

ASSESSMENT OF GENERAL BELIEFS AND ATTITUDES OF NURSING STUDENTS REGARDING VACCINATION

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Abstract

Background: Vaccination is one of the most effective public health interventions for preventing infectious diseases. However, vaccine hesitancy remains a growing global concern, even among healthcare professionals. Nursing students play a vital role in future vaccination advocacy and patient education, making it important to assess their beliefs and attitudes toward vaccination.

Methods: A descriptive cross-sectional study was conducted among 175 undergraduate nursing students at Peoples University of Medical and Health Sciences for Women (PUMHSW), Nawabshah. Data were collected using a structured questionnaire assessing demographic characteristics, general beliefs, attitudes, and opposite beliefs regarding vaccination. Data were analyzed using SPSS version 25.

Results: A total of 175 nursing students participated in the study, with a mean age of 21.46 ± 1.63 years. The majority were Sindhi (77.7%), Muslim (89.7%), middle class (97.7%), and hostel residents (92%). Most participants demonstrated positive beliefs toward vaccination, with 73.8% agreeing that vaccines are safe and 78.8% expressing interest in learning more about vaccination. Additionally, 65.1% reported willingness to recommend adherence to the vaccination schedule, and 76.6% stated they would educate patients about vaccine effectiveness and side effects. However, notable hesitancy was observed, as 54.8% expressed doubts about vaccine effectiveness and 68.6% believed vaccination is unnecessary when in good health. According to the ACVECS scale, 69.1% of students showed a neutral attitude, 16.6% positive, and 14.3% negative, indicating overall moderate but uncertain vaccine confidence.

Conclusion: Although nursing students demonstrated generally positive professional attitudes toward vaccination, significant hesitancy and neutral beliefs were observed. These findings highlight gaps in knowledge and confidence, emphasizing the need for strengthened vaccination education within the nursing curriculum to promote informed attitudes and effective vaccine advocacy.

INTRODUCTION

Vaccine hesitancy, understood as the refusal or delay in accepting vaccines despite the availability of vaccination services. Represents a serious threat to the control of communicable diseases, Its impact on public health led the World Health Organization (WHO) to consider it one of the ten main threats to global health and to integrate it as a priority challenge in the Immunization Agenda 2030: A global strategy to leave no one behind. The reluctance to receive vaccines is a significant global health concern and is listed among the top 10 threats to world health. Despite this, COVID-19 vaccine hesitancy continues to be underreported in various regions due to widespread misinformation and disinformation, inadequate understanding, and unwavering attitudes. Globally, there have been reports of vaccine hesitancy owed to a number of factors, including conspiracy theories and concerns over vaccine safety, Some conspiracy theories circulating among the public claim that vaccines are designed to sterilize young people or contain microchips that alter Deoxyribonucleic acid (DNA), making it easier to control individuals through technology. SAGE has identified parents as a key target group for vaccine and immunization education, additionally, it has been emphasized that healthcare providers and individuals undergoing training in these fields, who will be responsible for future healthcare delivery, are also critical target groups for vaccine and immunization education. Ensuring that healthcare providers possess a high level of knowledge and positive attitudes toward vaccines and immunization practices can contribute to the dissemination of accurate and sufficient vaccine information to the public during their professional roles in counseling and education,. Moreover, healthcare providers with high levels of knowledge and positive attitudes toward vaccines and immunization practices can also contribute to increasing immunization rates through appropriate guidance,.Due to the future professional roles of nursing students and their position in health care teams, this study aimed to analyze the preventive behaviours, vaccination acceptance and vaccination advocacy of nursing students in

three European countries, as well as the factors influencing their vaccination intention, The survey was performed in Slovenia, Poland and Serbia, the countries belonging to Central and Eastern Europe with comparable system of nursing education, organized according to the EU directive 2005 . Nursing students' beliefs and attitudes towards vaccinations significantly impact their practice and patient interactions. Understanding these perspectives is crucial to identify knowledge gaps and misconceptions. Targeted educational interventions can enhance their ability to promote vaccination and provide quality care. This study explores nursing students' views on vaccinations to inform evidence-based education. Ultimately, it aims to improve patient education and public health outcomes.

