

KNOWLEDGE AND ATTITUDE AMONG UNDERGRADUATE STUDENT NURSES REGARDING CONTRACEPTION IN PESHAWAR, PAKISTAN

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DOI: <https://doi.org/10.5281/zenodo.18426679>

Keywords

Attitude, Contraception, Knowledge, Student Nurses, Reproductive health, Unintended pregnancy.

Article History

Received: 05 December 2025

Accepted: 15 January 2026

Published: 30 January 2026

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Abstract

OBJECTIVES

Contraception plays a vital role in preventing unintended pregnancies, reducing maternal and infant mortality rates, and promoting overall reproductive health. This study was conducted to assess the knowledge and attitude among student nurses regarding contraception in Peshawar, Pakistan.

METHODOLOGY

This descriptive cross-sectional was carried out in three private nursing colleges in Peshawar, Pakistan from July 2024 to December 2024. Data were collected from 169 participants, selected through Convenience sampling technique utilizing an adopted questionnaire of 69 questions related to the knowledge and attitude regarding contraception in a Likert Scale. Frequencies and percentages were calculated for demographic variables. Mean and standard deviation were calculated for knowledge. Chi square test was applied to find association between demographic variables and level of knowledge. Data were analyzed with SPSS 22.

RESULTS

Of the total 169 student nurses, males were 154 (91%) and females were 15 (9%). Age of the 81 % of the participants were between 17-21 years, 21% were 22-26 years. had good knowledge, 115 (68%) had average level of knowledge and 24 (14.2%) had poor knowledge regarding contraception. Majority of the participants 98 (58%) has positive attitude towards contraception while 71 (42%) had negative attitude.

CONCLUSION

The findings concludes that student nurses have moderate knowledge regarding contraception while more than half of the student nurses had positive attitude towards contraception. Although the findings are satisfactory but not ideal given the gravity of the issues. Therefore, educational programmes are required further enhance the knowledge and attitude of the student nurses.

INTRODUCTION

Contraception refers to intentionally prevent pregnancy by utilizing devices, adopting practices,

using medications or performing surgery.¹ Contraceptive methods are highly cost-effective

and widely recognized as essential solutions for preventing unintended pregnancies and reducing the risk of sexually transmitted infections.^{2,3} The rapid growth of population is mostly occur in the low income countries of the Sub-Saharan African and South Asian region where the annual growth rate is above 2.5%.⁴ These countries face high fertility rates, high maternal and infant mortality, and low life expectancy.^{5,6} The world population is estimated to surge to 8.5 billion, 9.7 billion and 11.2 billion by 2030, 2050 and 2100 respectively.⁷ Couple Protection Rates (CPR) are low in these regions, with India's CPR at 40.4% and Pakistan's at 30% in 2011, compared to 71% in more developed countries like the USA.⁸

Approximately 170 million women worldwide do not wish to become pregnant, yet they do not use any form of contraception.¹ This has been attributed to factors such as limited access to services and facilities, as well as opposition from spouses or relatives. In Iran, despite 5.9% of married women not wanting to conceive, they still do not utilize any contraceptive methods.⁹ Pakistan, with an estimated population of 145 to 149 million, ranks as the seventh most populous country globally, with over 40% of its population being under the age of 15.¹⁰ Young adults between the ages of 18 and 25 are at a higher risk of experiencing negative consequences like sexually transmitted infections and unplanned pregnancies.¹¹ Lack of contraceptives knowledge and inappropriate attitude in practice of adolescence cause some high risks such as unintended pregnancy, abortion, and sexually transmitted infections.²

A large majority 97%, of Pakistani women know at least one method of contraception.¹² In 2004, contraceptive use in Pakistan was lower compared to many other Muslim-majority countries.¹⁰ Women's knowledge of effective contraception is crucial for reducing maternal mortality and implementing successful family planning programs.⁹ The effectiveness of educational methods in promoting behavioral change for health and practice depends on their suitability for learners. Educators should carefully select methods that align with learners' educational backgrounds and socioeconomic circumstances.⁹

The findings of this study will be vital in the assessment of the student nurses for educational programmes or training sessions. The students are the future educators. Therefore, their knowledge and attitude play central role in the effectiveness of the educational programmes. This research study is designed to evaluate the knowledge and attitudes of undergraduate student nurses regarding the use of contraceptives.

