

## Knowledge and attitude towards emergency contraceptive among undergraduate students of Kathmandu metropolitan, Nepal

Laxmi Gautam<sup>1</sup>, Aditya Kumar Karna<sup>2\*</sup>, Aastha Maharjan<sup>1</sup>, Krishna Khatri<sup>1</sup>, Sudip Sharma<sup>3</sup>

<sup>1</sup>Manmohan Memorial Institute of Health Sciences

<sup>2</sup>B.P. Koirala Institute of Health Sciences

<sup>3</sup>Kathmandu University School of Medical Sciences

\*Corresponding author: Aditya Kumar Karna, [adityakarna2023@bpkihs.edu.np](mailto:adityakarna2023@bpkihs.edu.np)

### ABSTRACT

**Background:** Emergency Contraception is the only method women can use to prevent pregnancy after they have had unprotected sexual intercourse, have experienced a contraceptive failure, have remembered too late that they have forgotten to take their birth control pills, or have been forced to have sex against their will. Unintended pregnancy poses a major challenge to the reproductive health of young adults both in developed and developing nations.

**Objectives:** The primary objective of this study was to assess the knowledge and attitude of undergraduate students of Kathmandu Metropolitan City towards Emergency Contraceptive.

**Methods:** An analytical cross-sectional study was conducted in which self-administered questionnaire was used. A total of 370 sample size was drawn and multi-step sampling technique was used. Quantitative research method was applied, and the data was entered and analysed using SPSS v.16 (SPSS Inc., Chicago, Ill., USA).

**Results:** Of the total 370 participants, 42.2% were over the age of 20 years, female participants (54.3%) were slightly more than male participants (45.7%). More than half (54.1%) of the participants had adequate knowledge regarding Emergency Contraception. Age was found to be significantly associated with knowledge of the students (AOR=4.71, 95% CI: 2.02-10.95). 32.11% and they had a positive attitude towards Emergency Contraceptive. Janjati ethnicity compared to Brahmin/Chhetri (AOR=3.049, 95% CI:1.716-5.419), and BBS/BBA study program (AOR=1.962, 95% CI: 1.168-3.297) were found to be significantly associated with the attitude of the participants regarding Emergency Contraceptive. 47% of the participants responded that they will use Emergency Contraception in the future and 52% responded that they will recommend it in future.

**Conclusion:** This study has shown that there is inadequate knowledge and negative attitude of participants towards Emergency Contraception. This study highlights the necessity of awareness campaigns regarding emergency contraception to all faculties and levels of students.

**Keywords:** Attitude, Emergency Contraceptive, Kathmandu, Knowledge, Students, Undergraduate

## **1. Introduction**

Emergency contraception (EC) refers to methods of contraception that can be used to prevent pregnancy after sexual intercourse [1]. It is the only method women can use to prevent pregnancy after they have had unprotected sexual intercourse, have experienced a contraceptive failure, have remembered too late that they have forgotten to take their birth control pills, or have been forced to have sex against their will [2]. Unintended pregnancy poses a major challenge to the reproductive health of young adults in both the developed and developing nations [3]. Many students still practice risky, contraceptive behaviors by engaging in unprotected sexual acts leading to unintended pregnancies [4].

Studies consistently show that increased access to Emergency Contraception does not lead to more unprotected intercourse but rather encourages ongoing contraceptive use [5]. However, concerns about potential misuse, even among medical shopkeepers, have arisen due to widespread EC availability. Understanding EC's side effects and benefits is essential for students' reproductive health [1]. Existing policy lacks comprehensive implementation guidelines for EC distribution, necessitating integration

into the National Health Program policy to ensure better regulation. According to Nepal Demographic and Health Survey 2016, knowledge about emergency contraception is relatively inadequate, with only 36% of women and 55% of men having heard of emergency contraception [6]. In Asia, the proportion of women who had heard of emergency contraception ranged from 3% (Timor-Leste) to 29% (Maldives), and usage rates among ever sexually active women ranged from 0.1% (Cambodia, Nepal and Timor-Leste) to 0.9% (Pakistan) [7].

