested the knowledge pertaining to emergency contraception and third part assessed the participants attitude towards the usage of emergency contraception. The questionnaire used in our study was adopted from a cross-sectional study conducted among the college students in Tamil Nadu, India by Davis et al and permission was obtained to use the questionnaire from the corresponding author.[16] All the questions were asked in English.[16] The information regarding the questions were can be found in results section. All the data were entered in Microsoft excel sheet and descriptive statistics analysed using Epi-info software.

RESULTS

The 32-point questionnaire encompassing the socio-demographic details, knowledge and attitude towards Emergency contraception was answered by a total 146 students studying in final year MBBS at SSIMS and RC, Davangere, Karnataka, India.

Socio-demographic data

The mean age of the participants was 22.3±2.2 years. Majority of the participants were females 82 (56.2%) and the rest 64 participants were male. Only 8 (5.5%) participants were married. All the participants belonged to final year MBBS batch. Out of 146 participants, 29 (19.86%) participants passed their matriculation exam from rural area and the rest of 117 (80.14%) participants passed matriculation from urban area. 132 (90.4%) participants were Hindus, 6 (4.1%) participants were Christians and 8 (5.5%) participants were Muslims by religion (Table 1).

Table 1: Socio-demographic data of final year medical students of SSIMS and RC, Davangere.

Characteristics	N	Percentages (%)
Age (years)		
21	22	15.06
22	92	63.01
23	32	21.9
Gender		
Male	64	43.8
Female	82	56.2
Marital status		
Unmarried	138	94.5
Married	8	5.5
Place of matriculation		
Rural	29	19.86
Urban	117	80.14
Religion		
Hindu	132	90.4
Christian	6	4.1
Muslim	8	5.5

Knowledge regarding the EC

Majority of the participants, around 143 (97.9%), had heard about the emergency contraception and only 3

(2.1%) participants were not familiar with the EC. The 50 (34.24%) participants of opinion that Oral contraceptive pills were used as EC, 93 (63.69%) opined that progesterone only pills are used as EC and 3 participants did not have any idea about the medication used for EC (Table 2).

Table 2: Knowledge regarding EC among final year medical students of SSIMS and RC, Davangere.

Characteristics	N	Percentages (%)
Medications used for EC		
OCPs	50	34.24
Progesterone only pills	93	63.69
Antibiotics like amoxicillin, erythromycin	0	0
Do not know	3	3.42
Trade names		
I pill	106	72.61
Ezy pill	09	6.15
Mala-N	25	17.12
Ovral	0	0
Do not know	05	3.42
Place of availability		
Government hospital	30	20.5
Private hospital	19	13.01
Pharmacy	75	51.36
Supermarket	3	2.05
Any shops	19	13.01
Do not know	0	0
Indications for EC		
Unprotected sex (including forced sex/ rape)	114	78
Birth control measure	17	11.64
To induce abortion	15	10.31
Do not know	0	0
Price (INR)		
Less than 100	58	39.7
100 to 200	43	29.45
200 to 300	21	14.4
Do not know	24	16.43
Requirement of doctor consultation before taking EC		
Yes	74	50.68
No	67	46.6
Do not know	5	3.42
EC prevent STD		
Yes	14	9.58
No	131	89.72
Do not know	1	0.68
Requirement of pregnancy test before taking EC		
Yes	22	15.06
No	121	82.87
Do not know	3	2.05
Time at which OCPs to be taken		
Within 24 hours of sex	21	14.38
Within 72 hours of sex	114	78.08
Within 5 days of sex	5	3.42
Before sex	6	4.2
Do not know	0	0
Effectiveness in pregnant women		
Yes	32	21.9
No	84	57.53
Do not know	30	20.55

Continued.