METHODOLOGY

This descriptive cross-sectional study was carried out at private sector nursing colleges in Peshawar, Life Care College of Nursing, Islamia Nursing College and Razi College of Nursing, for 06 months duration from July 2024 to December 2024. The ethical approval was granted by concern institutes of Peshawar. The sample size of the study was 169 student nurses, calculated through WHO open Epi Sample Size Calculator. For sample size calculation, the margin of error was considered 0.5, the confidence interval was 95%. A convenient sampling technique was utilized for the selection of participants. Informed consents were obtained from the participants of the study after completely explaining the purpose of data collection. All the student nurses who are enrolled in BSN (BS in Nursing) were included in the study. The newly enrolled students were excluded from the study of 1st semester. An adopted questionnaire was used for data collection; pilot study was conducted on the on 10% of the sample size. The questionnaire consisted of three sections.¹³ The first section represented the demographic characteristics while the second section consisted 69 questions regarding contraceptive knowledge and the 3rd section included attitude of students regarding contraception. The answers of the questions were considered as correct and incorrect. Frequencies and percentages were calculated for demographic variables. The level of knowledge was assessed by obtaining score on the scale of "Good knowledge" representing score of ≥ 70 , "Average Knowledge" representing 50-70%, while < 50 was considered "Poor knowledge". Chi Squared was calculated for comparison among the demographic variables. SPSS 22 was utilized for data analysis.

RESULT

Table 1: Of the total 169 student nurses, males were 154 (91%) and females were 15 (9%). Age of the 81 % of the participants were between 17-21 years, 21% were 22-26 years.

Table1: Demographic characteristics of participants

	Frequency	Percentage
Age		
17-22	137	81
22-26	32	19
Gender		
Male	154	91
Female	15	9
Institute		
Life Care College	69	40.8
Islamia Nursing Colle	59	34.9
Razi College of Nursing	41	24.3
Socio Economic Status		
Low	17	10.1
Middle	104	61.5
High	48	28.4

Table 2: Shows the correct responses of the participants. Lactation provide protection from pregnancy for six months with exclusive breast feeding and lactation is an effective method for six months obtained more than 80% correct

response. While “lactation confers protection with breast feeding as well as top feeding for 6 months”, “condoms have high failure rates” and “tube ligation causes menstrual disturbances” obtained correct just above 30%.

Table No 2: Correct responses of participants for each item

		Frequency	Percentage
Natural Method			
1	Natural methods include abstinence and rhythm method	116	68.6
2	Rhythm method includes avoiding intercourse during ovulatory period	114	67.5
3	Abstinence means that male partner withdraws before ejaculation during intercourse	113	66.9
4	Natural methods have high failure rates	123	72.8
5	These are considered very effective methods	125	74.0
Lactation			
6	Confers protection from pregnancy for 6 months with exclusive breast feeding	138	81.7
7	Confers protection with breast feeding as well as top feeding for 6 months	56	33.1
8	Very effective method for 6 months	145	85.8
Condoms			
9	They have high failure rates	54	32.0
10	They are considered very effective methods	124	73.4
11	They can be considered for those in whom there is a risk of STD's	118	69.8
Combine Oral Contraceptive Pills (OCPs)			
12	They contain both estrogen and progesterone	114	67.5