Methodology

This study employed a descriptive cross-sectional design and was conducted at People's University of Medical and Health Sciences for Women. The study duration was two months, from 17 November to 17 January, following approval from the Institutional Review Board (IRB). The target population consisted of approximately 1,000 undergraduate nursing students enrolled from first to fourth year. A sample size of 175 participants was calculated using the Rao Soft sample size calculator. A non-probability convenience sampling technique was used to recruit participants. The study included undergraduate nursing students who were willing to participate, while students not belonging to the nursing profession or those unwilling to participate were excluded. Data were collected using an ACVECS scale consisting of four sections: Section A included demographic information. Section B assessed general beliefs regarding vaccination; Section C assessed general attitudes toward vaccination; and Section D evaluated opposite beliefs and attitudes regarding vaccination. The Attitudes and Behaviors toward Vaccination Assessment (ACVECS) scale was used, with responses recorded on a five-point Likert scale ranging from strongly disagree to strongly agree. Data were analyzed using SPSS version 25.

Results

DEMOGRAPHIC INFORMATION

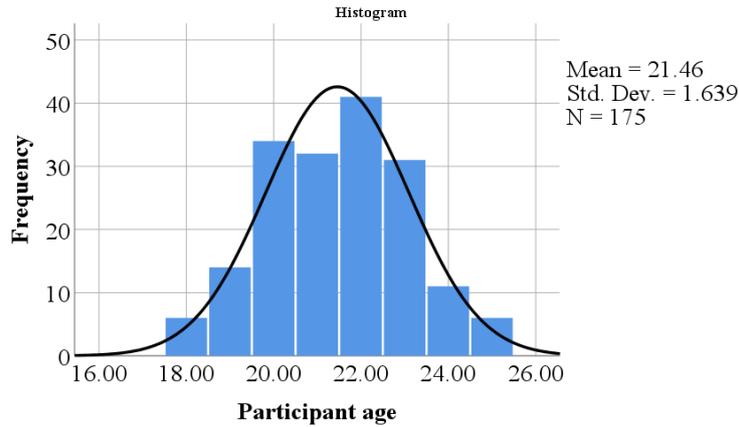


Figure no: 1.

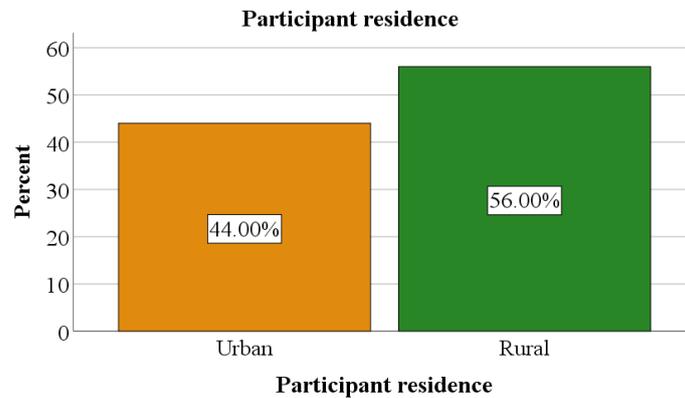


Figure no: 2

Table: 1 Ethnicity of Participants

Participant Ethnicity	Frequency	Percent
Sindhi	136	77.7%
Punjabi	21	12.0%
Baloch	13	7.4%
Pakhtoon	1	.6%
Muhajir	2	1.1%
Other	2	1.1%

Table No: 2 Participants Economic-Status

Participant Economic-Status	Frequency	Percent
Poor class	2	1.1%
Middle class	171	97.7%
High class	2	1.1%
Total	175	100%

