



Knowledge and the factors associated with knowledge of emergency contraception among the married women of 18 to 45 years in an urban area of Delhi

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ABSTRACT

Knowledge about emergency contraception is particularly important because of high rates of unwanted and teenage pregnancy. In India, it is seen as particularly important to prevent unsafe abortions that kill a large number of women every year. The objectives of this study were to assess the knowledge about emergency contraception and study the factors associated with the knowledge among married women of reproductive age group in urban Delhi. The study group comprised of 410 married women in the reproductive age group residing in urban area of Delhi. A structured questionnaire was used to assess the knowledge about emergency contraception and the various factors associated with knowledge. Majority of the females were Muslims (67.6%) and the remaining were Hindus (32.4%). 185 (45.1%) of the study subjects had knowledge about emergency contraception. Most common source of information about ECP was found to be mass media (73.5%). There was a significant association between the knowledge and the selected variables like education, religion, socioeconomic status and previous contraceptive use. Mass media (TV) was the most common source of information about ECP among the study subjects. Mass media can help in popularising emergency contraception in India, but there should be no misinformation. It should provide the complete and accurate information about emergency contraception, regarding its use in emergency situations only.

INTRODUCTION

The World Health Organization estimates that worldwide 210 million women become pregnant each year and that about two-thirds of them, deliver live infants. The remaining one-third of pregnancies end in miscarriage, stillbirth, or induced abortion. Almost all unsafe abortions take place in developing countries, and this is where 98 percent of abortion-related deaths occur [1]. Post-coital (Morning after or emergency) contraception is recommended within 72 hours of an unprotected intercourse [2]. Two methods are available: -1. IUD (Copper Device within 5 days). 2. Hormonal. Emergency contraceptive pills, also known as morning after pills, can prevent pregnancy when taken within 120 hours of unprotected intercourse [3].

Patient education is paramount in the reduction of unintended pregnancies and there are numerous medical resources available to women to assist them in this endeavor. ECPs are associated with financial and psychologic advantages that benefit both the individual patient and society at large [4]. The use of ECPs reduces the risk of pregnancy by about 75% [5].

In India, according to NFHS III (2005-2006), the knowledge about EC is 20% in men and 11% in women (16.1% in women living in urban area and 8.1% in women living in rural area) [6].

There are a few population based, representative studies in India about emergency contraception among the urban women. Most of the studies which have been done in India regarding emergency contraception are done in rural areas, teaching hospitals and colleges. There are very few population based

studies done in an urban area in India. The present study was carried out to assess the knowledge of emergency contraception among the married women of 18 to 45 years in an urban area of Delhi.

METHODS

This study was a cross-sectional study, conducted at Delhi Gate Health Centre, attached to the department of Community Medicine, Maulana Azad Medical College, New Delhi. The study was carried out from January 2013 to December 2013. According to a survey carried out at Delhi Gate in 2013, the total population of the area was 7745. Out of this the total number of males were 4134 and females were 3611. The total number of married women in the age group 18-45 years as per the list of eligible couples updated in January 2013 was 750.

Taking the knowledge about emergency contraception among women in urban areas as 18.8%¹⁸ (According to NFHS-III), with a relative error of 20% total sample size is calculated to be 410. Sample size calculated for the cross sectional study by using the formula:

$$N = \frac{Z\alpha^2 \times P \times Q}{L^2} = 407, \text{ rounded off to } 410$$

Where N = sample size

$Z\alpha = 1.96$, Value of the standard normal variate corresponding to level of significance alpha 5%

P = prevalence of knowledge about emergency contraception in women i.e., 18.8% ~ 0.188

$$Q = 1 - P = 1 - 0.188 = 0.812$$

L = Allowable error (considering 20% of P) = 3.76

Methodology

At the beginning of the study, the updated eligible couple register available with the Delhi Gate Health centre was used for sampling. Sampling was done using the simple random sampling technique. A sample of 410 women was selected using the random number table from the list of eligible couples noted in the register. In case the subject was not found eligible for the study (residing in the area for less than 6 months), who was selected using random number table, then the woman listed next in the eligible couple register was selected later.

Study tools

The questionnaire was pretested among 30 married women in the age group of 18-45 years which were selected randomly

through convenient sampling, from the Darya ganj area. It was then accordingly modified to make the final questionnaire. Then this predesigned, pretested and semi-structured questionnaire was used to take the interview of eligible females. The questionnaire had both open ended and closed ended questions.

