Knowledge and Use of Emergency Contraceptive Pills among Bachelor's Level Female Students of Kathmandu Valley

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Abstract

Emergency Contraceptive Pill (ECP) is used for preventing pregnancy after having unprotected sexual intercourse, contraceptive failure or forced sex. The use of ECP within 120 hours of sexual intercourse could prevent unwanted pregnancy and its adverse effects particularly unintended childbirth and unsafe abortion. The study, therefore, aimed to assess knowledge and use of emergency contraceptives among Bachelors level female students from Kathmandu Valley. A descriptive cross-sectional study was undertaken from August to November 2017 among 347 female students who were studying at the Bachelors's level. A random sampling technique was used to select study participants and a structured self-administered questionnaire was used to assess the knowledge and use of ECP after securing informed consent. Epi data and SPSS version 22 were used for data processing and analysis. The mean age of the female students was 21.5 years. Overall, 91.4% of the respondents had ever heard about emergency contraceptives. The main sources of information were radio or television, the internet and newspapers. About 4.6% of the undergraduate female students used ECP. Age, marital status, use of contraceptives and knowledge of ECP used within 72 hours were significantly associated with use of ECP. Although the findings of this study showed a high prevalence of knowledge among respondents, the improvement of female students' knowledge on specific details of ECP and its advantages/disadvantages and timely utilization needs to be considered for any future awareness programmes.

Keywords: Emergency contraceptive, Knowledge, Use, Bachelor's level female student

Introduction

Emergency contraceptive (EC) is a method of preventing unwanted pregnancy after a female passage on unprotected sexual intercourse, contraceptive method failure or forced to have sex against her will. Unprotected sex may result from a lack of knowledge about access to contraception as well. ECP is also known as "morning-after" or "post-coital" contraceptive (Nibabe & Mgutshini, 2014). ECP can prevent up to over 95% of pregnancies when taken within 5 days after intercourse and when inserted within 120 hours of unprotected intercourse. It is a copper-bearing intrauterine device (IUD) which is more than 99% effective in preventing pregnancy. Emergency contraceptive seems to be more effective when used within 72 hours of unprotected intercourse. However, recent researches have shown that it is effective within 120 hours (Mahmood & Nisar, 2012). Emergency contraceptive is not recommended as a regular family planning method, it is used occasionally. The effectiveness of emergency contraceptives reduces with a lapse of time.

There were 213 million pregnancies that occurred in 2012, up slightly from 211 million in 2008. Eighty-five million pregnancies, representing 40 percent of all pregnancies, were unintended in 2012. Of these, 50 percent ended in abortion, 13 percent ended in miscarriage, and 38 percent resulted in an unplanned birth (Sedgh, Singh, & Hussain, 2014). In South Asia, unwanted pregnancy is one of the leading causes of maternal mortality and morbidity (Adhikari, 2009). It is estimated that among total pregnancy in South and South-East Asia, almost 1/3 of pregnancies are unplanned or unintended. It is 35% in Pakistan, 30% in Bangladesh, 21% in India and 35% in Nepal. These large numbers of unwanted pregnancies in South and South-East Asia are attributed to the low rate of contraceptive use, contraceptive method failure and high unmet need for contraceptive. Between 8 to 30 million pregnancies each year result from contraceptive failure either due to inconsistent or incorrect use of contraceptive methods or failure of the method itself (Mahmood & Nisar, 2012).

In Nepal, as per the Nepal Demographic Health Survey 2006, only 0.1% women of the reproductive age group ever use an emergency contraceptive, and the knowledge of emergency contraceptives among women of the same age group is estimated to be 28.8% (Ministry of Health - MOH/Nepal; New ERA/Nepal; ICF, 2017). Knowledge about emergency contraception and the lactational amenorrhea method (LAM) is relatively poor, with only 36% of women and 55% of men have heard of emergency contraception and 25% of women and 15% of men have heard of LAM (Ministry of Health and Population - MOHP/Nepal; New ERA/Nepal; ICF International, 2012).

One study in Nepal showed that more than one third (35%) of all pregnancies and 41% of current pregnancy among currently pregnant women were unintended and the prevalence of premarital sex was 39% among college males and 12% among college females. The study also found that large proportions of college students who were studying in Kathmandu valley (43% male and 55% female) did not use a condom during their first sexual intercourse (Adhikari, 2009).

