

Factors affecting use of emergency contraception among college students in Kathmandu, Nepal

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Abstract:

Background: Adolescent and youth sexual behavior has been recognized as an important health, social and demographic concern in the developing world. Unwanted pregnancy poses a big problem among young adults in developing countries. Emergency contraceptive plays vital role in reducing maternal mortality substantially and improves maternal health by avoiding unwanted pregnancy and unsafe abortion. The main objective of the study was to assess factors affecting use of emergency contraception among college students of Kathmandu.

Materials and Methods: This study is a cross sectional study conducted among 476 college students of Kathmandu, Nepal. Structured self-administered questionnaires were used. Univariate, bivariate (Chi square test) and multivariate analysis were applied for assessing association between dependent and independent variables.

Results: In this study, among the respondents who had heard about emergency contraceptive, 57.2% of the respondents were found to have used emergency contraceptive pills. Variables such as place of residence (AOR=0.076, $p < 0.001$), level of study (AOR=0.027, $p < 0.001$), communication about RH matter with family (AOR=7.975, $p = 0.002$) and Knowledge on ECPs (AOR=0.021, $p < 0.001$) were found to be the factors that affected the use of emergency contraception among college students.

Conclusion: Unintended pregnancy and unsafe abortion pose a major reproductive health challenge. Hence identification of the predictors that affect its use is effective in preventing unplanned pregnancy.

Key Words: Emergency contraception, emergency contraceptive pills, unintended pregnancy, college students

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I. Introduction

Unintended pregnancy and unsafe abortion pose a major reproductive health challenge to adolescents. Emergency contraception is safe and effective in preventing unplanned pregnancy¹ Emergency contraception (EC) is contraception administered after unprotected intercourse. EC is the only method women can use to prevent pregnancy after they have had unprotected sexual intercourse³. In developing world, about 56 % of all abortions are unsafe compared to the developed world (6 %) and nearly all unsafe abortions (98 %) occur in developing countries.² Unsafe abortion is one of the greatest health risks that young women can face in Nepal. The primary reason for induced abortion is unwanted pregnancy. The maternal mortality ratio in Nepal is among the highest in South Asia, at 239 deaths per 100000 live births.⁵ Awareness of the EC is low among college students in Nepal. Health education initiatives should target students as they are more likely to be sexually active. There is a need to further educate students about EC which can help to reduce unintended pregnancies, many of which result in unsafe abortion and take a large toll on women's health.³ The current study aims to assess the factors affecting use of emergency contraception among the college students in Kathmandu, Nepal.

II. Materials and Methods

This cross-sectional study was carried out among both married and unmarried students studying in undergraduate and postgraduate colleges of selected wards of Kathmandu district from September 2018 to February 2019. A total 476 college students (both male and female) were taken for this study.

Study Design: Cross-sectional Study

Study Location: Kathmandu, Nepal

Study Duration: September 2018 to February 2019

Sample size: 476 college students

Sample size calculation: The sample size was calculated using the formula $N = Z^2 pq/d^2$, with 8% allowable error and 10% non-response rate and the prevalence was taken from a study conducted in southern Ethiopia¹⁰.

Inclusion Criteria

1. Students who were willing to participate in the study

Exclusion Criteria

1. Those who did not give consent to participate
2. Students other than Bachelor and Master level

Methodology

The purpose of study and procedure was explained and informed written consent was taken from the college authority and from each participant respectively. And The participants were informed that the participation was voluntary. Information about the respondents’ response in this study was kept private and confidential through proper sitting arrangement while collecting data so that no one was able to see each other’s responses.

In every respondent’s pretested structured self-administered questionnaire was used. Questionnaire had four sections socio- demographic and family characteristics, Knowledge on Emergency Contraception, Attitude towards EC and Practice of EC.

Statistical analysis

The descriptive data were presented in Mean, Median, Percentage and standard deviation. Data were summarized using frequency distribution tables and graphical methods of presentation of data. Chi-square test was used to identify the association between two categorical variables i.e. dependent and independent variables. Binary logistic regression was performed between the outcome and explanatory variables to estimate adjusted odds ratio (AOR) with 95% Confidence intervals (CI). Explanatory variables significant in bivariate analysis at the level of significance ≤ 0.2 were taken for multivariate analysis.