Questionnaire included following parts:

(A) Questions to assess sociodemographic profile of the subject, identification data namely age, address, religion, occupation, socioeconomic status etc.

(B) Questions to assess the knowledge and practice regarding various methods of contraception.

(C) To assess the knowledge about the emergency contraception, females were asked "If a woman has unprotected intercourse, is there anything she can do after the unprotected intercourse that will prevent pregnancy?" with responses recorded as yes, no or don't know.

If the response was yes, they were further asked about the method, for e.g., what contraception can be used, what is the maximum acceptable time after sexual intercourse to take emergency contraception and what was the source of information.

Ethical Issues

The aims, objectives and procedure of the study was explained to all the women. Informed consent was taken from all the participants. Complete confidentiality regarding patient information was maintained through all the stages of the study.

Statistical Tests

Data was analysed using SPSS version 17. Completed schedules were included for data processing and analysis. Percentage and proportions were calculated for knowledge and practice. Chi square and Fischer Exact test were used as tests of significance in univariate analysis. A p value of less than 0.05 was considered significant. The factors found significant in univariate analysis were then analysed in a multivariate logistic regression model. Adjusted odds ratios with the confidence intervals were calculated from the final model to quantify the association between the dependent and independent variables.

RESULTS

The mean age of study subjects was 30.91 (± 6.5) years. There were 101 (24.63%) study subjects who were below 25 years of age. Figure 1 shows the age distribution of study subjects. The number of study subjects who had never received any formal

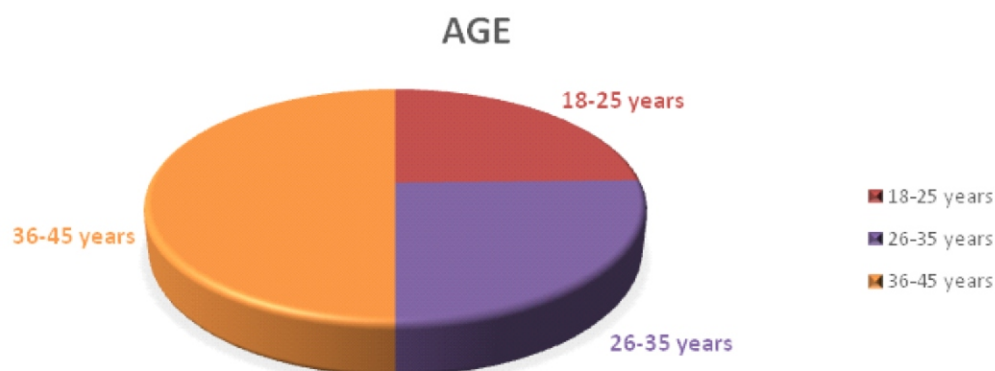


Fig 1. Age distribution of study subjects

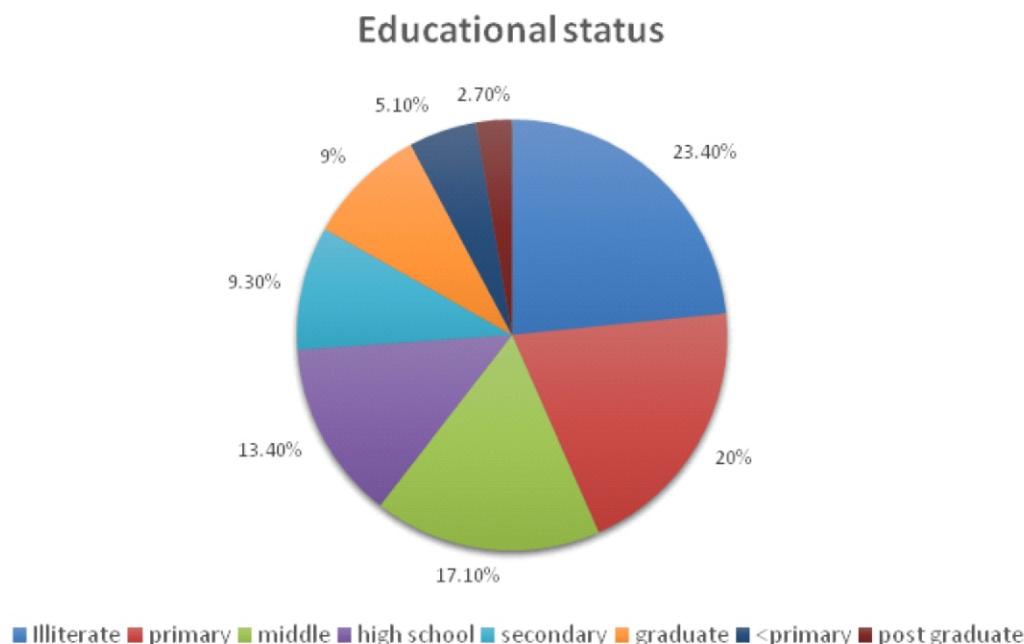


Fig 2. Educational status of study subjects

Table 1: Socio-demographic characteristics of the study subjects and their partners (N=410)

