International Journal of Preventive, Curative & Community Medicine
Volume 5, Issue 4 - 2019, Pg. No. 18-25
Peer Reviewed & Open Access Journal

Research Article

Assessment of Knowledge and Attitude regarding Emergency Contraception among Medical Students of North India

Neeraj Pawar[1], Priyanka Choudhary[2], Amit Kumar Mital[3], Sembagamuthu Sembia[4], Komal Singhania[5], Seema Verma[6]

[1,4]Senior Resident, CFM, AIIMS Bhopal, Madhya Pradesh.
[2]Senior Resident, [5,6]Junior Resident, Community Medicine, PGIMS, Rohtak.
[3]Senior Resident, Department of Pediatrics, BPS GMC for Women, Khanpurkalan, Sonepat, Haryana.
DOI: https://doi.org/10.24321/2454.325X.201925

I N F O

Corresponding Author:
Priyanka Choudhary, Community Medicine, PGIMS, Rohtak.
E-mail Id:
drmittalpriyanka@gmail.com
Orcid Id:
https://orcid.org/0000-0001-5229-7801
How to cite this article:
Pawar N, Choudhary P, Mital AK, Sembi S, Singhania K, Verma S. Assessment of Knowledge and Attitude regarding Emergency Contraception among Medical Students of North India. *Int J Preven Curat Comm Med* 2019; 5(4): 18-25.

Date of Submission: 2020-04-06
Date of Acceptance: 2020-04-24

A B S T R A C T

Background: Emergency Contraceptives (ECs) used to prevent pregnancy after unprotected sexual intercourse can forestall up to over 95% of pregnancies when taken inside within 5 days after intercourse. In India, about 0.18% women die every year due to abortion-related complications. Knowledge about emergency contraceptives is still relatively unknown to common man and even to medical professionals. This study therefore aims to assess the knowledge and attitude of medical students about the emergency contraception.

Methodology: A cross-sectional study was done for 5 months period from January 2016 to May 2016. 250 medical students (125 females and 125 males) were selected by simple random sampling with 50 undergraduate students from each professionals (1st to 4th year), and 50 interns studying and working in PGIMS Rohtak. A predesigned pretested questionnaire was used for the study.

Result: Mean age of the study participants was 22.5 (±3) years. There was significant improvement in the knowledge about ECs with successive MBBS professional year with poor knowledge in 48% students. 53.6% of study participants showed unfavorable attitude with 74% interns having favorable attitude of score more than 2 which was found statistically significant. Knowledge was significantly good among age >20 years (58.9%), family income more than 1 lakh/month (64.7%) and male gender (55.6%). Unfavorable attitude was significantly more among students with middle income category (64.4%) and urban residential background (57.5%).

Conclusion: The study reveals poor Knowledge and attitude among medical students about emergency contraception which is a matter of concern. There is a need to change the learning strategies of medical students with their practical involvement with patients and community.

Keywords: Emergency Contraceptives, Medical Students, Knowledge, Attitude

Introduction

Unintended pregnancies are a major public health concern and Emergency Contraception (EC) is a last resort birth control method to prevent these unintended pregnancies. It provides an important back-up in cases of unprotected intercourse or contraceptive accident (such as forgotten pills or torn condoms) and is especially valuable after rape or coerced sex.

Emergency contraception refers to methods of contraception that can be used to prevent pregnancy after unprotected sexual intercourse. There are 2 methods of emergency contraception: Emergency Contraceptive Pills (ECPs) (including ECPs containing ulipristal acetate (UPA), EC-Pills containing Levonorgestrel (LNG), Combined Oral Contraceptive Pills (COCs), and copper-bearing intrauterine devices (IUCDs).

