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Knowledge and attitudes towards emergency contraceptive pills among university students: A cross-sectional study

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Abstract

Introduction: Emergency contraceptive pills is to prevent the pregnancy after unprotected sexual intercourse. It helps to reduce the unwanted pregnancy and unsafe abortion. Despite of the availability of a range of modern and effective contraceptives, unwanted and unplanned pregnancies continue to occur among the adolescents.

Method: A cross-sectional study was carried out to determine the knowledge and attitude of students of Rajarshi Janak University regarding the Emergency Contraceptive Pills (ECP) in Mar 2025. Data were collected using a pre-tested, structured, self-administered questionnaire. Knowledge and attitude scores were calculated, and associations with socio-demographic variables were analysed using descriptive statistics and the Chi-square test, with a significance level of $p < 0.05$.

Result: Out of 200 total sample, females were 107(53.5). Only 86 (43.0) of the respondents had an adequate level of knowledge about ECPs. The mean knowledge score was 3.7 ± 1.77 (out of a possible 8). In contrast, 109(54.5) of respondents held a positive attitude towards ECPs. Adequate knowledge was significantly associated with marital status, academic program, and faculty ($p < 0.05$).

Conclusion: Student attitudes towards ECPs were generally positive, but knowledge levels were inadequate. We recommend targeted educational interventions and the integration of ECP information into the university curriculum to improve reproductive health outcomes

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Introduction

Unplanned pregnancies remain a significant public health concern worldwide, particularly among young adults and university students.¹ Emergency Contraceptive Pills (ECPs), also known as the morning-after pill, can be taken up to 120 hours or within 5 days after having unprotected sex and are very useful for preventing unwanted pregnancies and unsafe abortions. According to the WHO data 2019, adolescent students aged 15-19 years in low and middle income countries have an estimated 21 million pregnancies each year, among which approximately 50 were unintended which results in unsafe abortions and 12 million births.^{1,2} In Nepal, study shows that 11 of women are sexually active before the age of 15 and about 51 experience sexual intercourse before the age of 18.³ As the result, it increases the risk of unintended pregnancy, unsafe abortion and sexually transmitted diseases and HIV/AIDS.⁴

Unintended pregnancy poses a major challenge to the reproductive health of young adults in both the developed and developing nations.⁵ Many students still practice risky, contraceptive behaviours by engaging in unprotected sexual acts leading to unintended pregnancies.⁶ Effective contraception could prevent approximately 90 of abortion-related and 20 of pregnancy-related morbidity and mortality, as well as 32 of maternal deaths.⁷ Preventing pregnancy among adolescent especially students and help pregnancy related mortality and morbidity and is very fundamental for achieving the positive health outcomes across the life.¹

University students represent a demographic that is both sexually active and at a transitional stage of life, making them a key group for understanding patterns of contraceptive knowledge and behaviour. Evidences that emergency contraceptives can decrease the rate of unwanted pregnancy, reducing the need for an abortion and the negative maternal health consequences associated with an unwanted pregnancy.^{8,9} This study aims to assess the level of knowledge and attitudes towards emergency contraceptive pills among university students, with the goal of identifying

gaps in awareness and potential barriers to access and use. The findings are intended to inform targeted educational interventions and policy measures to promote informed reproductive health choices among young adults.

Method

A cross-sectional study was carried out to determine the knowledge and attitude of students of Rajarshi Janak University regarding ECP. The sample size was calculated by the formula: $n = [z^2 * p(1-p) / e^2]$. Knowledge regarding the use of emergency contraception among the higher secondary students of Nepal study shows that 63.7 of knowledge regarding ECPs among students.¹¹ With $e=0.07$ (margin of error); $z=1.96$ (confidence level); and $P=63.7$, the sample size was 182. Considering a 10 non-response rate, the final sample size was 200. Simple random sampling was used for the data collection.