III. Results

A total of twelve colleges of Kathmandu were selected to enroll 476 students to assess the factors affecting use of emergency contraception among college students. The participants were the students of bachelor and master’s level. 80.3% belonged to bachelors while 19.7% were from master’s level.

The socio-demographic, family background, personal habits, knowledge, attitude and practice of use of emergency contraceptive were described to show background characteristics of the respondents.

Table number 1 shows the socio-demographic characteristics of respondents among which, 45.2% were male while 54.8% were female students. The mean age of the respondents was 23.4 years with standard deviation of 0.489 years. Most of them 83% were unmarried and only 17% were married. Regarding the education level, 19.7% were master’s level students and the rest 80.3% were bachelor’s level students. More than half 65.8% of the respondents’ permanent residence was outside the valley while remaining 34.2% of the respondents were regarded as local indicating permanent residence of Kathmandu. Regarding living arrangement, most of the respondents 47.2% were staying with their friends or in a hostel or single followed by relatives 25%, family 16.4%, with spouse 9.5% and others as 1.9%.

Table 1: Socio demographic characteristics of college students

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	215	45.2
Female	261	54.8
Age of respondents (in years)		
20-23	289	60.7
24-28	187	39.3
Mean = 23.4 Median = 23 SD = 0.489		
Marital status of the respondents		
Unmarried	395	83
Married	81	17
Religion of the respondents		
Hindu	360	75.6
Others (Islam, Christian)	85	17.9
Buddhist	31	6.5
Caste/ Ethnicity of the respondents		
Janjati	217	45.6
	136	28.6

Brahmin/Chhetri		
Others (Vaishya, sudra)	69	14.5
Madhesi	40	8.4
Muslim	9	1.9
Dalit	5	1.1
Permanent residence of the respondents		
Outside Valley	313	65.8
Inside Valley	163	34.2
Level of education of the respondents		
Bachelor's	384	80.7
Master's	92	19.3
Living arrangement of the respondents		
Friends/single/Hostel	225	47.2
Relatives	119	25
With family	78	16.4
Spouse	45	9.5
Others	9	1.9
Total (n)	476	100

Table 2 shows that, out of total respondents more than two third of respondents did not use any types of the substance still 18.5 % of the respondents used some types of the substance. Among which alcohol intake among the respondents was higher i.e. 71.2 % followed by smoking, chewing tobacco and others.

Table 2: Personal habit of the respondents among college students

Characteristics (n=476)	Frequency (n)	Percentage (%)
Substance use by the respondents		
Yes	88	18.5
No	388	81.5
Types of substances used by the respondents* (n= 88)		
Alcohol	63	71.2
Smoking	45	51.1
Chewing tobacco	22	25
Others	23	26.1

Note: * # 100%

Table 3 shows 72.7 percent of the respondents' fathers were educated at the primary or secondary level of education, 14.7 percent and 6.7 percent bachelor or higher and higher secondary respectively. Only 5.9 percent respondents' fathers were illiterate. Similarly, only 9.9 percent of respondents' mothers had a higher secondary level of education.

It was reported that the majority (66%) of the respondents never had communicated reproductive health related matters with parents.

Table 3: Parents education and communication of reproductive health related matter among college students

Characteristics (n=476)	Frequency (n)	Percentage (%)
Respondents' father's education level		
Illiterate	28	5.9
Primary/Secondary	346	72.7
Higher secondary	32	6.7
Bachelor or higher	70	14.7
Respondents' mother's education level		
Illiterate	38	8
Primary/Secondary	348	73.1
Higher secondary	47	9.9
Bachelor or higher	43	9
Ever communicated reproductive health matters with parents		
Yes	162	34
No	314	66
Total (n)	476	100

Table 4 denotes on knowledge of emergency contraceptive pills among college students based on various factors associated with knowledge like types of contraceptives used as EC, appropriate situation of use, time frame for effective use, number of doses required, time interval between doses, effectiveness of the drug, source to obtain emergency contraceptive pills etc.