Characteristics	Study subjects n (%)	Husbands n (%)
Age		
18-25	101(24.63)	63(15.4)
26-35	205(50)	253(61.7)
36-45	104(25.37)	94(22.9)*
Educational status		
Illiterate	96(23.4)	69(16.8)
<Primary	21(5.1)	13(3.2)
Primary	82(20.0)	61(14.9)
Middle	70(17.1)	68(16.6)
High school	55(13.4)	100(24.4)
Secondary	38(9.3)	56(13.7)
Graduate	37(9.0)	39(9.5)
Postgraduate	11(2.7)	4(1.0)
Current Occupation		
Housewife	384(93.7)	
Unskilled worker	7(1.7)	40(9.8)
Semi skilled worker	5(1.2)	183(44.6)
Skilled worker	3(0.7)	105(25.6)
Shopkeeper/ clerical	6(1.5)	67(16.3)
Semi-professional	5(1.2)	5(1.2)

*husbands including more than 45 years

education was 96 (23.4%). Figure 2 shows the educational status of the study subjects.

Majority of the families were Muslims (67.6%) and the remaining were Hindus (32.4%). The socioeconomic status of the families was classified according to the Modified Kuppuswamy classification. There were 96 (23.4%) study subjects who belonged to upper lower category, 151 (36.8%) who belonged to

lower middle class and 159 (38.8%) who belonged to upper middle class and 4 (1.0%) who belonged to upper class. Table 1 shows the distribution of study subjects and their husbands according to age, education and current occupational status. The number of study subjects who had never received any formal education was 96 (23.4%). Out of the remaining 21 (5.1%) had been to school but did not complete primary education, 82

(20.0%) had received primary education, 70 (17.1%) were educated till middle school, 55 (13.4%) were educated till high school (10th class), 38 (9.3%) were educated till senior secondary school (12th class). 37(9.0%) had completed education upto graduation and 11(2.7%) were postgraduate (Figure 1). Majority of the study subjects were housewives by occupation 384 (93.7%). The number of gainfully employed women among the study subjects were 26 (6.3%) out of which 7 (1.7%) were unskilled workers, 5 (1.2%) were semi skilled workers, 3(0.7%) were skilled workers, 3 (0.7%) were doing clerical jobs, 5 (1.2%) were semi professionals by occupation. The mean age of the husbands of the study subjects was 32.04 (± 6.45) years. There were 63(15.4%) study subjects whose husbands were aged 25 years or less, 253 (61.7%) study subjects whose husbands were aged 26-35 years of age and 94 (22.9%) study subjects whose husbands were above 35 years of age. The number of study subjects whose husbands had not received any formal education were 69 (16.8%). 13 (3.2%) were study subjects whose husbands had received less than primary education, 61 (14.9%) had received primary education, 68 (16.6%) were educated till middle school, 100 (24.4%) completed high school, 56 (13.7%) received education upto senior secondary school, 39 (9.5%) were graduate and 4 (1.0%) were post graduate. There were 40 (9.8%) study subjects whose husbands were unskilled workers, 183 (44.6%) were semi skilled workers, 105 (25.6%) were skilled workers, 67 (16.3%) were shopkeepers, 5 (1.2%) were semi professionals and 2 (0.5%) were professionals.

Table 2 shows certain marital and behavioural characteristics of the study subjects. There were 215 (52.4%) study subjects who had one or two children and 195 (47.6%) study subjects had three

or more children. 157 (38.3%) study subjects had history of abortion, out of which 120 (76.4%) had abortion once where as, 37 (23.6%) had abortion twice or more. Most common reason for abortion was unwanted pregnancy (80.9%). There were 315 (76.8%) study subjects who were using contraceptives at the time of interview. Most common method (43.4%) of contraception of the study subjects was condom, 30 (7.3%) study subjects were using pills, 33 (8.0%) were using withdrawal method, 18 (4.4%) study subjects had Cu T been inserted, 3 (0.7%) were practising safe period method and 61 (14.9%) had tubectomy done.