The Universal Declaration of International Conference on Population and Development (ICPD) has recommended governments to ensure women's empowerment. One of the key factors of women's empowerment is to ensure the right of controlling the use of emergency contraceptives and protecting women from unwanted birth. There is also evidence that emergency contraceptives can decrease the rate of unwanted pregnancy thereby reducing the need for an abortion and the negative maternal health consequences associated with an unwanted pregnancy (Nottola, Belachew, Yimenu, & Gebresillassie, 2011).

However, only a few researches have been conducted in Kathmandu among young female students. The need for the study was important because of the severe outcomes faced by young females while having unwanted pregnancies.

Methods

Settings and Study Design

The study was conducted in constituent campuses and affiliated campuses to Tribhuvan University, Kathmandu and Purbanchal University, Biratnagar of Nepal. The study used a descriptive cross-sectional research design.

Study Participants and Sampling Technique

Bachelors level female students from two public and two private colleges were included in the study. The sample size was calculated using a single proportion formula calculating 95% confidence interval, 5% margin of error and 8% knowledge of ECP (Adhikari, 2009). The non-response rate was assumed by 10%. The final calculated sample size was 368 after adding a 10% non-response rate. The study analyzed data obtained from only 347 respondents.

A simple random sampling technique was used to collect the data. Female students from randomly selected classes were enrolled in the study. More than one class was taken when the required number of samples was not obtained. Study participants were selected in equal numbers as per the total number of female students of the respective colleges.

Ethical Considerations

The study was fully confidential and anonymous. Written informed consent was taken before participation in the study. The objectives were explained clearly to the respondents. The privacy of participants and the confidentiality of the data was strictly maintained.

Data Collection and Analysis

A structured self-administered questionnaire was used for data collection. The questionnaire was developed based on the literature review and conceptual framework developed for the study. The questionnaire was first developed in the English language and translated into the Nepali language. For validation, the questionnaire was pre-tested in similar setups before the actual data collection was commenced.

Data entry, editing, coding and cleaning were done using Epi data and the data were analyzed using IBM SPSS ver. 22. The data obtained on knowledge and use of ECP was described on the basis of demographic and social characteristics of the respondents. A Chi-square test was used to find out the association between dependent and independent variables of the study.

Results

Socio-demographic Characteristics of the Respondents

Table 1 presents the socio-demographic characteristics of the respondents. In total 347 female students of Bachelors's level were included in the study resulting to a response rate of 100%. The mean age was 21.5 years with minimum and maximum age 17 and 34 years respectively. Most of the students (n=246, or 70.9%) students were in the age group 20-24 years and 67 (19.3%) students belonged to age 15-19 years. The majority of the female students (n=312, or 89.9%) were unmarried whereas 31 (8.9%) were married and 4 (1.2%) were living with their boyfriends/partners. Out of the total, 294 (84.7%) were Hindus followed by Buddhists 43 (12.4%) and Christians 9 (2.6%). Most of the respondents (n=304, or 87.6%) had an urban background and the remaining 43 (12.4%) had rural backgrounds. Among total respondents, 178 (51.3%) were from government colleges and 169 (48.7%) were from private colleges respectively. Most of the students studied in the third year (n=147, or 42.4%). Most of the respondents (n=191, or 55.0%) were from ethnic group Brahmins/Chhetris followed by Janajatis (n=130, or 37.2%). Similarly, 213 female students (61.4%) were from outside

Kathmandu, many were living in rented room or apartment (n= 176, or 50.7%) and sharing accommodation with family (n= 206, or 59.4%).

Table 1. ***Socio-demographic characteristics of respondents***

Variable	Category	No. (n=347)	Percent (%)
Age	15-19 years	67	19.3
	20-24 years	246	70.9
	25 years and above	34	9.8
Marital status	Unmarried	312	89.9
	Married	31	8.9
	Living with boyfriend/partner	4	1.2
Grade level	First year	48	13.8
	Second year	77	22.2
	Third year	147	42.4
	Fourth Year	75	21.6
College type	Government	178	51.3
	Private	169	48.7
Religion	Hindu	294	84.7
	Muslim	1	0.3
	Buddhist	43	12.4
	Christian	9	2.6
Ethnicity	Janajati	130	37.2
	Dalit	11	3.2
	Brahmin/Chhetri	191	55.0
	Madhesi	12	3.5
	Muslim	3	0.9
Residence	Own house	171	49.3
	Rent or Apartment	176	50.7
Accommodation	Family	206	59.4
	Brothers/Sisters	80	23.1
	Others relatives	9	2.6
	Boyfriend	3	0.9
	Hostel	37	10.7
	Husband	12	3.5
Permanent Address	Outside Kathmandu	213	61.4
	Inside Kathmandu and Surrounding	134	38.6
Living area	Rural	43	12.4
	Urban	304	87.6