A structured questionnaire developed by researchers based on a literature review was used. The questionnaire was self-administered to collect data. A pre-test was done among the students, and the face validity of the content were checked by the two researchers, faculty experts. The questions were divided into four sections: socio-demographic profile, knowledge, and attitude questions. Data were collected and analysed by using SPSS version 18. The data were analysed using descriptive statistics like frequencies, percentages, mean, and SD, and a chi-square test.

Eight questions with yes, no, and don't know were used with one point given for the right answer, and 0 for negative and don't know. Eight questions were used to assess the attitude towards the ECPs. The questionnaire was based on a 3-point Likert scale, like agree, disagree, and neutral. The total knowledge score was calculated out of 8. The median score (4.0) was used as the cut-off point to categorize knowledge into 'Adequate' (score ≥ 4) and 'Inadequate' (score < 4). For the attitude score, also out of 8, a score of ≥ 3 was classified as a 'Positive attitude' and a score of < 3 as a 'Negative attitude'.

Informed written consent was obtained from all respondents in the study. The anonymity of respondents was maintained by giving the code to each respondent. The study was conducted after ethical clearance from the Institutional Review Committee of Rajarshi Janak University. Respondents in the study were voluntary participated.

Result

Socio-demographics of the respondents, majority were females 107(53.5), age 20 years or below 103(51.5), and most 184(92) were unmarried. The majority of respondents, 191(95.5), were Hindu, 9(4.5), identifying as Muslim. No other religious groups were represented in the sample. Study program faculty-wise, most 66(33) were in CSIT, least 10(5) in BMLT, and half of the respondents were

in their first year of study, 102(51.0), and 169(84.5) in non-health science, Table 1.

The knowledge of respondents regarding ECPs, while 148(74.0) had heard of ECPs, only 121(60.5) correctly identified them as a contraception used after unprotected sex. Notably, 34(17.0) of respondents did not answer several key knowledge questions, particularly regarding ECP's effectiveness and regular use, Table 2.

The mean knowledge score (range: 0-8) was 3.7 ± 1.77 . Based on the median cut-off (score ≥ 4), 114(57.0) respondents had inadequate knowledge, while 86(43.0) had adequate knowledge. The mean attitude score (range: 0-8) was 2.9 ± 2.38 . Using the predefined threshold (score ≥ 3), 109(54.5) respondents had a positive attitude, while 91(45.5) had a negative attitude, Table 3.

Table 1. Socio-Demographic characteristics of the university students surveyed for knowledge and attitudes towards emergency contraceptive pills (ECP), n=200

	Characteristics	n	%
Sex	Male	93	46.5
	Female	107	53.5
Age	20 & below	103	51.5
	>20 years	97	48.5
Marital status	Married	16	8.0
	Unmarried	184	92.0
Religion	Hindu	191	95.5
	Muslim	9	4.5
Program	BBA	53	26.5
	BALLB	22	11.0
	CSIT	66	33.0
	BPH	34	17.0
	BMLT	10	5.0
	BCA	15	7.5
Level of study	First	102	51.0
	Second	54	27.0
	Third	28	14.0
	Fourth	16	8.0
Faculty	Health Science	31	15.5
	Non-Health Science	169	84.5

BBA: Bachelor of business administration, BALLB: Bachelor of arts and bachelor of legislative law, CSIT: Bachelor of science in computer science and information technology, BPH: bachelor of public health, BMLT: Bachelor in medical laboratory technology, BCA: Bachelor of computer applications

