

# Awareness about emergency contraceptives pill in women who came for medical termination of pregnancy

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## ABSTRACT

**Objective:** Emergency contraception, otherwise known as postcoital contraception, refers to a group of birth control modalities that, which can reduce the chance of unintended pregnancy if taken within the specific time limits. The objective of this study was to determine the level of awareness of emergency contraceptive techniques and fertility awareness in a population of pregnant females who were presenting for medical termination of pregnancy.

**Methods:** The study was carried out in 150 females requesting an induced abortion by MTP (Medical Termination of Pregnancy) clinic which is run by Department of Obstetrics and Gynecology at New Civil Hospital, Surat, over a period of 6 months from November 2009 to April 2010. All the women were interviewed by a trained interviewer with the help of a pre validated & pretested questionnaire.

**Results** - The study comprises of 152 females, and median age was 27 years. 32.89 % were illiterate. Only 36(23.68%) had heard the term ' emergency contraceptive', out of which 3% had exact idea about exact use(it should be taken after unprotected intercourse) of EC pill. The most common source of information was television (100%) in all. Among the users most common method of contraception was condom and oral contraceptives (73.68%). Only 7.24% knew the time interval when in the menstrual cycle they were likely to conceive. 30(19.74%) females had previous history of abortion but among them only 17(56.67%) were given education regarding emergency contraceptive use. 9(25%)are in favour of making EC pill available without doctor's prescription. 116 (76.32%) said, sex education should be made compulsory at school level.

**Conclusion** - Knowledge about emergency contraception and fertility awareness is very low among pregnant females coming for induced abortion in New Civil Hospital, Surat. Efforts should be made to increase awareness of emergency contraceptives.

**KEY WORDS:** Emergency contraception ,Pregnant females ,fertility awareness.

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## Introduction

In India, prevalence rate for contraception is 48 percent.<sup>1</sup> The recent National Family Health Survey shows that nine per cent of all recent births or pregnancies were unwanted and 12 per cent of women would have preferred to delay their pregnancy.<sup>2</sup> In India, more than 75% of pregnancies are not planned and a quarter of them are undesired.<sup>3</sup> Annually almost 11 million abortions take place in the country, and more than half of these are unsafe, accounting to high maternal morbidity and mortality rates.<sup>4</sup> This reflects the large unmet need for contraception in India. The reasons for above situation are poor awareness and accessibility to contraceptive methods which calls for increase efforts in this direction through the family welfare programme.<sup>5</sup>

Nationally, data from NFHS-2 [National Family Health Survey] shows a lifetime induced abortion ratio of 1.1 among married adolescents.<sup>6</sup> While women of all age groups seek abortion in India, a recent review suggests that the majority of those seeking abortion are married and in the age group of 20-29 years.<sup>7</sup> Among the unmarried, adolescents constitute a disproportionately large percentage of those who seek abortion. At least one half of unmarried women seeking abortions are adolescents, many of whom are below 15 years.<sup>8</sup>

Emergency post coital contraception may be defined as the use of a drug or device to prevent pregnancy after intercourse within defined time constraints which can reduce risk of unwanted pregnancy in a safe and effective way.<sup>9</sup> Although emergency contraception is safe and effective, it should be used only when routine contraception is missed or forgotten. The available modalities are: (1) high-dose estrogen; (2) the combined oral contraceptive pill; (3) mifepristone (RU486) (4) levonorgestrel (LNG) and (5) the copper intrauterine device which is not a good choice for adolescents.<sup>10</sup>

Emergency Contraception Pill (ECP) has been technically available since 1960's through off label in most of countries. In India, it was introduced in 2000, and in 2003 was made available in government supply by name of EC pill. At present, Levonorgestrel (LNG) has become the first progesterone-only tablet especially developed for post-coital contraception and is approved by the United States Food and Drug Administration (USFDA) and the Drug Controller of India.<sup>11</sup> LNG-ECP is available as a 2-pill pack, each tablet containing 0.75 mg of LNG, as a 2-dose regimen

preferably within 72 hours but not later than 120 hours of exposure. It can also be used as a single dose (1.5 mg LNG) within 72 hours but not later than 120 hours of exposure. It has been made available as an over-the-counter drug for popularizing it and is also available free of cost in most government hospitals. With LNG method, rate of pregnancy is 0.4% if started within 24 hours and 2.7% if started within 72 hours.<sup>12, 13</sup>

It is always considered better to advise regular use of contraceptives. Considering the typical use patterns and failure rates of the various contraceptives, emergency contraceptives should be provided as a back-up method.<sup>14</sup> Emergency contraceptives are required when unprotected intercourse occurs, including forced sex and rape, when methods like barrier contraceptives do not function properly, following miscalculations while observing periodic abstinence, missed oral contraceptive pills or expelled IUCDs [Intra Uterine Contraceptive Devices].<sup>15</sup> Therefore, prior awareness and knowledge of the correct usage needs to be imparted to both the providers and 'those who are likely to need it, which includes contraceptive users, non-users, adolescents, both men and women.