Proper EC knowledge can aid in reducing morbidity, mortality, and addressing menstrual-health related issues. Therefore, this study aimed to explore the knowledge level and attitude regarding EC so that it may help to formulate policy and plan further for the better regulations and implementation of policies and guidelines regarding Emergency Contraception.

## **2. Methods**

### **2.1 Study Area**

The study was conducted in Kathmandu Metropolitan, focusing on management colleges affiliated with Tribhuvan University and Pokhara University.

## 2.2 Study Design

The research methodology employed in this study involved quantitative, analytical cross-sectional, to assess knowledge and attitude towards Emergency Contraceptives including both Emergency Contraceptive Pills (ECP) and Intrauterine Contraceptive Devices (IUCD) among undergraduate students.

## 2.3 Sample size and sampling

The study population comprised 370 undergraduate students calculated by using one proportion sampling formula:

$$n = \frac{Z^2 p(1-p)}{d^2},$$

Where:

n= number of sample size,

Z= level of significance

p= probability of success = prevalence of knowledge on EC

d= allowable error

with Z at 95% CI is 1.96, prevalence of adequate knowledge was 66% and 5% of marginal error in different faculties (BBS, BBA, BHM, BBM, BIM) and level (first, second, third and fourth year) [2]. Multi-step sampling process was used, Kathmandu metropolitan was selected purposively,

simple random sampling (lottery method) was done for college selection and proportionate random sampling was used for determining number of students from each program and level, and sample unit was selected by lottery method among present students. Inclusion criteria encompassed undergraduate students in private management colleges, while exclusion criteria considered non-consenting, absent, or otherwise uncooperative students.

## 2.4 Data Collection

Data collection took place over 10 months from August 2021 to May 2022, with data entry, editing, coding, classification, and analysis also occurring during this period. Self-administered questionnaires were used to collect the data, the questions were adapted from relevant studies conducted in the past (8–10). Pre-testing was done in a similar setting among 40 students (10% of the total sample size), and these students were not included in the study as participants. The questionnaire was validated and made reliable through guidance from the study supervisor, Manmohan Memorial Institute of Health Sciences (MMIHS) Public Health faculty, and a thorough review of the literature. Cronbach's alpha was measured for internal consistency of Likert's scale in pre-

tested data which was found to be greater than 0.75.

## **2.5 Data Analysis**

Data management included editing, coding, classification, and manual data entry into SPSS-16 (SPSS Inc., Chicago, Ill., USA) and Microsoft Excel. Data analysis comprised univariate and bivariate analyses, with various statistical parameters calculated for each variable. Chi Square test was used for the analysis of categorical variables with significance at  $p\text{-value} < 0.05$ . Results were presented in tables as below. The research findings were disseminated through college presentations, thesis report and submission to the faculty of public health of MMIHS and IRC.

## **2.6 Ethical Clearance**

Ethical approval was taken from Institutional Review Committee (IRC) of MMIHS (Registration number: MMIHS-IRC 614). Consent was taken from the participating colleges and their administration for data collection. Ethical consideration was in accordance with Helsinki Declaration, including obtaining consent, ensuring confidentiality, and maintaining transparency throughout the research process.

## **3. Results**

### **3.1 Socio-demographic characteristics of respondents**

The responses of participants based on their socio-demographic characteristic are presented in Table 1. The mean age of the participants was 20 years with a standard deviation of 1.76. and 42.2% were over the mean age. 54.3 % of the participants were female and more than half of the participants belonged to Brahmin/Chhetri ethnic group (57.5%). Three-fourth of the respondents (25.9%) had family size of five or less. Nearly two-third of the respondents were from BBS/BBA (Bachelor of Business Studies/ Bachelor of Business Administration) faculties (63.2%) and more than half of them were studying in the first year (54.80%). Less than one third (28.7%) of fathers and nearly half (47.5%) of mothers of respondents had completed grade 8 while the rest of them had studied above class 8. More than three-fourth of the respondent's family were above poverty line (77.8%). More than one-fourth (27%) of respondent's father and 65.8% of respondent's mother had agriculture and homemaking as their major occupation, respectively.