Table 1. University students' knowledge on ECPs, n=200

Variables	n	%
Have you ever heard about emergency contraceptive pills?		
Yes	148	74.0
No	19	9.5
Don't know	33	16.5
Missing	0	0.0
What do you mean by ECPs?		
Contraception used after unprotected sex	121	60.5
Contraception for teenagers	21	10.5
Contraception used for abortions	23	11.5
Don't know / incorrect	35	17.5
Missing	0	0.0
From where can we get ECPs if needed?		
Hospitals	19	9.5
Family planning centres	17	8.5
Pharmacies	84	42.0
PHCCS/Health posts/health centres	41	20.5
Don't know	39	19.5
Missing	0	0.0
Do you know when ECPs should be taken?		
Within 1 to 5 days of unprotected sex	121	60.5
Within 10 days of unprotected sex	20	10.0
Any day is ok	25	12.5
Don't know / incorrect	34	17.0
Missing	0	0.0
Is ECP effective in preventing unwanted pregnancy?		
Yes	115	57.5
No	11	5.5
Don't know	40	20.0
Missing	34	17.0
Can ECP be used as a regular means of contraception or family planning method?		
Yes	33	16.5
No	68	34.0
Don't know	65	32.5
Missing	34	17.0

Table 3. Knowledge and attitude scores towards ECPs among university students, n=200

Variable	Category	n(%)	Mean±SD	Cut-off point
Knowledge level	Inadequate knowledge	114(57.0)	3.7±1.77	Score <4
	Adequate knowledge	86(43.0)		Score ≥4
Attitude level	Negative attitude	91(45.5)	2.9±2.38	Score <3
	Positive attitude	109(54.5)		Score ≥3

Total score for knowledge and attitude ranged from 0-8 points

The association between socio-demographic characteristics and knowledge level revealed that only marital status, program of study, and faculty were significantly associated with adequate knowledge ($p < 0.05$). A higher proportion of married students 11(68.8%) had adequate knowledge compared to unmarried students 75(40.8). Similarly, students from health science faculty 25(80.6%) were significantly more likely to have adequate knowledge than those from non-health science faculties 61(36.1%). Variables such as sex, age, religion, and level of study were not significantly associated with knowledge level, Table 4.

Regarding attitudes towards ECPs, a positive inclination was observed, with 96(48.0%) agreeing they would advise a female friend about ECPs, and half of the respondents 101(50.5%) believing it is beneficial for adolescents. However, a consistent proportion of missing responses (approximately 17.0) was noted across several attitude questions, Table 5.

Characteristics of the respondents with positive and negative attitudes on ECPs, only the program and faculty of study were significantly associated with a positive attitude ($p \leq 0.05$), Table 6.

Table 4. Association between socio-demographic characteristics and knowledge on ECPs, n=200

Characteristics	Inadequate knowledge n(%)	Adequate knowledge n(%)	χ^2 -value	p-value
Sex			0.74	0.380
Male	50(53.8)	43(46.2)		
Female	64(59.8)	43(40.2)		
Age			0.93	0.330
≤20 years	62(60.2)	41(39.8)		
>20 years	52(53.6)	45(46.4)		
Marital status			4.70	0.030
Married	5(31.3)	11(68.8)		
Unmarried	109(59.2)	75(40.8)		
Religion			0.61	0.430
Hindu	110(57.6)	81(42.4)		
Muslim	4(44.4)	5(55.6)		
Program			23.20	<0.001
BBA	41(77.4)	12(22.6)		
BALLB	10(45.5)	12(54.5)		
CSIT	38(57.6)	28(42.4)		
BPH	11(32.4)	23(67.6)		
BMLT	3(30.0)	7(70.0)		
BCA	11(73.3)	4(26.7)		
Level of study			2.43	0.490
First	56(54.9)	46(45.1)		
Second	31(57.4)	23(42.6)		
Third	15(53.6)	13(46.4)		
Fourth	12(75.0)	4(25.0)		
Faculty			21.21	<0.001
Health Science	6(19.4)	25(80.6)		
Non-Health Science	108(63.9)	61(36.1)		

Only Hindu and Muslim categories are shown, as they were the only religious groups represented among the respondents