Previous published works indicate that both patients and health care providers suffer from a lack of awareness of emergency contraception.<sup>16-19</sup> Studies carried out at various places show very poor awareness among populations regarding EC pill. Jamieson et al in 1999 found it to be 3% among the patients presenting for pregnancy termination.<sup>20</sup> In India, a survey of 4000 women aged 18-55 years in the state of Delhi revealed very low (3.2%) awareness about emergency contraception.<sup>4</sup> Sonia Puri et al (2006-07) in a survey done on emergency contraception on women of slums in northern India also found 1.4% awareness, and 6 months after in a reassessment it has found to be increased up to 4.2%.<sup>21</sup> It was in concordance with the finding of the study related to South African women in whom only 2 out of 193 (1.03%) young females had ever used ECP.<sup>22</sup> Another similar study done by Mehra Reeti et al in 2004 also shows very poor awareness (i.e. 1%).<sup>23</sup> The picture is not different in a study done in Chandigarh in educated women, where too the use of hormonal contraceptive as ECP was very low.<sup>24</sup>

The emergency contraception in the form of EC pill/I-pill is made available and promoted by government of India since 7 years. In India previous studies which show poor awareness were carried out in the period of 1999 to 2005.<sup>2, 11, 13, 22-24</sup> Advertisements, through media, was also not started at that time. In

following study our primary aim was to asses' awareness of the women who came for abortion at hospital about the emergency contraception. We also wanted to look for the factors which can play important role in contraceptive use like knowledge regarding normal reproductive physiology, duration of emergency contraceptive action, their adverse effects, opinion about sex education in school. Other aim was to assess role of health care facilities (government or private) in education of females presenting for abortion by taking previous abortion history.

**Materials and Methods**

The study was carried out in 150 females requesting an induced abortion by MTP (Medical Termination of Pregnancy) clinic which is run by Department of Obstetrics and Gynecology at New Civil Hospital, Suart, over a period of 6 months from November 2009 to April 2010. Total 452 pregnant females came for induced abortions in this period, out of which 152 females who consented for the participation in survey were included.

All the women were interviewed by a trained interviewer with the help of a pre validated & pretested questionnaire. Information was collected on various aspects like personal details such as age, education ethnicity (rural vs urban), knowledge regarding normal menstrual physiology, knowledge and use of contraceptives, previous MTPs and various aspects of EC pill, including knowledge, mechanism of action, correct timing, source of knowledge and past experience of EC use. Their opinion regarding sex education in school was also recorded .Questionnaire consisted of both open ended and close ended questions.

Analysis of data: Values were expressed as frequency, percentages and 95% CI around percentages.

**Results**

A total of 152 women were included in the survey. The mean age of respondents was 27.90 yrs (median was 27 years). The demographic characteristics of the respondents are shown in **Table 1**.

**Previous abortion history:** Out of 152 pregnant females, 30(19.74%, 95%CI, 14.19% to 26.78%) had history of previous abortions which are performed at private hospital and in Primary Health Centers by Obstetrician or by Medical officer. (Table 1) Most common method of performing abortion was surgical and only 17 (56.67%, 95%CI, 39.20% to 72.62%)