185 (45.1%) of the study subjects had knowledge about emergency contraception which can be used after unprotected intercourse. About 8 (2%) study subjects believed that nothing can be done after unprotected intercourse to prevent pregnancy, where as 217 (52.9%) of the study subjects had no idea about emergency contraception. (Table 3)

Out of the 185 study subjects who had heard about EC, about 126 (68.1%) study subjects knew the correct maximum acceptable time to take ECP after unprotected sexual intercourse. 29 (16.4%) study subjects didn't know about the maximum acceptable time to take ECP. (Table 4)

Most common source of information about ECP was found to be mass media (TV) 73.5%. Nearly 14.6% of the study subjects had heard about ECP from friends and 3.2% heard from their relatives. There were 12 (6.5%) study subjects whose source of information about EC was health care provider and 4 (2.2%) study subjects' source was family planning clinic. (Table 5)

Factors associated with the knowledge of Emergency

Table 2. Obstetric and behavioural characteristics of the study subjects (N=410)

Characteristics	Number	Percent(%)
Number of children		
1	32	7.8
2	183	44.6
3 or more	195	47.6
History of abortions		
Yes	157	38.3
No	253	61.7
Number of abortions		
1	120	76.4
=2	37	23.6
Type of abortion(N=157)		
Spontaneous	30	19.1
Induced	127	80.9
Usage of contraceptive methods		
Yes	315	76.8
No	95	23.2
Methods of contraception		
None	95	23.2
Pills	30	7.3
Condom	176	43.4
IUCD	18	4.4
Safe period	3	0.7
Withdrawl	33	8.0
Tubectomy	61	14.9

Table 3. Knowledge of study subjects about emergency contraception in case of unprotected intercourse (N=410)

Response	Number	Percentage(%)
yes	185	45.1
no	8	2.0
dont know	217	52.9

Table 4. Knowledge of study subjects about the maximum acceptable duration of using emergency contraceptive pills

Response	Number	Percentage(%)
12 hrs	5	2.7
24 hrs	10	5.4
48 hrs	15	8.1
72 hrs	118	63.8
72 hrs-120 hrs	8	4.3
Dont know	29	15.7

Table 5. Source of information about Emergency Contraception

Response	Number	Percentage(%)*
Source of information about ECP		
Media		
Friends	136	73.5
Relatives	27	14.6
Health care provider	6	3.2
Family planning clinic/Govt. hospital/dispensary	12	6.5
	4	2.2

*mutually not exclusive

Contraception

Table 6 shows that the prevalence of knowledge about EC increases with educational status and the difference is statistically significant (p value= 0.008). Age and current occupation were not significantly associated with knowledge about EC among the study subjects. Table 7 shows the knowledge about EC among the study subjects according to sociodemographic characteristics of their family. The prevalence of knowledge was higher among the study subjects who belonged to upper middle or above socioeconomic group. (p value = 0.006).

The knowledge about EC was found to be higher among women of Muslim religion than women of Hindu religion (p value = 0.04). Difference in the family members was not significantly associated with the knowledge about EC among the study subjects.(Table 7)

Table 8 shows the knowledge of emergency contraception according to obstetric and behavioural characteristics of the study subjects. The number of children (upto 2) and usage of contraceptive method were significantly associated with the knowledge about emergency contraception (p value <0.05). History of abortion was not significantly associated with the

knowledge about EC.

Table 9 shows the adjusted odds ratios and 95% confidence intervals of the factors found to be associated with the knowledge about EC among the study subjects from a final multivariate logistic regression model. Being educated was associated with higher odds of having the knowledge about EC (AOR 1.872 95% CI 1.102-3.182). Study subjects belonging to the Muslim community had higher odds of having the knowledge about EC (AOR 1.724 CI 1.079-2.757). The study subjects with higher socio economic status (upper middle and above) were associated with higher odds of having the knowledge about EC (AOR 1.696 95% CI 1.065-2.701). The study subjects who were using any contraceptive method were found to be associated with the knowledge about EC as compared to the non contraceptive users (AOR 0.336 95% CI 0.196-0.576).

DISCUSSION

The present study was carried out to assess the knowledge of emergency contraception among the married women of 18 to 45 years in an urban area of Delhi.