Knowledge of Participants about Emergency Contraceptive Pills

As shown in Table 2, out of the total female students who participated in the study, 317 (91.4%) had ever heard about EC in their lives. Among 317 respondents who knew about ECP, 88 (27.2%) mentioned that they didn't know about the efficacy of Emergency Contraceptive. Of those 317 students, 88 (27.2%) responded that ECP terminates a pregnancy in case of pregnancy whereas 169 (52.3%) participants responded that ECPs could be bought without medical prescription. A majority of the participants (n=146, or 45.2%) didn't know that ECPs could be more effective when taken immediately and 58 (18%) of them had a misconception that ECP could protect from STIs. Moreover, 175 (54.2%) students reported that the recommended time to take emergency contraceptives is within 72 hours of unprotected sexual intercourse and 172 (53.3%) reported that the recommended dose for ECPs is one dose whereas 54 (16.7%) respondents mentioned two doses were necessary for protection. More than half of them (57%) female students didn't know about the correct time interval

between the doses of ECP, while one-fifth (22.9% and 20.1%) mentioned that recommended time intervals between the doses for ECP are 12 hours and 24 hours respectively (Table 2).

Table 2. *Knowledge of ECP among bachelors level female students*

Knowledge indicators	No. (n=347)	Percent (%)
Ever heard about emergency contraceptive		
Yes	317	91.4
No	24	6.9
Don't Know	6	1.7
Source of ECP Information		
TV/radio	232	72.0
Relatives	50	15.5
Boyfriend/Husband	44	13.7
Female friends	110	34.2
Internet	211	65.5
Magazines/Newspaper	134	41.6
Healthcare Providers	104	32.3
At campus	124	38.5
Others	5	1.6
Perception of Students on ECP whether it is 100% effective		
Yes	113	35.0
No	88	27.2
Don't know	122	37.8
ECP terminates pregnancy, if a woman is pregnant		
Yes	88	27.2
No	96	29.7
Don't know	139	43.0
Does it need medical prescription to buy ECP?		
Yes	43	13.3
No	169	53.3
Don't know	111	34.4
ECP are more effective when taken immediately		
Yes	142	44.0
No	35	10.8
Don't know	146	45.2
Does ECP provide protection from STIs?		
Yes	58	18.0
No	143	44.3
Don't know	122	37.8
Recommended time to take ECP		
Within 24 hour after sex	36	11.1
Within 48 hour after sex	5	1.5
Within 72 hour after sex	175	54.2
Don't know	107	33.1
Recommended dose for ECP		
One dose	172	53.3
Two dose	54	16.7
Three dose	19	5.9
Four dose	14	4.3
Don't know	64	19.8
Recommended time between dose of ECP		
12 hour	74	22.9
24 hour	65	20.1
Don't know	184	57.0

Abbreviations: STI, Sexually Transmitted Diseases

Use of Cmergency Contraceptive Pills (ECP) among Female Students

Table 3 shows that out of 317 (91.4%) respondents ever heard of ECP, 16 (4.6%) had ever used ECP. Out of which 10 (62.5%) had used it once, two (12.5%) had used it twice and the remaining four had used more than two times in the past six months preceding the survey. Out of 16 ECP users, 10 (62.5%) had used ECP within 30 days of the interview. Out of the total users, 5 (31.3%) were recommended by a boyfriend to use ECPs and self-use was also reported by a similar proportion of respondents.