13	They can be used immediately after delivery	110	65.1
14	They can be used with breast feeding	97	57.4
15	There is no problem with efficacy if 1 or 2 tablets are missed from pack, and the rest of the pack is completed timely	91	53.4
16	Patients have to take extra contraceptive measures if she missed more than 3 or 3 tablets in succession	82	48.5
17	These can cause weight gain	111	65.7
18	They are considered very effective method	113	66.9
19	These can be used immediately after delivery	73	43.2
20	These can be used with breast feeding	73	43.2
21	Time punctuality is more required then with the COCP's	103	60.9
22	They are considered very effective method	70	41.4
23	These are considered very effective method of contraception	48	28.4
24	They have high failure rates	80	47.3
25	They can be use as backup method when regular contraception is missed, or failed like condom breakage etc.	122	72.2
26	They can be used for regular contraception	89	52.7
Injectables			
27	They are available in various formulations like monthly, 2 monthly and 3 monthly injections.	138	81.7
28	NET-EN (norethisterone enanthate) 2 monthly and DMPA (Depot-medroxy progesterone acetate) 3 monthly injections contain only progestin	73	43.2
29	Monthly injectables contain estrogen and progestin both	67	39.6
30	NET-EN 2 monthly and DMPA 3 monthly can be used with breast feeding	69	40.8
31	Monthly injections can be used with breast feeding	76	45.0
32	Injectables are considered very effective method of contraception	100	59.2
33	Return of fertility is often delayed	104	61.5
34	Gradual weight gain is common	121	71.6
35	Menstrual problems are common but not harmful	110	65.5
Implants			
36	It is considered very effective method	109	64.5
37	Can be used with breast feeding	81	47.9
38	They contain progestin only-	77	45.6
39	Require specifically trained provider to insert and remove	105	62.1
40	Reversibility is immediate after removal	81	47.9
41	It can provide long term contraception and can be left for 37 years.	88	52.1
42	Menstrual problems are common but not harmful.	109	64.5
Intrauterine Contraceptive Device			
43	It can be used immediately after delivery	91	53.8
44	It can be used with breast feeding	92	54.4
45	It can be inserted in first 12 days from her LMP-	97	57.4
46	It can be inserted at the time of cesarean section	88	52.1
47	It can also be used for emergency contraception-	99	58.6
48	Quick return of fertility occurs after its removal.	93	55.0

49	It is considered very effective method.	106	62.7
50	It can be used as a long-term contraception 5-10 years.	81	47.9
51	It can give menstrual disturbances for first few months	98	58.0
52	It rarely leads to PID (pelvic inflammatory disease).	105	62.1
53	The risk of infection related to its insertion is within 3-5 days only.	99	58.6
Tube Ligation			
54	It is a permanent method of contraception in females-	119	74.4
55	Reversal is not usually possible	89	52.7
56	It requires a surgical procedure	134	79.3
57	Informed consent is also required-	120	71.0
58	Patient should be at least >35 years of age -	87	51.5
59	Patient has completed her family	102	60.4
60	Patient husband is informed	133	78.7
61	It is considered very effective method	120	71.0
62	It is effective soon after surgery	103	60.9
63	It causes menstrual disturbances	57	33.7
Vasectomy			
64	It is a permanent method for males-	113	66.9
65	Reversal is not possible	98	58.0
66	It involves a safe simple surgical procedure	118	69.8
67	Does not affect the male sexual performance	92	54.4
68	It is not immediately effective and requires a time of 3 months	75	44.4
69	After vasectomy extra method of contraception is required for 3-4 months	96	65.8

Table 3: Shows the level of knowledge of the participants. Of the total number of participants, majority 115 (68%) had Average Knowledge, 30 (17.8%) had Good Knowledge while 24 (14.2%) student nurses had Poor Knowledge.

Knowledge	Frequency	Percentage
Good knowledge (≥70%)	30	17.8
Average Knowledge (50-69%)	115	68.0
Poor Knowledge (<50%)	24	14.2

Table 4: Shows association of knowledge with the demographic characteristics of the participants. No statistically significant association was found with demographics.

Table 4: Association of demographic variables with level of knowledge

Variables	Characteristics	Good Knowledge	Average Knowledge	Poor Knowledge	p-value
Gender	Male	28	104	22	0.879
	Female	2	11	2	
College	Life Care College of Nursing	16	44	9	0.589
	Islamia Nursing College	7	43	9	
	Razi College of Nursing	7	28	6	
Age	17-21 Years	26	91	20	0.614
	22-26 Years	4	24	4	

Socio economic status	Low class	2	14	1	0.708
	Middle class	18	70	16	
	Upper class	10	31	7	

Chi Squared test was applied. P-value of ≤ 0.05 was considered significant.

Figure 1: Shows the overall attitude of the participants towards the contraception. Majority of the participants 98 (58%) has positive attitude towards contraception while 71 (42%) had negative attitude.