females had been educated about contraception. **(Table 1)**

S. No	Characteristics	Number (n=152)	(%)	95% CI
<b>1.</b>	<b>Age</b>			
	18-19 years	0	0	0
	20-25 years	56	36.84	29.59 to 44.75
	26-30 years	70	46.05	38.32 to 53.98
	31-35 years & above	26	17.11	11.95 to 23.88
<b>2.</b>	<b>Ever used contraceptive</b>	82	53.95	46.02 to 61.68
<b>3.</b>	<b>Educational status</b>			
	Uneducated	50	32.89	25.93 to 40.70
	Till 5 <sup>th</sup> standard	44	28.95	22.33 to 36.
	Till 8 <sup>th</sup> standard	28	18.42	13.06 to 5.34
	Till 10 <sup>th</sup> standard	21	13.82	09.22 to 20.20
	Higher Secondary	9	05.92	3.15 to 10.87
<b>4.</b>	<b>Number of children</b>			
	One	22	14.47	09.76 to 20.94
	Two	55	36.18	28.97 to 44.08
	Three	52	34.21	27.14 to 42.06
	More than three	23	15.13	10.30 to 21.68
<b>5.</b>	<b>Ever terminated pregnancy</b>			
	Yes	30	19.74	14.19 to 26.78
<b>6.</b>	<b>If Yes, where</b>			
	Primary health centre	5	16.67	07.34 to 33.56
	Private hospital	20	66.67	48.78 to 80.77
	At home	2	01.32	0.36 to 04.67
	Others- Government Hospital	3	01.97	0.67 to 05.64
<b>7.</b>	<b>Abortion performed by</b>			
	Trained Midwife	2	01.32	0.36 to 04.67
	Medical officer	6	20	09.51 to 37.31
	Obstetrician	19	12.50	08.15 to 18.70
	Non Medical person / Self	3	01.97	0.67 to 05.64
<b>8.</b>	<b>Means for Abortion</b>			
	Tablet	2	01.32	0.36 to 04.67
	Vaginal application of tablet	1	0.66	0.12 to 03.63
	By performing Surgery	25	83.33	66.44 to 92.66
	Others-injection by midwife	2	01.32	0.36 to 04.67
<b>9.</b>	<b>After abortion educated about contraception</b>			
	Yes	17	56.67	39.20to 72.62

**General Knowledge Regarding Reproductive Cycle:-**

Most of the females had knowledge about age of menarche and menopausal time. But knowledge regarding window fertility period was very poor. (Table 2) Only 16.45 % (95%CI, 11.40% to 23.15%) of them had knowledge that it is between two menstrual periods. 70.39 % (95%CI, 62.71% to 77.08%) females said that there are chances of getting pregnant after unprotected intercourse. Only 7.24 % (95%CI, 4.09% to 12.49%) knew that it depends upon timing of fertility period. (Table 2)

S. No	Topics	n=152	%	95 % CI
<b>1.</b>	<b>Age of Menarche</b>			
	8 to 10 years	3	1.97	0.67 to 5.64
	11 to 15 years	105	69.08	61.34 to 75.88
	16 to 20 years	43	28.29	21.73 to 35.92
	More than 20 years	0	0	0
	Don't know	1	0.66	0.12 to 3.63
<b>2.</b>	<b>Age of Menopause</b>			
	Age at which it starts:-			
	35years to 40 years	04	2.63	1.03 to 6.57
	41 years to 45 years	63	41.45	33.92 to 49.40
	46 years to 50 years	27	17.76	12.50 to 24.61
	More than 50 years	32	21.05	15.33 to 28.21
	Don't know	26	17.11	11.95 to 23.88
<b>3.</b>	<b>Window of fertility / most fertile period</b>			
	Just after the periods	72	47.37	39.59 to 55.27
	Between two periods	25	16.45	11.40 to 23.15
	Just before the periods	3	1.97	0.67 to 5.64
	Others	3	1.97	0.67 to 5.64
	Don't know	49	32.24	25.32 to 40.03
<b>4.</b>	<b>Chances of pregnancy after sex</b>			
	Chances are there	107	70.39	62.71 to 77.08
	No Chance	2	1.32	0.36 to 4.67
	Don't know	32	21.05	15.33 to 28.21
	Depends upon the timing of fertility period	11	7.24	4.09 to 12.49
<b>5.</b>	<b>Chances of pregnancy after unprotected sex</b>			
	Chances are there	94	61.84	53.92 to 69.18
	Not every time	2	1.32	0.36 to 4.67
	Don't know	25	16.45	11.40 to 23.15
	More in pt. who don't use contraceptive	24	15.79	10.85 to 22.42
	Depends upon the timing of pts. fertility period	6	3.95	01.82 to 08.34
	Less chance	1	0.66	0.12 to 3.63
<b>6.</b>	<b>Sex education should</b>			