Ideally, ECPs with UPA, ECPs with LNG or COCs should be taken as early as possible after unprotected intercourse, within 120 hours**.** ECPs with UPA are more effective between 72–120 hours after unprotected intercourse than other ECPs.[1]

WHO[1] recommended dose and schedule of ECPs are:

- ECPs with UPA, taken as a single dose of 30 mg.
- ECPs with Levonorgestrel taken as one pill of 1.5 mg, or it is taken in two divided doses 12 hours apart.
- Combined pills, taken as a split dose, one dose of ethinyl estradiol (100 µg) and LNG (0.50mg) combination, followed by a second dose 12 hours later. (Yuzpe method).

IUCDs are recommended for use within 5 days but are more effective the sooner they are used after the act of intercourse.[1]

ECPs may also work to prevent fertilization of an egg by affecting the cervical mucus or the ability of sperm to bind to the egg while IUDs mainly prevents fertilization by causing a chemical change that damages sperm and egg before they can meet.[1,2]

ECs can forestall up to over 95% of pregnancies when taken inside within 5 days after intercourse.[1] As per the World Health Organization estimates, 210 million pregnancies occur annually, out of which, 38% are unwanted and 22% end up with abortion worldwide. In India, about 11 million abortions take place annually and around 20,000 women die every year due to abortion-related complications.[3]

It is being realized that the unwanted pregnancy and need for induced abortion could be reduced by optimum use of EC as they prevent women's risk of becoming pregnant from a single act of intercourse by 79-99%.[4]

Department of family welfare GOI introduced procurement of Emergency contraceptive pills (E-pills) in National family welfare programme.[5] Single dose pill of 1.5mg to be used within 72 hours of unprotected sexual intercourse. On August 31, 2005, nonprescription, over-the-counter access to levonorgestrel-only emergency contraception was approved in India.

A market for ECPs has been demonstrated and numerous manufacturers and distributors are keen to supply products; in many countries they are starting to be mainstreamed into norms, pre-service training and services. However information keeps on being a vital hindrance in a significant part of the world. Post-coital contraceptive methods is still relatively unknown to common man and even to the public health and medical professionals who forms the key link in imparting knowledge and to dispel the myths and misinformation about the available methods and correct usage .

This study therefore aims to assess the knowledge and attitude of medical students about the emergency contraception.

Material and Methods

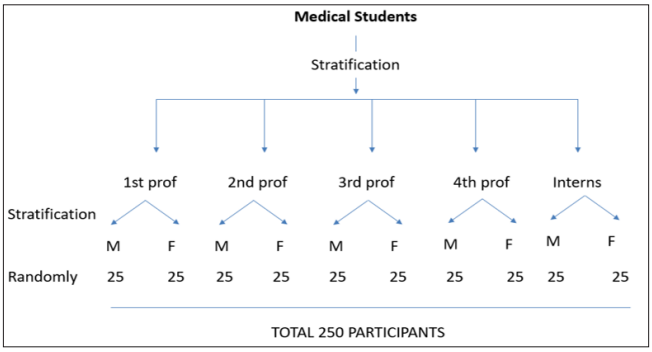
A cross-sectional study was carried out among 250 medical students including 1st to 4th year MBBS undergraduates, and interns studying and working in PGIMS Rohtak. 50 students (25 females and 25 males) were selected from each of the 5 group of medical students using simple random sampling. (Figure 1) The study was done over a period of 5 months from January 2016 to May 2016.

A predesigned pretested questionnaire was used for the study. It was constructed based on literature search of similar studies done in the past.[6-9] This self-administered questionnaire consisted of two parts: Sociodemographic details of students and second part contained questions on knowledge and attitude about the emergency contraception use. There were 10 questions on knowledge and 4 questions on attitude. Each correct answer was awarded 1 point, while wrong answer was given zero points, so a total of 10 points for subset of knowledge and 4 points for subset of attitude based questions. Grading of knowledge and attitude was done separately. The basis of grading was calculating median of the total score obtained from the responses on knowledge and attitude subset. For knowledge (median score=8), students scoring >8 and ≤ 8 were categorized as good and poor knowledge. For attitude (median score=2), student scoring > 2 and ≤ 2 were categorized as good and poor attitude.