Table 5. University students' attitude towards ECPs, n=200

Variables	n	%
Will you use ECPs if needed?		
Agree	80	40.0
Disagree	43	21.5
Neutral	43	21.5
Missing	34	17.0
Do you think ECP is useful for teenagers to prevent unwanted pregnancy?		
Agree	65	32.5
Disagree	61	30.5
Neutral	36	18.0
Missing	38	19.0
Will you advise your female friend in case of unprotected sex regarding ECP?		
Agree	96	48.0
Disagree	28	14.0
Neutral	42	21.0
Missing	34	17.0
If ECP is easily available, will it help us with unprotected sex?		
Agree	68	34.0
Disagree	44	22.0
Neutral	53	26.5
Missing	35	17.5
Would the availability of ECP decrease the use of condoms?		
Agree	68	34.0
Disagree	49	24.5
Neutral	49	24.5
Missing	34	17.0
Does the use of ECP hamper the use of other contraceptives?		
Agree	63	31.5
Disagree	37	18.5
Neutral	66	33.0
Missing	34	17.0
Do you think ECP is beneficial for adolescents?		
Agree	101	50.5
Disagree	35	17.5
Neutral	30	15.0
Missing	34	17.0
Is ECP safer for its users?		
Agree	56	28.0
Disagree	63	31.5
Neutral	47	23.5
Missing	34	17.0

Percentages are calculated based on the total sample size (n=200), and the 'Missing' category represents non-responses to specific questions.

Table 6. Socio-demographic characteristics and their association with attitude on ECPs, n=200

Characteristics		Positive attitude n(%)	Negative attitude n(%)	Chi-square value	p-value
Sex	Male	58(62.4)	35(37.6)	4.337	0.037
	Female	51(47.7)	56(52.3)		
Age	20 & below	51(49.5)	52(50.5)	2.129	0.145
	>20 years	58(59.8)	39(40.2)		
Marital status	Married	13(81.3)	3(18.8)	5.018	0.025
	Unmarried	96(52.2)	88(47.8)		
Religion	Hindu	105(55.0)	86(45.0)	0.384	0.535
	Muslim	4(44.4)	5(55.6)		
Program	BBA	19(35.8)	34(64.2)	16.799	0.005
	BALLB	16(72.7)	6(27.3)		
	CSIT	34(51.4)	32(48.5)		
	BPH	24(70.6)	10(29.4)		
	BMLT	8(80.0)	2(20.0)		
	BCA	8(53.3)	7(46.7)		
Level of study, year	First	55(53.9)	47(46.1)	1.854	0.603
	Second	29(53.7)	25(46.3)		
	Third	18(64.3)	10(35.7)		
	Fourth	7(43.8)	9(56.3)		
Faculty	Health Science	27(97.1)	4(12.9)	15.720	0.000
	Non-Health Science	82(48.5)	87(51.5)		

Discussion

The knowledge level of ECPs among the students of the Rajarshi Janak University was 86(43.0%). This level of knowledge was higher than the level found among the students of Gorkha campus, Nepal (22.4%), and (28.9%) among the students of Kathmandu School.^{10,11} It was, however, lower (83.4%) than the college students of Ramechaap, Nepal, and the University of Buea (63.0%).^{12,13}

In this study, only 148(74.0%) of the students responded that they had heard about ECPs,

lower than the study done in Gorkha campus (100%) and (84.5%) among the Kathmandu students.^{12,14} However, 121(60.5%) of the students knew that the ECPs should be used only after unprotected sex in our study, which is lower than the students of 78.3% and higher than the Ramechaap students 43.1%.^{14,15}

In this study about the availability of the ECPs students 84(42.0%) students said they can get from the pharmacies, which is higher than the Kathmandu students, 20.6% who got the ECPs from the pharmacies.¹² Most of the students lacked adequate knowledge about the general

features of ECPs. Only 115(57.5%) of the students in the study knew that it is effective to prevent unwanted pregnancies, which is lower than the study done in Kathmandu students, 93.2% and the study done in Manmohan college, 62.9%.^{12,16} This might be due to the fact that the practice of buying and selling medicines without a prescription is common in Nepal in the absence of strict laws and their implementation. In addition, pharmacies are more commonly available and utilized in Janakpur than the health posts or hospitals, and pharmacies ensure to have confidentiality of ECPs.