Table 4: Knowledge on emergency contraceptive pills among college students

Knowledge on emergency contraceptive pills (n=446)	Frequency (n)	Percentage (%)
Types of contraceptives used as EC		
Pills	318	71.3
IUDs	76	17
Both	35	7.8
Don't know	17	3.9
Appropriate situation of use*		
Unprotected sex	432	90.8
Forced rape	183	34.4
Condom broken	73	15.3
Missed pills	68	14.3
Don't know	12	2.5
Time frame for effective use		
Within 12 hours	16	3.6
Within 24 hours	44	9.9
Within 48 hours	35	7.8
Within 72 hours	123	27.6
Within 4 days	52	1.6
Within 5 days	164	36.8
Don't know	12	2.7
No of doses required		
One dose	265	59.4
Two dose	42	9.4
Three dose	51	11.4
Four dose	77	17.3
Don't know	11	2.5
Time interval between doses		
12 hours apart	222	49.8
24 hours apart	212	47.5
Don't know	12	2.7
Effectiveness of the drug		
99%	308	69.1
75%	61	13.7
50%	41	9.2
30%	26	5.8
Not sure	10	2.2
Method of early abortion		
Yes	201	45.1
No	237	53.1
Don't know	8	1.8
Source to obtain emergency contraceptive pills*		
Private clinic	167	37.4
Hospital/health center	163	36.5
Pharmacy	78	17.4
Social worker/ community worker	65	14.6
Supermarket	24	5.4
Others	32	7.2
Don't know	38	8.5
ECPs prevent sexually transmitted infections		
Yes	333	74.7
No	113	25.3
ECPs be used in regular		
Yes	268	60.1
No	178	39.9
Knowledge of Emergency Contraceptive (Summary index) (n= 446)		
Good knowledge	290	65
Poor knowledge	156	35

Note: * # 100%

Table 5 indicates attitude towards emergency contraceptive pills and the summarized attitudinal index indicates that 82.5 % of the respondents who had ever heard of ECPs had a positive attitude toward ECPs.

Table 5: Attitude towards emergency contraceptive pills among college students

Attitudes towards ECPs Disagree (n=446)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree (n=446)
Do you think unwanted pregnancy Can be preventable	42.8	13	30.3	8.5	5.4
Do you think EC only target married Women	14.6	9.4	13	36.5	26.5
Do you think EC can be used any time after unprotected sex	4.5	15.5	20.9	38.1	21.1
Do you think increase accessibility of EC bring about irresponsible sexual behavior	33	33	14.6	10.5	9
Use of EC relieve stress and promote peace of min	20.4	17.3	32.5	24.2	5.6
Women will stop using other forms of contraceptives methods if EC is widely available	13	52.5	15.7	11.4	7.4
If male partner knows about EC he is Less likely to use other methods of contraceptive	27.8	39.2	13.7	10.5	8.7
Attitudes toward ECP (Summary index)					
Positive Attitude	368 (82.5%)				
Negative Attitude	78 (17.5%)				
Total n (%)	446 (100%)				

Note: the numbers are % and total row is 100%

Table 6 shows the use of emergency contraceptive pills among college students.

Table 6: Practice of emergency contraceptive pills among college students

Practice of emergency contraceptive pills (n= 446)	Frequency (n)	Percentage (%)
Ever used		
Yes	255	57.2
No	191	42.8
Frequency of Use (n=255)		
Once	85	33.3
Twice	52	20.4
Three times	24	9.4
Doesn't remember	94	36.9
Reason for use (n=255)		
Unprotected sex	150	58.8
Timing miscalculation	50	19.6
Condom broke	35	13.7
Missed pills	20	7.8
Information to use *(n=255)		
Friend	144	56.5
Web pages	125	49
Mass media	83	32.5
Sex partner	76	29.8
Health professional	24	9.4
ECPs obtained from (n=255)		
Pharmacy	130	51
Private hospital	44	17.3
Youth center	44	17.3
Public hospital	37	14.5
Challenges faced to get ECPs (n=255)		
Fear of stigma	101	39.6
Price	64	25.1
Lack of knowledge	55	21.6
Not available in pharmacy	35	13.7

Note: * # 100%

Table 7 shows the association between socio demographic characteristics and use of emergency contraceptive pills among the respondents who ever had heard about emergency contraception.