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

Characteristics	Number (n)	Percentage (%)
<b>Age group (n= 275)</b>		
≤20 year	159	57.80
>20 year	116	42.20
Mean ±SD	20±1.76	
<b>Gender (n=370)</b>		
Male	169	45.70
Female	201	54.30
<b>Ethnicity (n=362)</b>		
Brahmin/Chhetri	208	57.50
Terai caste/ Dalit/Muslim	28	7.70
Janjati	96	26.50
Other	30	8.30
<b>Number of members in family (n=333)</b>		
≤5	250	75.10
>5	83	25.90
<b>Faculty of study (n=370)</b>		
BBS/BBA	234	63.20
BHM/BBM/Others	136	36.80
<b>Level of Study (n=365)</b>		
1 <sup>st</sup> year	200	54.80
2 <sup>nd</sup> year	76	20.80
3 <sup>rd</sup> year	79	21.60
4 <sup>th</sup> year	10	2.70
<b>Education of father (n=355)</b>		
Up to basic Level	102	28.70
Above basic Level	253	71.30
<b>Education of mother (n=320)</b>		
Up to basic Level	152	47.50
Above basic level	168	52.50
<b>Socio-income (n= 352)</b>		
Below poverty	78	22.20
Above poverty	274	77.80
<b>Occupation of father (n=355)</b>		
Agriculture/homemaker	96	27.00
Service/foreign employment/business	259	73.00
<b>Occupation of mother (n=325)</b>		
Agriculture/homemaker	214	65.80
Service/foreign employment/business	111	34.20

### 3.2 Respondents level of Knowledge on Emergency Contraceptives

The mean knowledge score on Emergency Contraceptives was 14 with a standard deviation of 7.69, minimum score of 0 and

maximum score of 34. Among total 370 participants, 54.10% of respondents had adequate knowledge on emergency contraceptives, as shown in Table 2.

**Table 2: Respondents level of Knowledge on Emergency Contraceptives**

Level of Knowledge	Number (n=370)	Percentage (%)
Adequate (≥14)	200	54.10
Inadequate (<14)	170	45.90
Mean±SD (Min:Max)	14±7.69(0:34)	

### 3.3 Characteristics related to knowledge of respondents regarding Emergency Contraceptives

Table 3 shows the characteristics related to knowledge of respondents regarding EC. Out of 361 respondents, who responded to questions about their knowledge on EC, about 83.93% participants responded that they had knowledge on EC. Most of the respondents (85.12%) had studied about emergency contraceptives in school/college. More than half of the participants got information of EC from Internet (58.2%). When respondents were asked about reasons of using EC, more than three-fourth (80.2%) responded said "to prevent unwanted pregnancy". When asked about when to use EC, A nearly three-fourth of respondents (74.4%) responded "after unprotected sex". 43.2% of respondents did not know about effects of EC on menstrual cycle. More than half of the respondents knew about the side-effects of EC (55.39%). Among those who knew the side effects, 65.5% identified irregular menstrual cycle. When asked about barriers to use EC, 22.40% responded that

they did not know how to use, 20.6% responded that it was not accepted by their sexual partner.

Out of 360 respondents, most of the respondents (86.38%) said that they had heard about ECP. When asked about different brands of ECP, they had heard about I- Pills (71.4%). Among those who had heard about different types of messages, 62.5% said they had heard the message that ECP can be used after unprotected sex. About 22.33% of participants thought prescription was needed to buy ECP. When asked about time period to use ECP, 69.8% of respondents answered that ECP was to be used within 72 hours of unprotected sex. Regarding the contraindication of ECP, only 10.59% of respondents answered that any women can use ECP. Out of 334 respondents, only about one-fourth of the respondents (27.84%) knew about IUCD. When asked about when IUCD could be used, only 10.99% responded that it could be used within 5 days of unprotected sex and 75.82% did not know when to use IUCD as EC.