	<b>be made compulsory at school level</b>			
	Yes	116	76.32	68.96 to 82.37
	No	25	16.45	11.40 to 23.15
	Don't know	11	7.24	4.09 to 12.49
<b>7.</b>	<b>Young people made to participant in sex education and provision of information to peers</b>			
	Yes	116	76.32	68.96 to 82.37
	No	30	19.74	14 .19to 26.78
	Don't know	6	3.95	01.82 to 08.34
<b>8.</b>	<b>If No, reason</b>	30	19.74	14 .19to 26.78
	Society doesn't approve	20	13.16	08.68 to 19.45
	Conservative attitude	0	0	0
	Feeling of shame regarding sex education	2	1.32	0.36 to 4.67
	Don't know / No reason	14	9.21	5.57 to 14.87
<b>9.</b>	<b>Parental participation in educating / advising youth regarding contraception</b>			
	Yes	67	44.08	36.43 to 52.02
	No	46	30.26	23.52 to 37.98
	Don't know	39	25.66	19.37 to 33.14

**Awareness about general contraceptives:-**

Question assessing knowledge regarding other conventional contraceptives use was also asked. 112(73.68%, 95% CI, 66.16% to 80.04%) out of all (152) patients had awareness about condoms as well as oral contraceptive pills. Other responses were also recorded which were presented in detail in. (Table 3)

S. No	Topics	n=152	(%)	95%CI
<b>1.</b>	<b>What is Contraception</b>			
	Understands the concept			
	Yes	91	59.87	51.93 to 67.32
	Prevents pregnancy	86	56.58	48.63 to 64.20
	Used during sex	1	0.66	0.12 to 03.63
	Males use it (condom) during sex	4	2.63	1.03 to 06.57
	Don't know	61	40.13	32.68 to 48.07
<b>2.</b>	<b>Ever heard of contraception:</b>			
	Yes	107	70.39	62.71 to 77.08
<b>3.</b>	<b>Known contraceptive devices*:</b>			
	Condoms	112	73.68	66.16 to 80.04

	Oral Contraceptive Pills	112	73.68	66.16 to 80.04
	Intrauterine Devices (Copper-T)	97	63.82	55.92 to 71.03
	Tube ligation	152	100	97.54 to 100
	Injectable contraceptives	5	03.29	1.41 to 07.47
	EC pills	36	23.68	17.63 to 31.04
	Don't know	12	07.89	04.57 to 13.29
4.	Source of information regarding contraception*:			
	School / college	0	0	0
	Magazine	10	06.58	03.61 to 11.69
	Friends / Relatives /Neighbour	40	26.32	19.96 to 33.84
	Doctors / Hospital delivery	5	03.29	01.41 to 07.47
	T.V./ Radio / Newspaper	73	48.03	40.23 to 55.92
	Health workers/Aanganwadi workers	24	15.79	10.85 to 22.42
	Don't know	19	12.50	08.15 to 18.70
5.	Methods of contraception ever used*:			
	Oral contraceptive pill	34	22.37	16.47 to 29.63
	Condom	52	34.21	27.14 to 42.06
	Intrauterine device (Cu-T)	12	07.89	04.57 to 13.29
	Calendar / Withdrawal Method	0	0	0
	Don't use any	70	46.05	38.32 to 53.98
	MT pill	1	0.66	0.12 to 03.63
	Injectable contraceptives	2	01.32	0.36 to 04.67
	EC pill	1	0.66	0.12 to 03.63
6.	Frequency of usage :			
	Always	21	13.82	09.22 to 20.20
	Occasionally	56	36.84	29.59 to 44.75
	Never	75	49.34	41.51 to 57.21
7.	Decision regarding use of contraception:			
	Self	30	19.74	14.19 to 26.78
	Husband / Partner	62	40.79	33.30 to 48.74
	Both	40	26.32	19.96 to 33.84
	Don't use / No idea regarding use of contraception	20	13.16	08.68 to 19.45
8.	Where to get contraceptive from*:			
	Medicine shop	109	71.71	64.08 to 78.27
	Friends / Husband / Relatives	3	01.97	0.67 to 05.64
	Doctors	28	18.42	13.06 to 25.34
	Others-(Condom dispensing units , Government hospitals / Dispensaries,	38	25.00	18.79 to 32.44

	Aanganwaadi workers)			
	Don't know	21	13.82	09.22 to 20.20

\* More than one option was answered.