Table 7: Association between socio-demography and use of emergency contraception among college students

Characteristics	Use of emergency contraceptive (%)		Total (n)	P-value
	Yes	No		
Age				
20-23	62.5	37.5	275	0.004
24-28	48.5	51.5	171	
Marital status				0.797
Married	8.6	41.4	70	
Unmarried	56.9	43.1	376	
Place of residence				<0.001
Outside valley	50.5	49.5	301	
Inside valley	71	29	145	
Level of study				<0.001*
Bachelor	65.9	34.1	384	
Master	3.2	96.8	62	
Living arrangement				0.92
Family and others (Relative, spouse)	57.4	42.6	251	
Single/hostel/friends	56.9	43.1	195	
Total (n)			446	

Table 8 shows association between Parent education and communication with use of ECPs among college students.

Table 8: Association between Parent education and communication with use of ECPs among college students

Characteristics	Emergency contraceptive Use (%)		Total	P-Value
	Yes	No		
Father's education level				<0.001*
Illiterate	95.5	4.5	22	
Primary/Secondary	61.7	38.3	332	
Bachelor and above	31.5	68.5	92	
Mother's education level				<0.001*
Illiterate	76.3	23.7	38	
Primary/Secondary	54.8	45.2	336	
Bachelor and above	58.3	41.7	72	
Communication on reproductive health matter with family				0.05
Yes	44	56	50	
No	58.8	41.2	396	
Total (n)			446	

Note: *(Likelihood ratio)

Table 9 shows the association between knowledge and attitude with use of emergency contraception among college students.

Table 9: Association between Knowledge and attitude with use of ECPs among college students

Characteristics	Emergency contraceptive Use (%)		Total	P-Value
	Yes	No		
Knowledge on ECPs				< 0.001
Good knowledge	31.4	68.6	274	
Poor knowledge	1.7	98.3	172	
Time frame for effective use				< 0.001
<= 72 hours	91.5	8.5	212	
> 72 hours	26.1	73.9	234	
No of doses required				< 0.001
<= 2 doses	65.3	34.7	291	
> 2 doses	41.9	58.1	155	
Attitude towards ECPs				0.42
Positive Attitude	55.3	44.7	226	
Negative Attitude	59.1	40.9	220	
Total (n)			446	

Table 10 shows the final logistic regression model.

Table 10: Factors associated with use of emergency contraceptive pills among college students

Characteristics	Sig.	Exp (B)	95% CI for EXP(B)	
			Lower	Upper
Place of Residence Inside Valley (ref) Outside Valley	0.000*	1 0.076	0.029	0.2
Level of study Bachelor(ref) Master	0.000*	1 0.027	0.005	0.155
Communication about RH Matters No (ref) Yes	0.002*	1 7.975	2.183	29.141
Knowledge on ECPs Good knowledge(ref) Poor knowledge	0.000*	1 0.021	0.004	0.101
Time Frame <= 72 hours (ref) > 72 hours	0.000*	1 0.027	0.009	0.077
No. of Doses > 2 doses (ref) <= 2 doses	0.000*	1 9.649	23.807	417.1

Note: Age, fathers' education and mothers' education level were not significant. The (*) indicates significant association

IV. Discussion

This study aimed to assess the factors affecting use of emergency contraception among college students of Kathmandu. Besides, the study also aimed to find out the prevalence of use of emergency contraceptive and knowledge and attitude of emergency contraception use among college students. Knowledge and attitude on emergency contraceptive pills was taken as a proxy indicator for emergency contraceptive use. Data were collected from 476 college students from different colleges in Kathmandu district. Among total respondents, 215 were male students and the rest was female students.

Unsafe/unprotected and early relations who are highly responsible for the problems of unwanted pregnancy, childbirth and other adverse consequences which can be effectively minimized with the help of emergency contraceptive pills.¹⁷ In Nepal, due to the increased availability and easy retrieve of emergency contraceptive pills, it's used had been increasing due to which temporary family planning methods and safe abortion has decreased.¹²

About 94 percent had heard about EC. The awareness of EC among college students in Kathmandu is higher than the level found among university students Ethiopia (62.5%)⁸, India (63%)⁹ and Kenya (53.3%)¹³. Whereas alike finding to this study was found in the study of Nepal (96.3%)⁴, America (80.1%)¹⁴. This shows that the youth population had a better awareness level of ECPs. This difference could be due to the socio demographic difference of the respondents such as their respective college, and level of study. It could also be the effect of time dependent factors such as media expansion and access to different reproductive health services as well as internet facilities.