The study objectives were explained to all participants and informed consent was taken. Those who did not agree to participate in the study were excluded and next randomly selected individual was included in the study. The confidentiality of data was ensured. Ethical approval

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.201925

was obtained from Department of Community Medicine, PGIMS, Rohtak, India.



Flow diagram

Result

Mean age of the study participants was 22.5 (±3) years with almost 70% of the students were aged 20 years and above. The study methodology ensured equal participation of males and females in each group. It was also seen that 28.4% (71/250) participants had a rural background rest urban. Most (41.6%) had monthly family income range 50,000-1 lakh rupees, and majority of them 96% (240/250) were Hindu by religion.

Contraceptive Knowledge

Almost all 98.4% (246/250) study participants had heard about emergency contraceptives. Only 49% (123/250) study participants identified pills and only 1 study participant identified IUCD as emergency contraception.

The major sources of contraceptive knowledge were teachers in class 169 (67.6%); TV/Radio/Newspaper 44 (17.6%) and friends and peers 34 (13.6%) (Figure 1).

Almost half of the study participants (120/250) had poor knowledge about emergency contraception with gradual improvement in the knowledge with successive MBBS professional year. This distribution was found statistically significant ($p<0.05$) (Table 1).

Attitude towards Emergency Contraception

About 78% (195/250) of the students felt that they can procure EC directly from paramedical staff, and 80.4% (201/250) told that they can get ECs directly from pharmacy store, without consultation of a doctor. Only 19.2 % (49/250) believed that ECs are good for women's reproductive health and around 40% (102) felt that ECs use would discourage consistent use of condoms.

Categorization was then done based on median score obtained from the responses to questionnaire on attitude, with cutoff of 2 for favorable and unfavorable attitude. More than half (53.6%) of study participants showed unfavorable attitude towards emergency contraception. Maximum favorable score was found among interns (74% had more than 2 score). This distribution was found statistically significant ($p<0.05$) (Table 2).

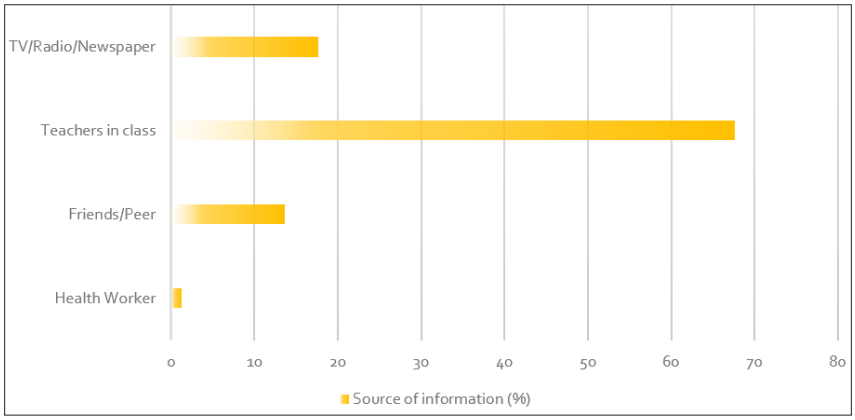


Figure 1.Source of information of study participants regarding emergency contraception

Table 1.Knowledge Score Comparison of Year of study by educational category

	Poor knowledge (score ≤ 8)	Good knowledge (score > 8)	Total	Level of significance
1st prof	34 (68%)	16 (32%)	50 (100%)	Chi square: χ^2 =25.641, df=4, p=0.000
2nd prof	28 (56%)	22 (44%)	50 (100%)	
3rd prof	26 (52%)	24 (48%)	50 (100%)	
4th prof	22 (44%)	28 (56%)	50 (100%)	
Intern	10 (20%)	40 (80%)	50 (100%)	
Total	120(48%)	130(52%)	250 (100%)	