### Awareness and concept about emergency contraception:-

Of the 152 women asked about contraceptive to be used after unprotected intercourse, 22 of them (14.47%, 95%CI, 0.976 % to 20.94%) knew that there was something a woman could do within 3 days after unprotected intercourse to prevent pregnancy.(Table 4) Only 36 (23.68%,95%CI,17.63% to 31.04%) females had heard of the term 'emergency contraceptive'. Only 3(8.33%, 95%CI, 2.87% to 21.83%) out of these 36 exactly had idea about emergency contraception. (Table 4)

#### 1. Source of information about EC pill:-

Most common sources of information about EC were found to be television or radio in all 36(100%) respondents None other source of information like newspaper magazine, friend or internet has been quoted. (Table 4)

#### 2. Correct timing and mechanism of action:-

The correct timing of effectiveness of post coital pill (up to 72 hours after unprotected intercourse) was identified by 22 (61.11%, 95%CI, 44.86%to 75.22%) women. Only 1 (2.78% ,95% CI,0.49% to 14.17%) knew it could be taken within 5 days of unprotected intercourse (max limit of use 120 hrs) and also the exact mechanism of EC pill that it prevents fertilization.(Table 4)

#### 3. Reason for lack of awareness:-

The reason for not using EC pill despite having knowledge about it was, not knowing from where to procure it in 1(2.78%, 95% CI, 0.49% to 14.17%) and hesitation in obtaining pill in 2 (5.56%, 95%CI, 1.54% to 18.14%). When they were asked about the reasons for lack of awareness regarding EC pill, 17 females told they never heard about it. (Other responses are shown in Table 4)

#### 4. Comparison with OC pill:-

21(58.33%, 95% CI,42.2% to72.86%) females had considered EC pills more effective than OC pills.32(88.89 %,95% CI,74.69% to 95.59%) female think it is necessary to consult doctor before making a decision to take EC pill and 8(77.78%,95%CI,61.92% to 88.28% ) think that there

is a need for pregnancy test.(Table 4)

S. No	Topic	No	(%)	95 (%)CI
1.	<b>Heard about contraceptive which can be used after unprotected sex to prevent pregnancy (n=152)</b>			
	Yes	22	14.47	09.76 to 20.94
	No	129	84.87	78.32 to 89.70
	Doesn't understand the question	1	0.66	0.12 to 03.63
2.	<b>Ever heard about ECP (n=152)</b>			
	Yes	36	23.68	17.63 to 31.04
3	<b>Any pill by the name of Emergency Contraceptive available in the market (n=152)</b>			
	Yes	31	20.39	14.76 to 27.49
	No	2	5.56	1.54 to 18.74
	Don't know	119	78.29	71.08 to 84.10
4	<b>Ever used EC pill (n=152)</b>			
	Yes	29	19.08	13.63 to 26.06
	No	6	03.95	01.82 to 08.34
	Don't know about EC Pill	116	76.32	68.96 to 82.37
	Confuses with MT Pill	1	0.66	0.12 to 03.63
5	<b>Source of information about ECP*(n=36)</b>			
	School/College	0	0	0
	Doctor	0	0	0
	TV/Radio/Newspaper	36	23.68	17.63 to 31.04
	Magazine	0	0	0
	Friends	0	0	0
	Others	0	0	0
6	<b>Difference between EC &amp; OC pills*(n=36)</b>			
	Prevents unwanted pregnancy	3	8.33	2.87 to 21.83
	Aborts foetus	6	16.67	07.87 to 31.89

	Don't know	2	5.56	1.54 to 18.74
	More powerful / potent	21	58.33	042.20 to 72.86
	EC Pill not to be taken every day (every 24/72 hrs)where as OC pill to be taken every day	3	8.33	2.87 to 21.83
	To be used with in 24 hrs of exposure	1	2.78	0.49 to 14.17
7	<b>Need to get medical check up done by doctor before EC pill usage (n=36)</b>			
	Yes	32	88.89	74.69 to 95.59
	No	2	5.56	1.54 to 18.74
	Don't know	2	5.56	1.54 to 18.74
8	<b>Need to get pregnancy test done before taking EC pill (n=36)</b>			
	Yes	28	77.78	61.92 to 88.28
	No	5	13.89	6.08 to 28.66
	Don't know	3	8.33	2.87 to 21.83
9.	<b>Up to how many hours after intercourse EC pill can work (n=36)</b>			
	<b>Maximum 120 hours</b>	1	2.78	0.49 to 14.17
	<b>Maximum 72 hours</b>	22	61.11	44.86 to 75.22
	<b>Maximum 24 hours</b>	3	8.33	2.87 to 21.83
	<b>Don't know</b>	10	27.78	15.85 to 43.99
10	<b>Mechanism of action of EC pill (n=36)</b>			
	Interrupts an ongoing pregnancy (abortion)	3	8.33	2.87 to 21.83
	Prevents / delays ovulation	0	0	0
	Prevents fertilization / implantation	1	2.78	0.49 to 14.17
	Don't know	32	88.89	74.69 to 95.59
11	<b>Usefulness of EC Pills in preventing pregnancy (n=36)</b>			
	Sometimes useful	0	0	0
	Mostly useful	5	13.89	6.08 to 28.66
	Not useful	4	11.11	04.41 to 25.31
	Don't know	27	75	58.93 to 86.25