In this study, pills were the most widely known emergency contraceptive method and only few were aware about IUCD while about 4 percent did not know which particular contraceptive is used as emergency contraception. Similar findings were found in the study of Tamire W.¹⁵ Nibabe WT.¹¹ and Gebrehiwot H¹⁶ among university students.

Majority of the respondent replied unprotected sex as indication for ECPs followed by forced rape, condom broken; missed pills and 2.5 percent did not know the appropriate situation to use emergency contraceptive pills. Whereas in the study of female college students in ethiopia major indication for ECPs was raped individuals followed by condom failure, missed regular contraceptive pills, 18.7 percent after unprotected intercourse only and contrast to this study 10.8 percent did not know the indications for ECPs at all.⁷

Based on the summary index by Fasanu AO, Adekanle DA, AdenijiAO, Akindele RA,¹⁸ 65 percent fell into the range of 'good knowledge' and only 35 percent had poor knowledge of emergency contraception. The level of knowledge is higher than that conducted in Ethiopia (45%),¹⁶ Jimma University (22.8%)¹⁹ and slightly lower than the study conducted in Nepal (72.83%).⁶

A substantial proportion of college students (82.5%) had a positive attitude towards ECPs which was very much similar to the study done by Admasu A. in southwest Ethiopia (84.9%)²⁰ and higher than the study conducted by Tamire (53%)¹⁵ and Nibaba¹¹

The prevalence rate of use of emergency contraception among college students was 57.2 percent which was higher than to the study in Parbat district, Nepal (8.34%),²¹ and almost similar to the study of Northwest Ethiopia (47.1%)²² The possible reasons for high EC practice rate than other study may be due to difference in

the study setting. As Kathmandu is the capital city of Nepal Availability of ECPs is easy and is also influenced by western culture. Also People from all over the country reside here thus making the population variable.

Age of the respondents was significantly associated with the emergency contraceptive use ($P= 0.004$). Respondents who were aged 24-28 less likely to use emergency contraceptive (48.5%) compared to those respondent of age between 20-23 years (62.5%) which was a bit higher with the study of Tilahun⁸ with AOR: 2.372; CI: 2.538-20.73) but in multivariate analysis age was not found to be significantly associated. The reason behind this association could be an increase in sexual behavior and knowledge on emergency contraceptive in this age group.

The higher percentage of the respondent had ever used the emergency contraceptive were from inside Kathmandu (71%) while 50.5 percent of respondent had ever used contraceptive were from outside Kathmandu valley which was also found to be statistically significant ($P= 0.000$). Respondents outside the valley were found to use EC 0.076 times less than respondents from its counterpart. This may be due to respondents inside Kathmandu valley being exposed to the outer world more compared to outside the valley.

Education is considered an important predictor of emergency contraceptive used. Respondents who had good knowledge on emergency contraceptive pills were more likely to use EC (31.4%) compared to those respondents who had poor knowledge on ECPs (1.7%) with AOR= 0.021. The reason behind this association could be with the increased knowledge on ECPs, its availability, conditioned to use, number of doses and its effectiveness promotes the use of emergency contraceptive.

Also regarding time frame for effective use the respondents who had knowledge to use it within 72 hours or less than that were more likely to use EC (91.5%) compared to those had knowledge that it is used after 72 hours which is statistically significant with p-value <0.001 and AOR=0.027. Moreover, similar is the case with knowledge on the number of doses with p-value <0.001 and AOR=99.649.

In similar study conducted in west Showa, Ethiopia,⁷ South western Nigeria¹⁸ and India⁹ found that EC utilization was strongly associated with knowledge ($p<0.001$). The respondent who are well informed were more likely to use emergency contraceptive. In another study of south west Ethiopia ECPs utilization was strongly associated with the level of awareness regarding ECPs.²⁰ Further more in the study of Tilahun found that respondent with poor knowledge on ECPs were 99% less likely to use ECPs (AOR: 0.09;95% CI= 0.021-0.189).⁸

Attitude towards the emergency contraceptive pills was not associated with the use of emergency contraceptive pills statistically (P value= 0.42).

V. Conclusion

Prevalence of use of emergency contraception was found to be 57.2%. Various factors were found to be affecting the use of emergency contraception. The factors were place of residence of the respondents', level of study, communication about RH matter with family and Knowledge on ECPs.

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