Characteristics	N	Percentages (%)
Effectiveness in preventing pregnancy		
Always effective	20	13.7
Failures can happen	124	84.9
Do not know	2	1.37
EC are same as abortion pills		
Yes	11	7.53
No	126	86.3
Do not know	9	6.16
Recommended number of doses		
One dose	30	20.55
Two doses	92	63.01
Three doses	14	9.6
Do not know	10	6.85
Frequency in a month		
Once	68	46.6
Twice	36	24.66
Thrice	8	5.48
Daily	26	17.8
Weekly	8	5.48
Can IUCD be used for EC		
Yes	87	59.6
No	48	32.9
Do not know	11	7.53
Timing of insertion of IUCDs		
Within 5 days	73	50
Within 7 days	18	12.3
Within 1 month	10	6.85
At the time of sexual intercourse	25	17.12
Do not know	20	13.7

106 participants knew that ECs are available under trade name of I pill. 25 (17.12%) choose Mala-N, 9(6.15%) choose Ezy pill as their answer. Five (3.42%) participants did not know the trade name. When asked about the place of availability, majority of them, around 75 (51.36%) participants opined it was obtained from pharmacy, 30 (20.5%) choose government hospitals, 19 (13.01%) chose Private hospitals, 19 (13.01%) chose any shops and 3 (2.05%) chose supermarkets as their answer. Price at which ECs were available in the market was quoted as less than Rs. 100 by 58 (39.7%) participants, between Rs. 100 to 200 by 43 (29.45%) participants, between Rs. 200 to 300 by 21 (14.4%) participants and 24 (16.43%) participants did not know the cost of EC.

The main indication for the usage of EC was answered as unprotected sex by 114 (78%) participants which was either due to forced sex or sexual assault or rape. The 17 (11.64%) participants thought it was used as a birth control measure and 15 (10.31%) participants thought that EC pills were used to induce abortion. The usage of ECs needed a prior doctor consultation according to 74 (50.68%) participants and 67 (46.6%) participants opined that prior doctor consultation not required and 5 (3.42%) participants did not give any opinion with this regard.

A majority of participants i.e., 131 (89.72%) participants opined that EC does not prevent STD, 14 (9.58%) participants thought that EC prevents STD and 1 participant did not know the role of EC with this regard. 121 (82.87%) participants were of the belief that pregnancy test was required before taking EC. 22 (15.06%) participants said that pregnancy test was not needed before taking EC and 3 (2.05%) participants did not know answer.

The timing by which the EC s to be taken was answered as within 72 hours of unprotected sex by 114 (78%) participants, within 24 hours of sex by 21(14.38%) participants, within 5 days of sex by 5 (3.42%) participants and 6 (4.2%) participants thought it was to be used before sex. The 84 (57.53%) participants thought that ECs are not effective in pregnancy, 32 (21.9%) thought EC effective in pregnant women and 30 (20.55%) women did not know about its effectiveness in pregnancy. The 124 (84.9%) participants thought that failures can happen despite using EC, 20 (13.7%) participants thought ECs always effective and 2 (1.37%) participants didn't know about effectiveness of EC. The 126 (86.3%) participants opined ECs are not same as abortion pills, 11 (7.53%) participants opined ECs are same as abortion pills and 9 (6.16%) participants didn't know whether ECs are same as abortion pills.

The 92 (63%) participants answered that recommended dose of ECs were two, 30 (20.55%) participants answered that 1 dose of EC is recommended, 14 (9.6%) answered that 3 doses of ECs recommended 10 (6.85%) participants did not know recommended dose of ECs. The time interval between the doses of EC was opined to be 12 hours apart by 71 (48.6%) participants, 24 hours apart by 44 (30.14%) participants, 48 hours apart by 8 (5.5%) participants, to be taken with pill by 5 (3.42%) participants and 18 (12.32%) participants did not know the answer. When asked about frequency of usage of ECs in a month, 68 (46.6%) participants opined that ECs can be used only once a month, 36 (24.66%) opted for twice a month, 8 (5.48%) opted for thrice a month, 26 (17.8%) opted for daily usage and 8 (5.48%) participants opted for weekly usage.

The 87 (59.5%) participants opined that IUCD can be used as EC, 48 (32.9%) participants answered as no and 11 (7.53%) participants did not know answer. 48 participants answered that IUCD cannot be used as EC should be inserted within 5 days of sex, 18 (12.3%) answered as within 7 days, 10 (6.85%) answered as within month, 25 (17.12%) answered timing of insertion as at time of sexual intercourse and 20 (13.7%) participants did not know answer.