Table 3: Characteristics related to knowledge of respondents regarding Emergency Contraceptives

Characteristics	Number (n=362)	Percentage (%)
<b>Heard about EC (n=361)</b>		
Yes	303	83.93
No	58	16.07
<b>Source of Information* (n=309)</b>		
Radio	77	23.30

Characteristics	Number (n=362)	Percentage (%)
TV	174	52.70
Newspaper	133	40.30
Poster	39	11.80
Health-workers	76	23.00
Internet	192	58.20
Boyfriend/girlfriend	120	36.00
<b>Reasons of EC use*</b>		
Prevent unwanted pregnancy	287	80.20
Prevent STI	170	47.50
Delay Menstrual cycle	27	7.50
Treat Reproductive disease	28	7.80
Don't Know	47	13.10
<b>When EC is Used*</b>		
After unprotected sex	256	74.40
After rape/force sex	95	27.80
If condom is broken	102	29.70
Don't know	70	20.30
<b>Know side effect (n=334)</b>		
Yes	185	55.39
No	149	44.61
<b>Side effects of EC* (n=185)</b>		
Failure rate	48	28.60
Nausea	64	38.10
Vomiting	72	42.90
Dizziness	66	39.30
Infertility	72	42.90
Irregular menstrual cycle	110	65.50
Problem with uterus	64	38.10
Abdomen pain	70	41.70
<b>Barriers of using EC*</b>		
Expensive	33	9.40
Not accepted by partner	70	20.60
Don't know how to use	76	22.40
Don't know where to get	27	7.90
No barriers	38	11.20
Don't know	160	47.10
<b>Heard about ECP (n=360)</b>		
Yes	311	86.38
No	49	13.62
<b>Brands of ECP*</b>		
Econ	101	32.80
I-pill	220	71.40
Unwanted 72	39	12.70
E-72	31	10.10
Don't Know	67	21.80
<b>Prescription to buy ECP (n=309)</b>		
Yes	69	22.33
No	170	55.01
Don't Know	70	22.66
<b>When is ECP used (n=308)</b>		
Within 72 hours of unprotected sex	215	69.80
Within 120 hours of unprotected sex	1	0.30
Within a week of unprotected sex	3	1.00
Within a month of unprotected sex	1	0.30



Characteristics	Number (n=362)	Percentage (%)
Don't know	88	28.60
<b>Contraindication of ECP (n=85)</b>		
Obese	4	4.71
Chronic disease	15	17.64
Menstrual disease	24	28.23
Any women can use	9	10.59
Don't Know	33	38.82
<b>Heard about IUCD (n=334)</b>		
Yes	93	27.84
No	241	72.16
<b>When can be IUCD used (n=91)</b>		
Within 5 days of unprotected sex	10	10.99
Within a week of unprotected sex	7	7.70
Within a month of unprotected sex	5	5.41
Don't Know	69	75.82

\*Multiple choice question

### 3.4 Respondent's Attitude towards Emergency Contraception

The five scales of Likert Scale were categorized into positive and negative attitude from the obtained mean score. The respective scores for the categories “strongly agree,” “agree,” “neutral”, “disagree,” and “strongly disagree,” were 4, 3, 2, 1, and 0. The mean score was  $8 \pm 3.97$ , the minimum and maximum attitude score were 0 and 20

respectively. The cut-off score for positive and negative attitude was taken from the mean, those participants scoring more or equal to 8 will be considered to have positive attitude and those scoring below 8 will have a negative attitude towards EC. Table 4 shows that nearly one-third (32.11%) of the respondents had positive attitude towards Emergency Contraception.

Table 4: Respondent's Attitude towards Emergency Contraception

Factor	Number (n)	Percentage (%)
<b>Attitude (n=299)</b>		
Positive Attitude ( $\geq 8$ )	96	32.11
Negative Attitude ( $< 8$ )	203	67.89
Mean $\pm$ SD	$8 \pm 3.968$	

### 3.5 Multivariable analysis of the socio-demographic characteristics and knowledge on EC

Participants aged more than 20 years were found to have nearly five times more knowledge regarding Emergency

Contraceptives compared to those below twenty years of age (COR= 2.914, 95% CI:1.775-4.840, AOR = 4.71, 95% CI 2.02-10.95). Number of family members, study program, education of mother was found to have no significant association with



Knowledge regarding EC under  
multivariable analysis (Table 5)

Table 5: Multivariable analysis of the socio-demographic characteristics and knowledge on EC