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12	<b>Reasons for lack of awareness regarding EC pill* (n=36)</b>			
	Never heard about it	17	47.22	31.99 to 62.99
	Not properly advertised	12	33.33	20.21 to 49.67
	Lack of sex education in schools	11	30.56	18 to 46.86
	Costly	1	2.78	0.49 to 14.17
	Confusion with MT pill	1	2.78	0.49 to 14.17
	Half baked knowledge due to TV & advertisements	3	8.33	2.87 to 21.83
	Self unawareness	2	5.56	1.54 to 18.74
	Don't know	5	13.89	6.08 to 28.66
13	<b>Reason for not taking EC pill despite knowledge regarding it (n=36)</b>			
	Difficulty in obtaining / Not easily available	1	2.78	0.49 to 14.17
	Failure even after taking the pill	4	11.11	04.41 to 25.31
	Pill not taken properly	1	2.78	0.49 to 14.17
	Hesitancy in obtaining the pill	2	5.56	1.54 to 18.74
	Guilt / Feeling of shame regarding EC pill usage	0	0	0
	Fear of side effect / Bleeding	7	19.44	9.75 to 35.03
	Lack of proper knowledge	19	52.78	37.01 to 68.01
	Costly	1	2.78	0.49 to 14.17
14	<b>EC pill usage is harmful to the body (n=36)</b>			
	Yes, many	7	19.44	9.75 to 35.03
	No	6	16.67	7.87 to 31.89
	Don't know	23	63.89	47.58 to 77.52
15	<b>EC pill usage harmful for future pregnancy (n=36)</b>			
	Yes	14	38.89	24.78 to 55.14
	No	2	5.56	1.54 to 18.74
	Don't know	20	55.56	39.58 to 70.46
16	<b>After taking EC pill- if still pregnant, harmful to growing foetus (n=36)</b>			
	No harm	3	8.33	2.87 to 21.83

	Yes, big risk	9	25	13.75 to 41.07
	Yes, mild risk	8	22.22	11.72 to 38.08
	Don't know	16	44.44	29.54 to 60.42
17	<b>Safe to use for HIV / AIDS patients (n=36)</b>			
	Yes	5	13.89	6.08 to 28.66
	No	4	11.11	04.41 to 25.31
	Don't know	26	72.22	56.01 to 84.15
	AIDS pt. use barrier method	1	2.78	0.49 to 14.17
18	<b>EC pill safe if patient on ART (n=36)</b>			
	Yes	4	11.11	04.41 to 25.31
	No	3	8.33	2.87 to 21.83
	Don't know	28	77.78	61.92 to 88.28
	AIDS pt. supposed to use barrier method of contraception	1	2.78	0.49 to 14.17
19	<b>EC pill should be made available without doctors prescription (n=36)</b>			
	Yes	9	25	13.75 to 41.07
	No	11	30.56	18 to 46.86
	Don't know	16	44.44	29.54 to 60.42
20	<b>If No- Reason (n=11)*</b>			
	Misuse of Contraceptives	2	5.56	1.54 to 18.74
	Side effects / Harmful	7	19.44	9.75 to 35.03
	To get right advice one must seek doctor	2	5.56	1.54 to 18.74
21	<b>EC pill safe to use in 13 to 16 yrs age group (n=36)</b>			
	Yes	8	22.22	11.72 to 38.08
	No	8	22.22	11.72 to 38.08
	Don't know	19	52.78	37.01 to 68.01
	Confuses with MT pill	1	2.78	0.49 to 14.17
22.	<b>EC pill should be easily made available to young adults (n=36)</b>			
	Yes	10	27.78	15.85 to 43.99
	No	12	33.33	20.21 to 49.67
	Don't know / can't say	14	38.89	24.78 to 55.14
23	<b>If No- Reason (n=12)</b>			
	Misuse & loosening of character	8	22.22	11.72 to 38.08
	Side effects / Harmful	1	2.78	0.49 to 14.17

whereas 11(30.56%, 95%CI, 18%to46.86%) believe it should not be made OTC because of fear of misuse or side effects. (Table 4)