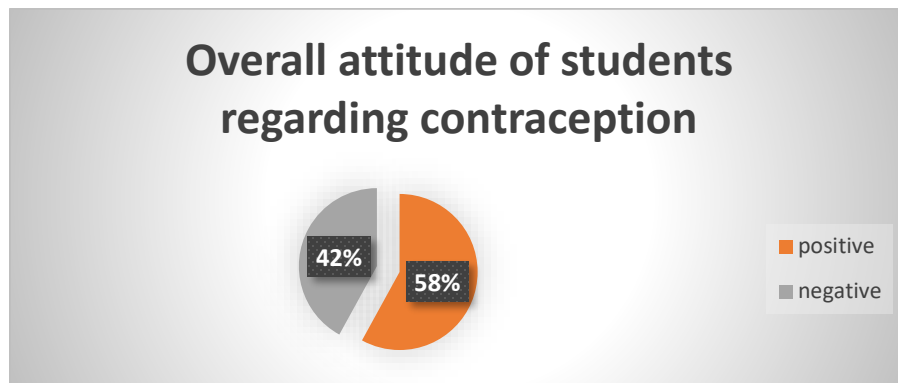


Figure 1

DISCUSSION

The study was conducted to assess the knowledge and attitude of student nurses regarding contraception. Overall, 169 nursing students were included in the study. Majority (91%) of student nurses were male, while (11%) were female. Majority of the participants 81% were from age ranged 17-21 years, while 19% were from age range 22-26 years age. In the same context, a cross-sectional study was conducted with Vietnamese and American college students to compare the knowledge, perception and awareness regarding contraception use. The study revealed that majority (70%) of the participants were female.¹⁴ Another study was conducted in 2022 about knowledge, attitudes, and practices among health providers regarding access to and use of contraceptive methods among adolescents and youth in urban Guinea, where were (82.4%) were female while 17.6% were male participants⁸. The presence of the majority of male student nurses is due to cultural and education context. Here, most of the female students obtain admission in public sector college where only female student nurses are educated and trained. Female are in minority due to coeducation. Most of the parents are not willing to send their daughters to private colleges.

In the current study majority (68%) of the participants had average level of knowledge, while (17.8%) student nurses had good level of knowledge and (14.2%) student nurses had poor level of knowledge. In the previous study conducted in Vietnam reported majority (57.6%) participants had medium level of knowledge, while 35.3% participants had poor level of knowledge and there were just (7.1%) of participants who had good knowledge of contraceptive methods.² A study conducted in South-Western, Nigeria only 37.8% participants had good level of knowledge.⁹ The similarity in the results may be due to same level of educational system and economic status. In contradiction, many studies has reported adequate knowledge about the contraception.^{11,15,16} The improved level of knowledge is due to the fact that these students received sexuality training during their university degrees. Health education is an effective intervention for enhancing knowledge regarding contraception.^{17,18} In Pakistan training awareness programs for student nurses is extremely rare or nonexistent. Globally, at international level there are specialized training and awareness programs for students in every discipline of health care. Moreover the current programmes can be further

enhanced by identifying the demographic characteristics of the population.¹⁹ The health care professional can play a major role in this context.²⁰ Therefore, the student nurses knowledge, awareness, attitude and perception require attention and should be the focus of research studies.

In the current study majority of the participants had positive attitude (58%), while 42% of participants shown negative attitude towards contraceptive methods. In this context, a study was conducted in south western Nigeria, where majority of females students in Osun state college of education, Ilesa had negative attitude to contraceptives.²¹ Additionally, a study was conducted in All India Institute of Medical Sciences, Jodhpur, Rajasthan shown that majority where 71% of the respondents had a favorable attitude toward family planning and around three-fourths of study, participants practiced one or other method of family planning.²² Additionally, a study from urban slums of Punjab, India shown 59.4% of female and 76.1% of male respondents had a positive attitude and were willing to adopt/ use a family planning method in the future also.²³ Another study conducted in Karachi Pakistan, showed that women had positive attitude and awareness to different methods of contraception.¹² A little more than half of our participants had positive attitude toward contraception, which is not in line with the gravity of the situation due to population growth in our country. The attitude can be improved through health educational programmes in the educational institutions.