Factors	Knowledge on EC		COR (95% CI)	AOR (95% CI)	P-value
	Adequate n (%)	Inadequate n (%)			
<b>Age (n=275)</b>					<0.001 <sup>c</sup>
≤20	72 (45.3)	87 (54.7)	1	1	
>20	82 (70.7)	34 (29.3)	2.914 (1.775-4.840)	4.71 (2.02-10.95)	
<b>Number of family members (n=333)</b>					0.022 <sup>c</sup>
>5	39 (47.4)	44 (53.0)	1	1	
≤5	151 (60.4)	99 (39.6)	1.721 (1.044-2.837)	1.423 (0.591-2.795)	
<b>Study Program (n=370)</b>					0.001 <sup>c</sup>
BBS/BBA	111 (47.4)	123 (52.6)	1	1	
BHM/BBM/Others	89 (65.4)	47 (34.6)	2.098 (1.356-3.247)	1.599 (0.591-2.795)	
<b>Education of Mother (n=320)</b>					0.007 <sup>c</sup>
Up to basic level	72 (47.4)	80 (52.6)	1	1	
Above basic level	105 (62.5)	63 (37.5)	1.852 (1.186-2.893)	1.285 (0.591-2.795)	

\*n= number, c= significant under chi-square test, COR= Crude Odds Ratio, AOR=Adjusted Odds Ratio

### 3.6 Multivariable analysis of the socio-demographic characteristics and attitude towards EC

Among the participants, those belonging to Janjati ethnicity were found to have significant association with attitude towards EC and were three times more likely to have positive attitude towards them when compared to other ethnic castes under

multivariate analysis (COR=3.421 at 95% CI:1.946-6.013, AOR=3.049 at 95% CI:1.716-5.419). Participants studying in BBS/BBA program were found to have nearly two times more positive attitude towards Emergency Contraceptives when compared to participants studying in BBM/BHM and other faculties. (COR=2.346, 95% CI:1.429-3.853, AOR=1.962, 95% CI:1.168-3.297) (Table 6).

Table 6: Multivariable analysis of the socio-demographic characteristics and attitude towards EC

Factors	Attitude on EC		COR at 95% CI	AOR at 95% CI	P-value
	Positive	Negative			
	n (%)	n (%)			
<b>Ethnicity (n=294)</b>					<.001 <sup>c</sup>
Brahmin/Chhetri	41 (23.9)	130 (76.0)	1	1	
Terai/Muslim/Dalit	4 (19.0)	17 (81.0)	0.746 (0.238-2.343)	0.746 (0.244-2.457)	

Factors	Attitude on EC		COR at 95% CI	AOR at 95% CI	P-value
	Positive	Negative			
	n (%)	n (%)			
Janjati	41 (51.9)	38 (48.1)	3.421 (1.946-6.013)	3.049 (1.716-5.419)	0.001 <sup>c</sup>
Other	9 (39.1)	14 (60.9)	2.038 (0.822-5.054)	1.962 (0.752-4.747)	
Study Program (n=288)					
BHM/BBM/Others	52 (43.3)	68 (56.7)	1	1	
BBS/BBA	44 (24.6)	135 (75.4)	2.346 (1.429-3.853)	1.962 (1.168-3.297)	

\*n= number, c= significant under chi-square test, COR= Crude Odds Ratio, AOR=Adjusted Odds Ratio

## 4. DISCUSSION

Majority of the study participants were above 20 years of age and their mean age was  $20 \pm 1.76$  years. More than half (54.10%) of respondents had adequate knowledge about EC which is less than the study conducted by Adhikari, 2009 where knowledge was found to be 68% [2]. This may be because the study participants in Adhikari's study were students of Intermediate, undergraduate and post graduate levels of different faculties including science and management who may be more familiar with the topic and have better knowledge about it [2].

Most of the respondents (80.2%) said that EC is used after unprotected sex whereas the study conducted by Mamata Pradhan, et.al in 2020 showed that more than half (57.9%) respondents answered that emergency contraception is used in case of unavailability of other methods [8]. This may be because of

the different nature of the individual for EC use.

More than half of the participants (55.01%) responded that a medical prescription is not needed for buying EC which is similar to the study on Knowledge and use of EC by BD Jha, where 52% participants responded that ECPs could be bought without medical prescription [9]. This may be due to the fact that the practice of buying and selling medicines without prescription is common in Nepal in the absence of strict laws and their implementation.