Knowledge about emergency contraception

Table 6. Knowledge of EC according to socio-demographic characteristics of study subjects (N=410)

Characteristics	Total	Heard about EC N(%)	Not heard of EC N(%)	X ² , df, p value
Age				
18-25	101	40(39.6)	61(60.4)	5.211, 2 , 0.074
26-35	205	104(50.7)	101(49.3)	
36-45	104	41(39.4)	63(60.6)	
Education status				
Illiterate and less than primary	96	32(33.3)	64(66.7)	7.035, 1, 0.008
Primary and above	314	153(48.7)	161(51.3)	
Current occupation				
Housewife	384	170(44.2)	214(55.8)	1.771, 1 , 0.183
Gainfully employed	26	15(57.7)	11(42.3)	

Table 7. Knowledge of EC according to socio-demographic characteristics of the family of study subjects (N=410)

Characteristics	Total	Heard about EC N(%)	Not heard of EC N(%)	X ² , df, p value
Religion				
Hindu	132	41(39.6)	91(60.4)	3.9, 1, 0.04
Muslim	278	144(51.8)	134(48.2)	
Socioeconomic status				
Upto lower middle	247	98(39.7)	149(60.3)	7.44,1, 0.006
Upper middle and above	163	87(53.4)	76(46.6)	
No. of family members				
4 or less	137	66(41.8)	71(51.8)	0.775,1,0.379
More than 4	273	119(43.6)	154(56.4)	

Table 8. Knowledge of EC according to obstetric and behavioral characteristics of study subjects(N=410)

Characteristics	Total	Heard about EC N(%)	Not heard of EC N(%)	X ² , df, p value
Number of children				
Upto 2	217	122(56.2)	95(43.8)	7.749, 1, 0.005
More than two	193	80(41.5)	113(58.5)	
History of abortion				
Yes	157	69(43.9)	88(56.1)	0.141, 1,0.707
No	253	116(45.8)	137(54.2)	
Usage of contraceptive method				
Yes	315	161(51.1)	154(48.9)	19.69, 1,< 0.001
No	95	24(25.3)	71(74.7)	

Table 9. Multivariate logistic regression analysis of factors associated with knowledge about EC

Characteristics	AOR	95% CI	P value
Education			
Illiterate	1.00		
Primary and above	1.872	1.102-3.182	0.020
Religion			
Hindu	1.00		
Muslim	1.724	1.079-2.757	0.023
Socioeconomic status			
Upto lower middle	1.00		
Upper middle and above	1.696	1.065-2.701	0.026
Contraceptive usage			
Yes	1.00		
No	0.336	0.196- 0.576	<0.001

The knowledge about EC among the married women of 18-45 years, in Darya ganj was found to be 45.1%. This is much higher than that reported in NFHS-III (2005-2006), according to which the knowledge about emergency contraception is 16.1% among the women living in urban area [6].

A study done by Relwani et al, in 2012, in an engineering college in Nagpur district, Maharashtra, showed that 92.7% of girls had knowledge about emergency contraception. This difference is because this study was conducted in an engineering college, it was based on only young women pursuing higher studies [7].

A study by Kokane et al, done in rural tertiary care hospital in Maharashtra, in 2012 revealed that majority of women undergoing MTP were literate. Only 10.64% women were having knowledge about emergency contraception. This study reflected much lower knowledge among women and this may be attributed to the study being conducted at rural medical college catering mostly rural and tribal population from nearby villages [8].

Source of information about EC

Most common source of information about ECP was found to be mass media (72.3%). Nearly 15.2% of the study subjects had heard about ECP from friends and 3.4% from relatives. There were 12 (6.8%) study subjects whose source of information about EC was health care provider and 4 (2.3%) study subjects' source was family planning clinic. This finding is comparable to a study carried out in rural Maharashtra (Kokane et al, in 2012 [8]) where media contributed maximum for getting information about emergency contraception. Mass media was found to be the main source of information about EC in various studies done in India. Similar finding was revealed in study done in an engineering college by Relwani et al in 2012, in Nagpur [7]. Kose et al in 2012, demonstrated that mass media was the main source of information about emergency contraception among the married women of reproductive age group, in a study carried out in a rural based teaching hospital in Maharashtra [9].

However, in the international studies, media is not the main contributor of information about EC. Kongnyuy et al [10] in 2007, reported that the most important sources of information on ECPs for students of Cameroon, were informal networks such as friends and family members. Similar findings have been reported by other authors [11,12]. A study done in Pakistan by Naz et al in

2009, reported that, 30% study subjects got their information about emergency contraception from doctors, 34% from lady health visitors (LHVs) and 10% from friend [13]. This variation about the source of information is attributable to differences in study methodology. It is probable that the media is the main source of information about EC in India which can be attributed to the aggressive advertising campaigns by radio, television, billboards, and magazines by the commercial private sector in India.