STRENGTHS AND LIMITATIONS

The strength of current study lies in the fact that the study was conducted on student nurses who are the future educators. These students should be included in research studies because in future they will disseminate educational information to the individuals, families and communities. The study could be further improved if the sample had been selected through random sampling. Moreover, the time duration of the study was short.

CONCLUSION

The findings conclude that the participants had average level of knowledge and slightly more half had positive attitude. This call for further interventions to improve knowledge and attitude of students generally and health care professional students specifically, regarding contraception as our country is confronted with critical issues due to population growth.

ACKNOWLEDGEMENTS

All the participants and concern institutes are equally acknowledged for their help and cooperation in completing this study.

COMPETING INTERESTS

We declare no competing interests.

FUNDINGS

we did not receive any funding from any individual or organization

References

1. Anderson DJ, Johnston DS. A brief history and future prospects of contraception. *Science*. 2023;380(6641):154-8. [10.1126/science.adf9341](https://doi.org/10.1126/science.adf9341)
2. Ngoc TA, Thi H, Sen N. Knowledge and Attitude Towards Contraceptive Methods Among First-Year Nursing Students in Da Nang, Vietnam. *Rama Med J*. 2022;45(3):23-32. [10.33165/rmj.10.33165/rmj.2022.45.3.257591](https://doi.org/10.33165/rmj.10.33165/rmj.2022.45.3.257591)
3. Souza PD, Bailey J V, Stephenson J, Oliver S, Souza PD, Bailey J V, et al. Factors influencing contraception choice and use globally: a synthesis of systematic reviews. *Eur J Contracept Reprod Heal Care*. 2022;27(5):364-72. <https://doi.org/10.1080/13625187.2022.2096215>
4. Maja MM, Ayano SF. The Impact of Population Growth on Natural Resources and Farmers' Capacity to Adapt to Climate Change in Low-Income Countries. *Earth Syst Environ*. 2021;5(0123456789):271-283. <https://doi.org/10.1007/s41748-021-00209-6>

5. Boukhalfa C, Ouakhzan B, Masbah H, Acharai L, Zbiri S. Investing in midwifery for sustainable development goals in low- and middle-income countries: a cost-benefit analysis. *Cost Eff Resour Alloc.* 2024;22(1):1-8. <https://doi.org/10.1186/s12962-023-00507-y>
6. Patterson JK, Neuwahl S, Kirsch S, Moore JL, Tita ATN, Carlo WA, et al. Cost-effectiveness of intrapartum azithromycin to prevent maternal infection, sepsis, or death in low-income and middle-income countries: a modelling analysis of data from a randomised, multicentre, placebo-controlled trial. *Lancet Glob Heal.* 2025;13(4):e679-88. [http://dx.doi.org/10.1016/S2214-109X\(24\)00517-5](http://dx.doi.org/10.1016/S2214-109X(24)00517-5)
7. Lumor DA, Obirikorang C, Acheampong E, Obirikorang Y, Owusu H, Newton S. The relevance of knowledge, perception, and factors that influence contraceptive use among married women living in Uaddara Barracks, Ghana. *Front Glob Womens Heal.* 2023;(August):1-9. <https://doi.org/10.3389/fgwh.2023.1110024>
8. Pegu B, Pratap B, Gaur S, Sharma N, Singh AS. Knowledge , attitude and practices of contraception among married women. *Int J Reprod Conception, Obstet Gynecol.* 2014;3(2):385-8. 10.5455/2320-1770.ijrcog20140620
9. Sarayloo K, Moghadam ZB, Mansoure JM, Mostafa H, Mohsen S. The impact of an educational program based on BASNEF model on the selection of a contraceptive method in women. *Iran J Nurs Midwifery Res.* 2015;20(2):171-8.
10. Mustafa R, Afreen U, Hashmi HA. Contraceptive Knowledge , Attitude and Practice Among Rural Women. *J Coll Physicians Surg Pakistan.* 2008;18(9):542-5.
11. Scarano-Pereira JP, Martinino A, Manicone F, Álvarez-García C, Ortega-Donaire L, Clavijo-Chamorro MZ, et al. Young nursing and medical students' knowledge and attitudes towards sexuality and contraception in two spanish universities: an inferential study. *BMC Med Educ.* 2023;23(1):283. [https://doi.org/10.1186/s12909-023-04255-8%0A\(2023\)](https://doi.org/10.1186/s12909-023-04255-8%0A(2023))
12. Naqvi S, Hashim N, Zareen N, Fatima H. Knowledge, attitude and practice of parous women regarding contraception. *J Coll Physicians Surg Pakistan.* 2011;21(2):103-5.
13. Shahid A, Rabia S, Parveen F. Knowledge and Attitude of Contraception Among Nursing And Midwifery Students. *J Surg Pakistan.* 2018;23(1):35-40. doi:<http://dx.doi.org/10.21699/jsp.23.1.9.%0AJournal>
14. Kamimura A, Trinh HN, Hurley J, Izampuye E. Knowledge and Perceptions of Contraceptive Health Among College Students in Vietnam and the United States. *Int J Sex Heal.* 2020;0(0):1-9. <https://doi.org/10.1080/19317611.2020.1846655>
15. Silva CF, Rodrigues A, Beir D, Rocha P, Santos P. Young People Awareness of Sexually Transmitted Diseases and Contraception: A Portuguese Population-Based Cross-Sectional Study. *Int J Environ Res Public Heal.* 2022;19:13933. <https://doi.org/10.3390/ijerph192113933>
16. Castro CA, Monterrosa-blanco A, Rodriguez L, Castiblanco A, Bernal L, Ladino J, et al. Knowledge and attitudes regarding contraceptive methods and sex education in students and parents of eight Colombian schools 2020 - 2021 : a mixed methods study. *Lancet Reg Heal - Am.* 2024;30:100678. <https://doi.org/10.1016/j.lana.2024.100678>