7. Views regarding sex education:

When views are taken regarding sex education, whether it should be made compulsory at school level or not, 116 (76.32%, 95%CI, 68.96% to 82.37%) said yes, and same also think of making young people participate in these programs. 13.16%(95%CI ,08.68% to 19.45%) think that this should not be done since they fear society will not approve sex education. 44.08%(95%CI,36.43%to52.02%) agreed that parents should take part in educating or advising youth regarding contraception.(Table 2)

Discussion

Though 19.74% females already had a previous MTP and even they had not been educated regarding emergency contraception, it was in accordance with the similar study done by Mehra Reeti et al where also 30% of the women already had a previous MTP and even then were not made aware of EC.<sup>23</sup> In contrast another study done by Srivastava et al, it was only 0.7%.<sup>25</sup>

We found that all the females coming for induced abortion has awareness about female sterilization in the form of tubal ligation. Where, in another study in India, it was found to be 82.2%.<sup>23</sup> Awareness with regards to use of condoms and oral contraceptive was equal and good (73.68%). It was more in comparison to other study/studies that was 53.7% and 60.5% respectively.<sup>24</sup> IUCD came 3<sup>rd</sup> with 63.82% awareness, contrary to the previous study where it was the most known (61.2%) temporary method of contraception. In our study 7.89% females did not know anything about contraceptive device which was quite low in comparison to the other study where 17.8% of the women were not aware of any form of contraception.<sup>23</sup> 46.05% of females had not practiced any form of contraception previously, which was very similar to study done by Srivastava et al where it was 45.3%.<sup>24</sup>

The number of pregnant females who came for induced abortion and heard about emergency contraception in our study was only 23.68%. This finding correlates with the only other Indian study done by Mehra Reeti et al in 2004 on women coming for abortion, where the awareness was only 1%.<sup>23</sup> Patient education is of paramount importance. A study carried out by Tripathi et al, in New Delhi also showed similar results. Practically none of their patients were

	To get right advice one must seek doctor	2	5.56	1.54 to 18.74
	Too young to understand	1	2.78	0.49 to 14.17
24	<b>EC pill should be used on regular basis for contraception (n=36)</b>			
	Yes, it is very safe	0	0	0
	No, it is harmful	15	41.67	27.14 to 57.80
	Yes, it is very effective	1	2.78	0.49 to 14.17
	No, as other contraceptives are more / equally effective	2	5.56	1.54 to 18.74
	No, they are more expensive	0		
	Don't know	16	44.44	29.54 to 60.42
	Confuses with MT pill	2	5.56	1.54 to 18.74
25	<b>Any drug interaction / side effect possible if EC pill taken along with any other drug (n=36)</b>			
	Yes	9	25	13.75 to 41.07
	No	4	11.11	04.41 to 25.31
	Don't know	23	63.89	47.58 to 77.52

Table No. 4: Knowledge regarding Emergency Contraceptive Pill (ECP) among patients coming for Induced abortion at New Civil Hospital, Surat

5. Adverse effects:-

When being questioned about possibility of harmful effects, 7 females (19.44%, 95%CI, 9.75% to 35.03%) said they were aware about it while 14 (38.89%, 95%CI, 24.78% to 55.14%) thought it would harm future pregnancies. Only 1 (2.78%, 95%CI, 0.49% to 14.17%) female had idea that AIDS patient should use barrier methods and 4(11.11%, 95%CI, 4.41% to 25.31%) said that EC pill can safely be taken with ART. (Table 4)