More than two-third (69.80%) of respondents answered that EC is used within 72 hours of unprotected sex which is higher compared to the study on Knowledge and use of EC by BD Jha where 54% students reported that the recommended time to take emergency contraceptives is within 72 hours of unprotected sexual intercourse [9]. This may

be due to the circulation of information on EC among the college- going students through internet and messages from governments.

More than half of the respondents (55.39%) knew about the side effect of ECP which is low when compared to the study conducted by Mamata Pradhan, et.al in 2020 where maximum (86.2%) of the respondents knew about the side-effects of emergency contraception [8]. Around two third (65.60%) of the student mentioned irregularity in menstrual cycle as the most common side effect of EC whereas the study in by Pradhan mentioned dizziness as the most common side-effect (48%). This may be because the study conducted in by Pradhan et.al included students studying in science and health background so they may be well known to these terminologies, whereas our study was exclusively conducted among students of non-health background.

Majority of the respondents (90.30%) mentioned Pharmacy as source of buying EC which contradicts the study conducted in Godawari Municipality in by Mamata Pradhan, et.al 2020 where more than half (60.6%) of the respondents mentioned health-post as source of getting emergency contraception [8]. This may be because our study was conducted in Kathmandu

metropolitan where pharmacies are more commonly available and utilized than health posts or hospitals and pharmacies ensure better confidentiality. The compared study conducted in Godawari municipality is a semi-urban area, hence, health posts might be more commonly utilized than pharmacies in that area. Non-acceptance of EC use by partner was one of the major barriers for EC use. A total of 20.6 % respondents reported non-acceptance of EC use by partner which is lower than a study conducted by Mukherjee et.al in in 2023 where 30.1% of participants responded non-agreement of husband towards IUCD use in India [10]. This maybe because in Nepal EC use is influenced by a cultural stigma, lack of awareness among partners regarding family planning, religious beliefs, gender dynamics, and social judgment towards the women for EC use. When asked why they utilized emergency contraception, respondents revealed that 28.6% of participants were unsure of the precise window of time following unprotected sexual activity during which an ECP might be administered.

The most probable reasons for not knowing this time period in Nepal may be because of inadequate sex education, cultural taboos

inhibiting open discussion about contraception, and low health literacy.

Students over the age of 20 had higher knowledge on EC which contradicts the study conducted by Adhikari, where higher proportion of younger students aged 15 to 19 years [2]. This may be because the knowledge on sexual and reproductive health is expected to increase with increase in age.

Out of total respondents in this study, 45.9% had inadequate knowledge on Emergency Contraceptive which is less than the study conducted by Mamata Pradhan, et.al 2020 where 77% of the respondents had inadequate knowledge regarding emergency contraception [8]. This may be because our study was conducted among undergraduate students and the compared study is conducted in school and intermediate level students.

About one-third of the respondents (32.11%) had a positive attitude towards Emergency contraceptive which is lower than the study conducted in Ethiopia where about 53% of the students had positive attitude towards emergency contraceptives [11]. Similarly, a study conducted in India among the medical students of different level showed overall positive attitude towards EC among 74% of the respondents [12]. This may be because the participants in our study belonged to non-

health background but in Indian study, the participants were medical students of undergraduate and post graduate levels.

## **5. CONCLUSION**

This analytical cross-sectional study on the knowledge and attitude towards Emergency Contraception (EC) among undergraduate students has shed light on critical aspects of sexual health awareness among this demographic.

Many surveyed students lack awareness on emergency contraception, particularly regarding intrauterine devices. Knowledge gaps are linked to factors like age and education. Attitudes toward EC are generally negative, influenced by ethnicity and faculty of study. Despite barriers, most students expressed willingness to use and recommend EC in the future.

Considering these findings, it is imperative to develop targeted interventions aimed at improving knowledge and changing attitudes towards EC among undergraduate students, especially among non-health background including the management faculty where inadequacy and negativity were most pronounced. Comprehensive sexual health education programs, including information on EC, should be integrated into the

curriculum to bridge the knowledge gap. Additionally, raising awareness among students about the proper use of EC and addressing misconceptions is essential.

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