Attitude of medical students towards the EC

On assessing the attitude of medical students towards the use of EC, a majority i.e., 104 (71.23%) participants disagreed to role of EC in promoting promiscuity, only 14 (9.6%) participants agreed to it and 28 (19.2%) stayed neutral. The 95 (65.1%) participants disagreed to EC as a method for inducing abortion, 26 (17.8%) participants agreed to it whereas 25 (17.12%) stayed neutral. The 125 (85.6%) participants did not feel that EC is a sinful act, 8 (5.5%) participants felt using EC is a sinful act whereas 13 (8.9%) participants stayed neutral (Table 3).

The 96 (65.75%) participants disagreed to EC use will lead to infertility, 32 (21.92%) stayed neutral with this regard and 18 (12.3%) participants thought that EC use leads to infertility. The 58 (39.73%) participants disagreed to EC may affect baby if it doesn't work, 46 (31.5%) thought that EC use affects baby if it doesn't work and 42 (28.77%) participants neutral with this regard. The 89 (60.99%) participants answered that EC will affect next menstrual period, whereas 30 (20.55%) participants stayed neutral with this regard 27 (18.5%) participants disagreed to the same.

Out of 146 participants, 110 (75.34%) participants answered that they will advice EC for others, 13 (8.9%) participants answered that they would not advice EC for others and 23 (15.75%) participants stayed neutral with this regard. 60 (41.1%) participants thought that EC use will encourage high risk behaviour among youth whereas 35 (23.97%) participants disagreed to it and 51 (34.9%) participants stayed neutral. The 136 (93.15%) participants agreed to the fact that the information and knowledge regarding the EC have to be given in educational institutions, 6 (4.2%) participants stayed neutral and 4 (2.79%) participants disagreed with this regard.

Table 3: Attitude of medical students towards EC.

Characteristics	Agree, N (%)	Neutral, N (%)	Disagree, N (%)
EC promoting promiscuity (immoral)	14 (9.6)	28 (19.2)	104 (71.23)
EC is a method for inducing abortion	26 (17.8)	25 (17.12)	95 (65.1)
EC is a sinful act	8 (5.5)	13 (8.9)	125 (85.6)
EC will lead to infertility	18 (12.3)	32 (21.92)	96 (65.75)
EC may affect the baby if it does not work	46 (31.5)	42 (28.77)	58 (39.73)
EC will affect the next menstrual period	89 (60.99)	30 (20.55)	27 (18.5)
Will you advice EC for others?	110 (75.34)	23 (15.75)	13 (8.9)
The use of EC will encourage high risk behavior among youth	60 (41.1)	51 (34.9)	35 (23.97)
The information and knowledge regarding the EC have to be given in educational institutions	136 (93.15)	6 (4.2)	4 (2.74)

DISCUSSION

This study was designed to assess the knowledge and attitude on EC usage among the final year medical students of SSIMS and RC, Davangere, Karnataka.

Majority of the participants, around 143 (97.9%), in our study knew about EC. The fact that they were exposed to the topic of EC in their medical curriculum from second year of their course, they demonstrated a fairly good knowledge. Whereas a similar study conducted among the college students of Tamil Nadu showed that only 24.1% of the students had heard about EC and out of them, 60.1% of the female participants heard about EC when compared to males 39.9%.[16] A similar study conducted in USA also showed that female students were more aware of EC as compared to male students.[17]

In our study, majority of the participants knew that combined OCPs can be used as ECs and also, they opined that Progesterone only Pills can be used as ECs. Similarly, a study conducted at Ethiopia by Grima et al showed

similar results were in the participants opted for OCPs being used as ECs.[18] Majority of the participants in our study knew that ECs are traded under the name of I Pill. I Pill is a more familiar brand among the students. A similar finding was obtained in the study conducted in Mangalore and in Tamil Nadu by Davis et al.[16,19]

Nearly 51.35% of our participants opined that EC s are obtained from pharmacy followed by government hospitals (20.5%) and private hospitals and other shops (19% each). A similar result was obtained by study conducted by Davis et al.[16] A study conducted at South Africa involving the female university students showed that majority of their participants opined that public health facilities are a common source of obtaining EC's.[20]

Nearly 60% of the participants in our study knew that IUCD can be used as EC and majority of them knew that IUCD needs to be inserted within 5 days of sexual intercourse. As a contrary to this finding, study conducted by Davis et al showed that only 31.7% of their participants knew that IUCD can be used as EC and a 20% of them knew that it IUCD needs to be inserted within 5 days of sexual intercourse.[16]