In our study, out of the 185 study subjects who had heard about EC, about 118 (66.7%) study subjects knew the correct maximum acceptable time to take ECP after unprotected sexual intercourse while, 29 (16.4%) study subjects didn't know about the maximum acceptable time to take ECP. This proportion is higher than that reported in a study done in Nagpur, by Relwani et al [7], in 2012, in which only 42.4% knew that emergency contraceptives could be taken up to 72-120 hours after unprotected sexual intercourse. This proportion is much higher than that reported in a study done in Pakistan (2009) by Naz et al, where only 2% of the study subjects gave the correct (72 hours) time during which post coital contraception could be used safely [13]. A study by Tamire et al in Addis Ababa, Ethiopia (2007), 26.2% of the female students could tell the correct timing of administration of EC pills [14]. The higher proportion of the females knowing the correct timing of EC can be explained by the differences in study population as well as differences in culture, social norms, beliefs and attitudes.

Factors associated with the knowledge about EC

The prevalence of the knowledge about EC, was higher among women who were literate. This finding is comparable to other studies which have been done about knowledge of EC in India and abroad. Relwani et al in 2012, demonstrated that higher education status has been found to be associated with knowledge about EC among the college students in Nagpur [7]. Similar finding was revealed by Kose et al and Kokane et al in 2012, in the studies done in Maharashtra [8,9]. A study done in California by Foster et al in 2004 revealed that better educated women were more informed about the EC [15]. Myer et al in South Africa (2007) also showed similar finding [16].

The prevalence of knowledge was higher among the study subjects who belonged to upper middle or above socioeconomic

group. This finding is comparable to that found in a study done by Kose et al, in Nagpur (2012) among the married women of reproductive age group [9]. Foster et al in 2004, in California demonstrated that those women who have the fewest resources to manage an unplanned pregnancy - women with low incomes exhibit low levels of knowledge of emergency contraception [15].

Study subjects belonging to the Muslim community had higher odds of having the knowledge about EC. This finding can be attributed to the fact that most of the females belonging to Hindu religion were using either permanent method or Cu T as a method of contraception, and hence did not experience any risk of unwanted pregnancy. While most of the Muslim study subjects were using either condom or withdrawal method for contraception, had history of abortions (twice or more), possess a greater risk of unwanted pregnancy, so that may be the reason that they were more aware about EC. In our study, the proportion of Muslim women having knowledge about emergency contraception was found to be significantly higher (51.8%) than women of Hindu religion (39.6%). This proportion is much higher than found in the study done by Ade et al in an urban slum of Raichur, Karnataka (2014) in which, only 13.4% of Muslim women were aware of Emergency Contraception [17]. This variation can be attributed to the fact that this study was done in a slum area of Karnataka, with majority of the study subjects belonging to the lower socioeconomic status, and had less access to audio visual media, which is found to be the main source of information about EC in India, in various Indian studies [7,9].

There were 315 (76.8%) study subjects who were using some method of contraception, at the time of interview. The study subjects who were using any contraceptive method were found to be associated with the knowledge about EC as compared to the non contraceptive users. This finding can be attributed to the fact that study subjects who are aware about family planning methods and are currently using any contraceptive method are also aware about the method to prevent unwanted pregnancy with the use of EC.

CONCLUSION

It can be concluded from the present study that the knowledge about emergency contraception is low among the married women of an urban area of Delhi. Only 45.1% of the study subjects had heard about emergency contraception. Out of these, only 68.1% of the study subjects knew the correct maximum acceptable time to take ECP after unprotected sexual intercourse. There is need to educate women about the available methods of emergency contraception and correct timing of its use. The women should be counselled about the regular methods of contraception and to keep the emergency contraception in reserve for emergency purpose only. In this study, data was collected and assessed the relationship of several determinants of knowledge of emergency contraception, which have been investigated in very few studies. These included determining the association of knowledge with religion and contraceptive usage. This study is the first of its type about emergency contraception among married women of reproductive age in an urban area of Delhi.

Mass media was found to be the main source of information about emergency contraception in this urban area in Delhi. Mass media can help in popularising emergency contraception in India, but there should be no misinformation. It should provide the complete and accurate information about emergency contraception, regarding its use in emergency situations only.

Health care providers, both doctors and paramedics and the field workers could be the best source of providing authentic and complete information to the women about emergency contraception.

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