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.201925

Table 2.Attitude score of students towards emergency contraception

	Unfavorable Attitude (score ≤ 2)	Favorable Attitude (score > 2)	Total	Level of significance
1st prof	33 (66%)	17 (34%)	50 (100%)	Chi square x^2 =15.34, df=4, p=0.004
2nd prof	22 (44%)	28 (56%)	50 (100%)	
3rd prof	34 (68%)	16 (32%)	50 (100%)	
4th prof	27 (54%)	23 (46%)	50 (100%)	
Intern	18 (36%)	32 (74%)	50 (100%)	
Total	134 (53.6%)	123 (46.4%)	250 (100%)	

Association of knowledge & attitude score with key sociodemographic factors:

Association of knowledge score with age, family income, gender, residential background was assessed, and it was found statistically significant (p<0.05) for age, family income and gender. Good knowledge score was higher among age >20 years (58.9%), family income more than 1 lakh/month (64.7%) and male gender (55.6%) (Table 3).

Similarly, distribution of attitude score was assessed with same sociodemographic parameters, the association of attitude score with family income and residential background were found statistically significant (Table 4). Comparable attitude scores were observed among the two age categories and between two gender categories. Unfavorable attitude was observed among middle income category (64.4%) and urban residential background (57.5%) (Table 4).

Table 3.Association of knowledge with age, gender, residential area of students and income of family

Age	Knowledge poor (%) n=120	Knowledge good (%) n=130	Total (%)	Level of significance
<20 years	48 (64)	27 (36)	75 (100)	x^2 =10.989, df=1, p=0.001
>20 years	72 (41.1)	103 (58.9)	175(100)	
Family income (per month)				
< 50,000	43 (45.3)	52 (54.7)	95 (100)	x^2 =6.760, df=2, p=0.034
50,000-1 lakh	59 (56.7)	45 (43.3)	104 (100)	
>1 lakh	18 (35.3)	33 (64.7)	51 (100)	
Gender				
Males	55 (44.4)	69 (55.6)	124 (100)	x^2=6.760, df=2, p=0.034
Females	65 (51.6)	61 (48.4)	126 (100)	
Residential background				
Rural	35 (49.3)	36 (50.7)	71 (100)	x^2=0.067, df=1, p=0.796
Urban	85 (47.5)	94 (52.5)	179 (100)	

Table 4.Association of Attitude with age, gender, residential area of students and income of family

Age	Unfavorable Attitude (%) n=134	Favorable Attitude (%) n=116	Total (%)	Level of significance
<20 years	40 (53.3)	35 (46.7)	75 (100)	x^2=0.003, df=1, p=0.956
>20 years	94 (53.7)	81 (46.3)	175 (100)	
Family income (per month)				
< 50,000	44 (46.3)	51 (53.7)	95 (100)	x^2=8.407, df=2, p=0.015
50,000- 1 lakh	67 (64.4)	37 (35.6)	104 (100)	
>1 lakh	23 (45.1)	28 (54.9)	51 (100)	
Gender				
Males	66 (53.2)	58 (46.8)	124 (100)	x^2=0.014, df=1, p=0.906
Females	68 (54)	58 (46)	126 (100)	

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.201925

Residential background				
Rural	31 (43.7)	40 (56.3)	71 (100)	x^2=3.938, df=1, p=0.047
Urban	103 (57.5)	76 (42.5)	179 (100)	

Discussion

In this study, almost all the participants have heard about EC and findings are inline with the studies done by Reddy RN et al.,[10] Ilias et al.[11] in India and Vahratian A et al in USA.[12]

About half (49%) of study participants identified pills and 12% (30/250) study participant identified IUCD as emergency contraception. The results are comparable with an Indian study done by Gajera et al[13] among undergraduate students where about 10% participants were able to describe IUD as method of EC. Giri et al.,[6] in their study done in Loni, Maharashtra, it was found that 40% undergraduate students identified IUD as a method of EC. This difference can be attributed to inclusion of postgraduate students in their study.

In present study only half of the study participants (130/250) had good knowledge about emergency contraception with gradual improvement in knowledge with successive MBBS professional year. The results are comparable with studies done by Gupta et al.[14] in North West India and Singh et al.[15] in Delhi among medical students with 45.1% and 50% of students having adequate knowledge of EC respectively.