According to our study, the main indication for usage of ECs is unprotected sexual intercourse followed by its use as a birth control measure. 10% of the participants had the misconception that EC pills were used to induce abortion. About 50% of the participants thought that a prescription is needed to use EC whereas the half did not agree with the same. A significant number of the participants (nearly 90%) opined that EC s do not protect against STDs. On the contrary, a study conducted in Gujarat, India involving undergraduate medical students revealed that 75% of the participants thought that ECs prevents STDs.[21]

In our study, nearly 83% participants were of the belief that a pregnancy test was needed prior to EC administration. A study conducted in Gujarat, India showed that significant number of students mentioned that there is no need to do pregnancy test prior to taking ECs.[21] 78% participants in our study knew that ECs need to be taken within 72 hours of unprotected sex and 15% of the participants thought ECs should be taken within 24 hours of sex. A similar study conducted by Shiferaw et al among female medical university students at Ethiopia showed that 36.1% of the students opined that ECs should be taken within 24 hours of sex and 28.3% of the students thought that ECs should be taken within 72 hours of sex.[22]

In our study, 85% of the participants thought that failures can happen despite usage of EC. A similar study by Davis et al showed that majority of the participants opined that failures can happen despite EC usage.[16] The 86% participants in our study opined that ECs are not similar to abortion pills and a similar result was obtained in a study conducted in Gujarat, India which showed that majority of the students knew that EC and abortion pills are different.[21]

Around 63% participants in our study thought that 2 doses are recommended dose of EC and nearly 20% participants thought that only 1 dose is recommended and the time interval between 2 doses of EC was thought to be 12 hours according to 48.6% of the participants, 24 hours according to 30% of the participants and 5.5% participants thought that the interval between 2 doses was 48 hours.

On assessing the attitude of medical students towards the use of EC, 70% of the participants disagreed that EC promotes promiscuity. A similar study by Shiferaw et al at Ethiopia also showed that EC use does not promote promiscuity.[22] 65% of our participants disagreed that EC as a method of inducing abortion. 85% participants did not feel that using EC is a sinful act and 65% participants disagreed that use of EC leads to infertility. Similarly in a study conducted by Davis et al showed that 71% of their participants disagreed to EC as a sinful act and they also disagreed to the thought that EC use does not lead to infertility in females.[16,22]

Nearly 65% participants thought that EC affects next menstrual period. Similarly, Shiferaw et al also showed that EC will affect the next menstrual period.[22] Study by Jajure et al also showed that nearly 50% of their participants thought that EC use will not affect next menstrual period.[23] Approximately 40% of the participants in our study thought that EC affects the baby if does not work.

In our study, a majority (75%) of the participants replied that they would advise EC to others. This finding is similar to that of studies conducted by Davis et al and also studies conducted in Gujarat and Mangalore.[16] Only 40% of our participants thought that EC encourages high risk behaviour among youth. Studies in Nigeria and Trinidad also showed similar results.[24,25]

A great majority of the participants (nearly 93%) agreed to the fact that information and knowledge regarding EC has to be given in educational institutions which is similar to the finding in a study conducted by Davis et al and a South African study by Hoque et al.[16,20]

One of the limitations of this study could be convenience sampling, since only medical students were involved. This study may not reflect the awareness of general public regarding the usage of EC. A similar emphasis on creating awareness among public regarding EC is a must.

CONCLUSION

Our study demonstrated fairly good knowledge among final year medical students regarding ECs. The inclusion of EC s in the curriculum has played an important role in the acquisition of the knowledge regarding ECs. Although the knowledge regarding the EC is good among the medical students, still they are not convinced regarding its efficacy in preventing pregnancy. An emphasis regarding the efficacy of ECs and timing of menstrual cycle during

which EC is effective seems to be necessary. The attitude towards the use and misuse of EC is also demonstrably positive. The need for spread of awareness regarding EC is agreed upon by majority of our participants. The inclusion of EC in curriculum of high schools, college, other university colleges and in public forum via social media and other public educational programs enhance the knowledge among general public and thereby prevent the unwanted pregnancies and its complications. Health care settings need to include EC among other family planning methods and should sensitise the women attending the OPDs with this regard. This reduces the unintended pregnancies and subsequent economic and social burden.

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