Study reveals 68(34.0%) of the students responded that ECP should not be used as a means of regular contraception, which is lower than the study done in Kathmandu University female students, 45.5%.¹⁷ In this study, marital status, program of the study, and the faculty of the respondents were significantly associated with adequate knowledge ($p < 0.05$), and age, sex, and religion were not significant, while there was no significant difference in age, sex, and marital status of the respondents in the study done in Gorkha Campus students.¹⁰ While another study showed that age, marital status, use of contraceptives and knowledge of ECPs used within 72 hours were significantly associated with the use of ECPs.¹⁷ Similarly, study among students found significant differences in many of the variables, with female students having higher knowledge about ECPs.¹⁸ Marital status might be associated as in cultural context to the attitude of ECPs.

More than half of the students, 109(54.5%) had a positive attitude, which is higher than the study done among Kathmandu students (32.1%) and the study conducted in Ethiopia, where 53% of the students had a positive attitude towards emergency contraceptives.^{11,12} Similarly, a study conducted in India among the medical students of different levels showed an overall positive attitude towards EC among 74% of the respondents.²¹

In this study, 80(40.0%) of the respondents agreed that they would use emergency contraception if needed, and they would recommend it to their female friends 96(48.0%). Half of the respondents, 101(50.5%), thought that it is beneficial for adolescents, whereas only 56(28.0%) agreed that it is safe for users. Whereas 68(34.0%) of respondents also revealed that it will decrease the use of condoms. This is close to the findings of Gorkha students, where more than half of the study respondents believed that ECPs are safe to use (53.4%). Only 25.6% reported that adolescents (teenagers) should be given easy access to ECPs, and 34.0% agreed with the recommendation for ECP use.^{10,21} This attitude level reveals that students will recommend this to prevent unwanted pregnancy, and it will not decrease the use of condoms.

The health science students 27(87.1%) had a positive attitude toward the emergency contraceptive, which is higher than the study done in India, among the medical students, 74% of the respondents only had a positive attitude.²¹ In this study, the various programs and the faculty of health science and non-health science were statistically significant, showing the need for the curriculum regarding ECP for enhancing the knowledge and the attitude towards the ECPs to prevent the early pregnancy and its effect among the students of Rajarshi Janak University.

Limitations include that we used a self-developed questionnaire with face-content validity by researcher faculties and did not check for item analysis statistical reliability (Cronbach's alpha). For scoring and cut-off points, we used the median (4.0) between "adequate" and "inadequate" knowledge scores, ranging from 0 to 8, and the same logic applied to the attitude score. The findings relied on self-reported responses, which may be subject to social desirability or recall bias, especially concerning sensitive topics like contraceptive use. Another issue, the non-response of 34(17%) across sensitive questions regarding ECPs knowledge and attitudes, may itself indicate hesitancy, stigma, or a lack of

comfort with the topic among a segment of the student population and may have influenced the overall findings and analysis. The study was conducted among students from a selected university, which may not represent the wider population, as only limited religious beliefs, Hindu and Muslim, were represented in the study population.

Conclusion

The knowledge of ECPs among students was low, along with the general features of ECPs, although they generally had a positive attitude towards the ECPs (54.5%). Most of them would recommend and use it if needed. Based on our findings, we recommend that strategies to promote ECPs use should include accurate information, incorporated in college course content, which may increase the knowledge and attitude towards the ECPs and prevent unwanted pregnancies and their consequences.

Author contribution

Concept design: PS; Data collection: VK, JC, RC; Data analysis: PS; Draft manuscript: PS; Final manuscript and accountability: All

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Conflict of interest

None

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Supplementary material

Data and supplementary material that support the findings of this study are available from the corresponding author upon reasonable request.

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