Table 3. ***Practice of emergency contraceptive pills among Female Students***

ECP Use	No. (n=347)	Percent (%)
Ever used ECP		
Yes	16	4.6
No	131	95.4
Frequency of ECP use in past six months		
Once	11	68.8
Twice	2	12.5
Thrice	1	6.3
Four times	1	6.3
Seven times	1	6.3
Use of ECP last time		
Within 30 days	10	62.5
After 30 days	6	37.5
Who Suggest to use ECP?		
Girlfriend	2	12.5
Boyfriend	5	31.3
Health providers	1	6.3
Self	5	31.3
Others	3	18.8
Reason to use ECP		
Time of menstruation was miscalculated	5	31.3
Condom broke	1	6.3
Forgotten regular pills	1	6.3
Withdrawal failed	5	31.3
Didn't like to use condom	4	25.0
Challenges faced by respondents to get ECP		
Expensive price	3	21.4
Fear of stigma	7	50.0
Lack of knowledge	5	35.7
Types of ECP used by respondents		
Progesterone only pills	1	6.3
Combined (Estrogen + Progesterone)	2	12.5
Both combined oral contraceptive and progesterone-only pills	1	6.3
Don't know	12	75.0
Known brand name of ECP by respondents		
Yes	8	50
No	8	50
Time interval between recent sexual intercourse and ECP taken by respondents		
Within 24 hours	4	25.0
Within 48 hours	1	6.3
Within 72 hours	9	56.3
Don't know	2	12.5
Doses of ECP taken by the respondents		
Single dose	10	62.2

ECP Use	No. (n=347)	Percent (%)
Double dose	2	12.5
Triple dose	2	12.5
Don't know	2	12.5
Time interval between consecutive ECP taken by respondents		
12 hour apart	5	2.4
24 hour part	2	3.3
Don't know	9	2.9

Equal percentage (n=5, or 31.3%) of respondents reported miscalculation of menstruation and withdrawal failure as the reason for using ECP. Seven (46.7%) respondents suffered through fear of stigma for getting ECPs and five (33.3%) others faced challenges as lack of knowledge. Most of the respondents (n=12, or 75.0%) did not know about the types of ECPs they used and two respondents (12.5%) had used combined estrogen and progesterone pills. The mean and median of ECP use were 6.5 months and 3 months respectively.

Association between Socio-demographic Variables and Use of Emergency Contraceptives Pills

Table 4 presents data on the association between socio-demographic variables and use of ECP. A Chi-square test was performed to access the association between socio-demographic factors with the practice of ECPs.

Table 4. ***Association between socio-demographic variables and use of ECP***

Socio-demographic Characteristics	Use of ECP		P-value
	Yes n=16(4.6%)	No n=331(95.4%)	
1.Age group			
15-19 years	1(1.5%)	66(98.5%)	
20-24 years	8(3.3%)	238(96.7%)	**<0.001**
25 years and above	7(20.6%)	27(79.4%)	
2.Marital status			
Unmarried	8(2.6%)	304(97.4%)	
Married	8(22.9%)	27(77.1%)	**<0.001**
3.Religion			
Hindu	14(4.8%)	278(95.2%)	
Non Hindu	2(2.4%)	53(96.4%)	**0.707**
4.Ethnicity			
Janajati/Dalit	7(5.0%)	134(95.0%)	**0.795**
Brahmin/Chhetri	9(4.4%)	197(95.6%)	
5.Place of residence			
Urban	3(7.0%)	40(93.0%)	**0.429**
Rural	13(4.3%)	291(95.7%)	
6.Using Contraceptives			
Yes	9(42.9%)	12(57.1%)	**<0.001**
No	7(2.1%)	319(97.9%)	
7. Residence			
Own house	5(2.9%)	166(97.1%)	
Rent or apartment	11(0.5%)	165(93.8%)	**0.140**
8.Discussion with partner			
Yes	8(61.5%)	5(38.5%)	**0.431**
No	6(46.2%)	7(53.8%)	
9.Satisfaction with ECP			
Yes	9(100%)	0(0%)	**0.086**

Socio-demographic Characteristics	Use of ECP		P-value
	Yes n=16(4.6%)	**No** n=331(95.4%)	
No	5(71.4%)	2(28.6%)	
10.Knowledge having ECP used within 72 hours			
Yes	12(6.9%)	163(93.1%)	**0.044**
No	4(2.3%)	168(97.7%)	
11.Perception on Effects			
Yes	13(5.9%)	208(94.1%)	**0.135**
No	3(2.4%)	123997.6%)	
Education Stream			
Humanities/Commerce	6(3.4%)	169(96.6%)	**0.289**
Science/Education	10(5.8%)	162(94.2%)	
12.Types of college			
Government	6(3.4%)	172(96.6%)	**0.258**
Private	10(5.9%)	159(94.1%)	

No statistically significant association was observed between the use of ECP and socio-demographic factor like religion, ethnicity, place of residence (rural/urban), residence (own house/apartment), types of college, discussion with a partner, satisfaction with ECPs and perception on effects of ECP. However, socio-demographic factors like age group (P=<0.001), marital status (P=<0.001), use of contraceptives (P=<0.001) and knowledge having ECP use within 72 hours (P=0.044) were found to be significantly associated with the respondents' use of ECPs.