17. Kumar R, Anwar M, Naeem N. Effect of health education on knowledge , perception , and intended contraceptive use for family planning among university students in Pakistan. *Sci Rep.* 2024;14:28474. <https://doi.org/10.1038/s41598-024-79550-5>
18. Sharma A, McCabe E, Jani S, Gonzalez A, Demissie S, Lee A. Knowledge and attitudes towards contraceptives among adolescents and young adults. *BMC Contracept Reprod Med.* 2021;(2):1-6. <https://doi.org/10.1186/s40834-020-00144-3>
19. Sheng B, Yao D, Zhang H, Tang J, Du X. Knowledge , attitude and practice of contraceptive methods among women with an unplanned pregnancy. *BMJ Open.* 2025;14:e078364. [10.1136/bmjopen-2023-078364](https://doi.org/10.1136/bmjopen-2023-078364)
20. Karim SI, Irfan F, Saad H, Alqhtani M, Alsharhan A, Alzhrani A, et al. Men ' s knowledge , attitude , and barriers towards emergency contraception : A facility based cross-sectional study at King Saud University Medical City. *PLoS One.* 2021;16(4):e0249292. <https://doi.org/10.3390/ijerph192113933>
21. Amu EO, Solomon OO, Odu OO. Knowledge , Attitude and Pattern of Contraceptive use among Female Students of Osun State College of Education , Ilesa , South-Western , Nigeria. *Pakistan J Med Heal Sci.* 2020;14(2):878-81.
22. Gothwal M, Tak A, Aggarwal L, Rathore AS, Singh P, Yadav G, et al. A study of knowledge , attitude , and practice of contraception among nursing staff in All India Institute of Medical Sciences , Jodhpur , Rajasthan. *J Fam Med Prim Care.* 2020;9:706-10. [10.4103/jfmprc.jfmprc_1012_19](https://doi.org/10.4103/jfmprc.jfmprc_1012_19)
23. Rattan S, Kalia M, Rohilla R, Grover PK, Dandona S, Sharma MK, et al. Contraceptive awareness and practices in reproductive age couples: A study from urban slums of Punjab. *J Fam Med Prim Care.* 2022;11:3654-9. [10.4103/jfmprc.jfmprc_2257_2](https://doi.org/10.4103/jfmprc.jfmprc_2257_2)