In a study by Kadam et al.,[16] adequate knowledge of contraception was among 80.4% of medical students, which is much more than the present study. Again, overall good knowledge in their study can be attributed to inclusion of postgraduate students in their study.

More than 3/4th (78%) of the students felt that they can procure EC directly from paramedical staff, and 80.4% (201/250) told that they can get ECs directly from pharmacy store, without consultation of a doctor. These results are inconsistent with findings from studies done by Dogra et al[17] and Singh et al[15] where about 67% participants and 65% of doctors respectively agreed that EC should be sold only on prescription.

Only 19.2 % (49/250) believed that ECs are good for women's reproductive health. This was similar to the findings of Parey et al[18] where they found that 75.8% of the participants thought that ECs were harmful to the body.

Around 40% (102/250) felt that ECs use would discourage consistent use of condoms. These findings are comparable with findings of study done at Ghana[19] (53.2%) and Cameroon (38.4%).[20]

The overall percentage for favorable attitude (score>2) was 46.4% with significant difference in the data spread across different professionals. Favorable attitude was more among those with Urban family residence and high family income group (Table 4).

Conclusion and Recommendation

The results of this study reveal poor Knowledge and attitude among enrolled medical students about emergency contraception. The lack of adequate knowledge and poor attitude about EC amongst medical college students is a reason of concern. There should be efforts directed towards it, with special focus on improving awareness about the government family planning programs and policies. Change in learning strategies like involvement of students in family planning surveys & mass media campaigns can help achieving that.

Limitation

As knowledge and attitude may or may not culminate into practice. The practice component is not studied here. If included this could have given more insight into the actual scenario.

Source of Funding: None

Conflict of Interest: None

References

1. World Health Organization. Emergency Contraception [Internet]. Geneva: World Health Organization [cited 2017 Oct 10]. Available from:: http://www.who.int/mediacentre/factsheets/fs244/en.
2. Mittal S. Emergency contraception-potential for women's health. *Indian J Med Res* 2014; 140(1): S45-52.
3. WHO: Unsafe Abortion-Global And Regional Estimates Of The Incidence Of Unsafe Abortion And Associated Mortality. Geneva: WHO; 2004.
4. Tolossa E, Meshesha B, Abajobir AA. Assessment of level of knowledge and utilization of emergency contraception among female students of Hawassa University, South Ethiopia. *Adv Reprod Sci* 2013; 1: 51-56.
5. New Delhi: Ministry of Health and Family Welfare; 1996. Government of India. Target-free approach in family welfare programme.
6. Giri PA, Bangal VB, Phalke DB. Knowledge and Attitude of Medical Undergraduate, Interns and Postgraduate Students in India Towards Emergency Contraception. *N Am J Med Sci* 2013; 5(1): 37-40.
7. Kassa A, Wolde-Mariam M. Knowledge, attitude and practice of emergency contraceptive pills among female students of Hosanna College of Health Sciences,

Hosanna, South Ethiopia. *Journal of Chemical and Pharmaceutical Sciences* 2014; 7(3): 185-193.