6. Whether to make OTC [over the counter drug] or not:-

9(25%, 95%CI, 13.75% to 41.07%) are in favour of making EC pill available without doctor's prescription,



aware of EC.<sup>11</sup> Similar finding had also been found in a study done by Puri Sonia et al<sup>13</sup> 2007 on female college students and Takkar et al<sup>25</sup> in 2005 on educated working women. In other parts of Asia, such as Pakistan, Kuwait & Iran, awareness regarding EC pill was found to be low in comparison with data from Europe and North America.<sup>26, 27</sup> Similar studies had been carried out by Jamieson et al in American women where 36% of women had some knowledge regarding emergency contraception.<sup>20</sup> In another study in Jamaica university students revealed an 84% general awareness while 10% had used it themselves.<sup>28</sup> In a study from Mexico city awareness jumped from 13% in 1997 to 83% in 2000 after 3 years of intensive information campaigning for general public.<sup>29</sup> In South Africa, a similar study revealed 17% awareness among young women.<sup>30</sup> George et al studied a general practice based population of 1290 women aged 16-50, of whom 78.6% had heard of emergency contraception.<sup>31</sup> Pearson et al interviewed 167 pregnant teenagers, of whom 81% had heard of it.<sup>32</sup>

Contrary to study done by Rebecca and Eleanor, where most women learnt about EC through a health care provider (50%),<sup>33</sup> our results show that most common source of information is television (48%). Health workers /Aanganwadi workers contribute only 15.79% in spreading awareness. These findings point that, there is a need to take a serious thought on the implementation of government program, since these people were the most important links in our health service facility. The media /magazine were cited even less frequently as a source of knowledge. Majority (72.5%) of women surveyed supported increased advertisement of emergency contraception.

Our study reaffirms the findings of others showing poor knowledge of the correct time limit (14.47%) for using emergency contraception. Pearson et al quoted a figure of 22%<sup>32</sup> and George et al a figure of 13.6%<sup>32</sup> for pregnant teenagers and women who were able to give the correct time limit. Another study by Anna Graham et al too reaffirms the same findings.<sup>34</sup>

In our study, 25% females were in favour of making EC pill being made available over the counter (OTC) without prescription. This was less in comparison to the study done on university students in Uganda where it was 36.6%.<sup>35</sup> Females who were against this proposition were also more in similar study (63.4%) in comparison to present study (30.56%). Reason for this discrepancy may be the different age group in our study (married and multiparous pregnant females) and overall poor awareness of emergency contraceptives.

In most developed countries like Norway and Sweden, it is approved as an over the counter (OTC) preparation. In America, the ACOG [American College of Obstetricians and Gynecologists] also recommended that EC pills should be made available as OTC in the United States<sup>36, 37</sup> But some countries such as Italy, Hungary, Russia, and Romania still require medical prescription. There are concerns that women using EC pills may over the time become lax with their regular birth control methods. However, reported evidence indicates that making EC pills more readily available would ultimately reduce the unintended pregnancies.<sup>38, 39</sup>

In 2009, there was talk that the Union Ministry of Health and Family Welfare, through the Drugs Controller General of India, would pull ECs out of the OTC list. However, in November, the drugs technical advisory board — the body that deals into technical matters relating to pharmaceuticals — decided not to do so.<sup>40</sup>

Very high proportion of females agreed on compulsory sex education in school in our study (75.32%). The same numbers also think that young people should participate in these programs, which was higher than the study done by Bhyamugisha et al in Uganda (61%).<sup>35</sup> Since in 40.79%(95%CI,33.30% to 48.74%) of females, choice of contraception is decided by husband or male partner(Table 3). Need of sex education in school and also to males becomes very important.

Two thirds of women (77.5%) reported they would be willing to use EC in future, which is almost same as reported by N.Takkar.<sup>25</sup> When asked should EC be available without prescription more than half (60%) were against it, which is contrary to the western world,<sup>36</sup> and felt that it is embarrassing to ask for EC, only 37.5% were in favour of it.

Limitations of our study were that pregnant patients came for induced abortion included in this study were only from New Civil Hospital, Surat and the sample size of the study was less.

These findings definitely show that although awareness of other contraceptive is good, it is the Emergency Contraception awareness which is found to be poor in this study. Since considerable amount of time has been passed (5yrs) since its introduction in government health supply, it seems that somehow population attending these hospitals are not getting required knowledge about it, since females already undergone for medical termination of pregnancy, even

in government hospitals had not been educated about emergency contraception. Taking this fact into consideration, authors recommend that Government should rethink about the policy and reformulate it, since this can reduce the mortality and financial burden of abortion in our country.

Looking in to above prospects, it becomes necessary for us to educate women regarding correct use and mechanism of EC pills, since several women tend to use it as an abortion pill. It should be used as an SOS medication to deal with a crisis brought on by unprotected sex; it is not and cannot be treated as a staple means of contraception.

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