Discussion

Each year about 250 million pregnancies occur globally, one-third of them are unintended or unplanned, and 22% of them undergo induced abortion (Adhikari, 2009). Knowledge of emergency contraception is crucial since women must know they can prevent pregnancy after intercourse in order to seek out treatment. As rates of unwanted pregnancy vary in different countries and population groups, the need for emergency contraception in critical worldwide.

The results of this study showed that nine out of ten (91.4%) Bachelor's level female students had ever heard about emergency contraceptives in their lives. The finding is similar to the study done in Mekelle of Northern Ethiopia which showed about 90.7% of the respondents had heard about emergency contraceptives (Abrha, et al., 2014). Another study that looked at factors affecting awareness of emergency contraception among college students in Kathmandu, Nepal shows 68% had heard about emergency contraceptives (Adhikari, 2009). This difference could be due to the effect of time-dependent factors such as media expansion and access to different reproductive health services.

The main sources of information about ECP were reported as radio or television (72%), internet (65.5%) and newspaper (41.6%). The mass media as a source of information was higher compared to a study conducted in Seto Semero High School, Jimma Town, South West Ethiopia which showed that major source of information was television and radio (35.6%), followed by a health professional (25.2%) and friends (15.7%) (Tesfa, et al., 2015). The possible reasons may be due to higher access to mass media in the campuses as in this study shows higher exposure of female students to media. In the present study, the proportion of

participants who correctly knew the recommended time (within 72 hours) for emergency contraception was 54.2%, similar to the study findings conducted in West Ethiopia (49.3%) (Likisa, et al., 2013). Meanwhile, nearly half (45.2%) of them didn't know that ECPs could be more effective when taken immediately, and 18% had a misconception that ECP provides protection against STIs.

The prevalence of ECP use was found to be very low. Only 4.6% had ever used ECPs. This is low when compared to a study conducted in Nigeria which shows the prevalence of ECP use 21.7% (Wright, Fabamwo, & Akinola, 2014). Another study conducted in Nairobi of Kenya and Lagos of Nigeria shows 18% of the women interviewed in Nairobi and 17% in Lagos had ever used emergency contraceptive pills (Chin-Quee, L'Engle, Otterness, Mercer, & Chen, 2014).

The difference in study findings might be due to the study conducted in the non-residential area of Nigeria. In contrast, the prevalence of use of ECP in the current study is similar with the studies conducted in female college students in Addis Ababa, Ethiopia (10%) (Nibabe & Mgutshini, 2014). Out of total users, 62.5% had used once, 2 (12.5%) had used twice and the remaining had used more than two times in the past six months. Nearly one third (31.3%) were recommended to use ECPs by boyfriend and a similar proportion decided its use themselves. An equal percentage of respondents reported miscalculation of the onset of menstruation and withdrawal failure as the reasons behind using ECP (31.3%). Nearly half (46.7%) of the respondents reported fear of stigma in buying ECPs. Three-quarters (75 %) of the respondents did not know about the types of ECPs they used. The mean and median time of ECP use was reported 6.5 months and 3 months respectively.

Conclusion

Emergency contraceptives is the only option for preventing unwanted pregnancy after unprotected sexual intercourse. This study shows a small percentage of ECP users among Bachelors's level female students of a campus in Kathmandu valley. However, the majority of respondents in this study had heard about ECPs and had its knowledge. The present study has also documented that use of emergency contraception is affected by a range of personal characteristics including age and marital status, and knowledge of ECP use within 72 hours after intercourse.

Acknowledgments

I would like to express special thanks to Professor Bhimsen Devkota for his support from designing the study to the development of tools, data analysis and writing the manuscript. I would like to express my sincere gratitude to all the research participants and the campus authorities for their support in data collection, without their support this study would not have been possible.

Disclosure

The authors report no conflicts of interest in this work.

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