8. Gebrehiwot H, Gebrekidan B, Berhe H, Kidanu K. Assessment of Knowledge, Attitude, and Practice towards Emergency Contraceptives among Female College Students at Mekelle Town, Tigray Region, Ethiopia: A Cross Sectional Study. *Int J Pharm Sci Res* 2013; 4(3): 1027-1038.
9. Agrawal VK, Agrawal P. Knowledge, awareness and perception of female students of Emergency Contraceptive pills. *J Behav Health* 2013; 2(3): 230-235.
10. Reddy NR, Kishore SG, Basha SR. Knoweldge on Emergency Contraception Among Medical Students in Bangalore, Karnataka. *J Evol Med Dent Sci* 2014; 3(2): 369-373.
11. Iliyas MC. A cross sectional study on awareness about emergency contraception among medical students in Kannur, Kerala, India. *Int J Community Med Public Health* 2016; 3: 3216-3219.
12. Vahratian A, Patel D, Wolff K, Xu X. College students´perceptions of emergency contraception provision. *J Womens Heal* 2008; 17(1): 103-111.
13. Gajera AN, Barvaliya MJ, Shukla A, Tripathi CB. Knowledge and attitude towards emergency contraception among undergraduate medical students. *Int J Basic Clin Pharmacol* 2017; 6: 955-961.
14. Gupta RK, Raina SK et al. Emergency contraception: knowledge and attitude toward its use among medical students of a medical college in north-west India. *J Pharm Bioallied Sci* 2016; 8(3): 235-239. DOI: 10.4103/0975-7406.175974.
15. Singh S, Mittal S, et al. Emergency contraception: knowledge and views of doctors in Delhi. Health Popul Perspect Issues 2002;25(1):45–54.
16. Kadam M, Kadam S et al. Knowledge, Attitude, and Practice of Medical Students toward Emergency Contraception. *MGM J Med Sci* 2019; 6(1): 25-28.
17. Dogra A, Wankhede UN. Knowledge and attitude of medical undergraduate, interns and postgraduate students towards emergency contraception. *Int J Reprod Contracept Obstet Gynecol* 2017; 6: 2944-2947.
18. Parey B, Addison L, Mark JK, Maurice B, Tripathi V, Wahid S et al. Knowledge, attitude and practice of emergency contraceptive pills among tertiary level students in Trinidad: A cross-sectional survey. *West Indian Med J* 2010; 59: 650-655.
19. Baiden F, Awini E, Clerk C. Perception of university students in Ghana about emergency contraception. *Contraception* 2002; 66: 23-26.
20. Kongnyuy EJ, Ngassa P, Fomulu N, Wiysonge CS, Kouam L, Doh AS. A survey of knowledge, attitudes and practice of emergency contraception among university students in Cameroon. *BMC Emerg Med* 2007; 7: 7.

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.201925

A Cross-Sectional Study on Knowledge and Attitude of Emergency Contraception among Medical Students in Haryana

Sociodemographic Data

Age in years a) <20 b) >20	**Family income** a) ≤50,000 b) 50,000-100,000 c) >100,000
Gender a) Male b) Female	**Residence** a) In-campus b) With parent c) With peers in rented house
Residence a) Rural b) Urban	**Year of study** a) 1ST b) 2ND c) 3RD d) 4TH
Religion a) Hindu b) Muslim c) Sikh d) Others	**Marital Status** e) Single f) Married g) Divorced h) Widowed i) seperated

Knowledge

Q1. Know modern contraceptive methods YES/NO

Q2. Know emergency contraceptive methods YES/NO

Q3. Source of information on EC

a) Health workers b) Friends/peer

b) Teachers in the class d) TV/RADIO/NEWSPAPER

Q4. In what situation EC are likely used?

a) After unprotected sexual intercourse

b) When unwanted pregnancy occurs

c) As ongoing contraceptive

d) Do not know

Q5. Methods known used as EC

a) Pills b) Injectables c) Condom d) IUCD

e) BOTH (a) and (d) can be used f) Withdrawl

Q6. When should EC pill be taken?

a)Anytime

b) During intercourse

c) Within 24 h of intercourse

d) Within 72 h of intercourse

e) Do not know

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.201925

Q7. Mechanism of action?

a)Abort pregnancy

b) Prevent implantation

c) Prevent ovulation and implantation

d) Induce abortion

e) Don't know

Q8. Is EC procured easily from retail outlets without prescription? YES/NO

Q9. Is pregnancy test necessary before taking EC? YES/NO

Q10. Is efficacy of EC reducing by each passing hour? YES/NO

Q11: Are EC available for free of cost at government centers? YES/NO

Attitude

1. Should paramedical staff dispense EC? YES/NO
2. Is EC good for women's reproductive health? YES/NO
3. Will ECPs would discourage consistent use of condom? YES/NO
4. Should EC be available over the counter: YES/NO

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.201925