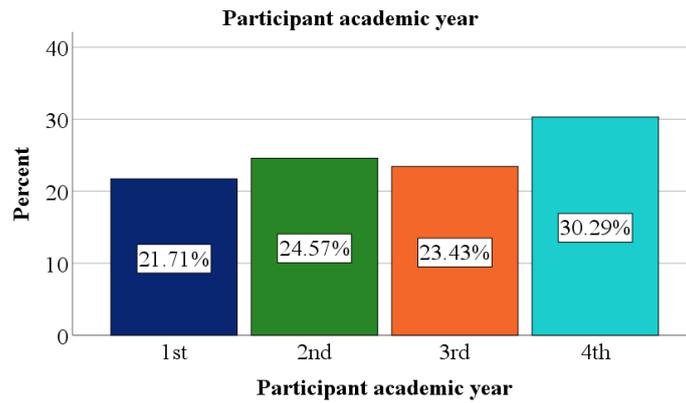


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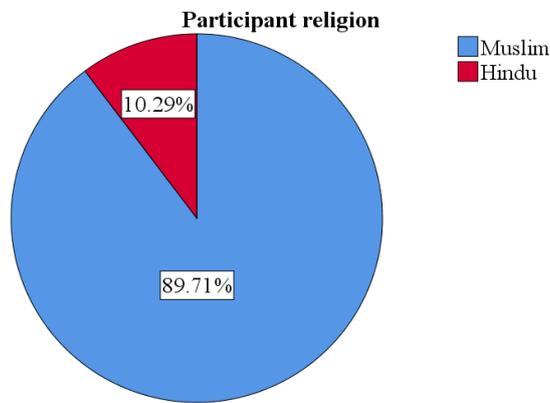


Figure no: 4

Table No: 4 Participant Accommodations

Participant Accommodation	Frequency	Percent
Hostler	161	92%
Day scholar	14	8%
Total	175	100%

**SECTION: B
ASSESSMENT OF GENERAL BELIEFS REGARDING VACCINATION**

Questions	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am convinced that marked vaccines are safe.	5(2.9%)	22(12.6%)	19(10.9%)	82(46.9%)	47(26.9%)
I am interested in learning more about vaccination	9(5.1%)	13(7.4%)	15(8.6%)	62(35.4%)	76(43.4%)
I believe it is important to check my vaccination status before travelling to a tropical country such as mexico or thailand.	17(9.7%)	10(5.7%)	13(7.4%)	80(45.7%)	55(31.4%)
National and international vaccine campaigns are cost effective.	8(4.6%)	12(6.9%)	24(13.7%)	84(48.0%)	47(26.9%)
Health science student are ethically obliged to be vaccinated against influenza.	5(2.9%)	12(13.1%)	23(13.1%)	91(52.0%)	44(25.1%)
Being vaccinated I has a positive influence on the behavior of my patients.	11(6.3%)	13(7.4%)	15(8.6%)	87(49.7%)	49(28.0%)
Student should be vaccinated to reduce the transmission of infection disease in hospital.	11(6.3%)	9(5.1%)	18(10.3%)	56(32.0%)	81(46.3%)
I should review my vaccination status before starting clinical training.	9(5.1%)	15(8.6%)	24(13.7%)	70(40.0%)	57(32.6%)
I should be vaccinated against influenza every year, even if it means messing hours of practical training.	13(7.4%)	21(12.0%)	35(20.0%)	72(41.1%)	34(19.4%)
I would be vaccinated irrespective of what my peers might do.	9(5.1%)	17(9.1%)	44(25.1%)	57(32.6%)	48(27.4%)

SECTION: C

ASSESSMENT OF GENERAL ATTITUDE REGARDING VACCINATION

Question	Strongly disagree	disagree	Neither agree nor disagree	agree	Strongly agree
I would recommend my patient adhere to the established vaccination calendar.	16(9.1%)	17(9.7%)	28(16.0%)	69(39.4%)	45(25.7%)
I would inform my patients of the effectiveness, indication, and side effects of each vaccine.	12(6.9%)	12(6.9%)	17(9.7%)	59(33.7%)	75(42.9%)
I would travel to a tropical country only after consulting an international vaccination center	14(8.0%)	20(11.4%)	32(18.3%)	59(33.7%)	50(28.6%)
I would be vaccinated against HIV when a vaccine becomes available and when it is shown to be acceptably safe effective.	12(6.9%)	14(8.0%)	19(10.9%)	72(41.1%)	58(33.1%)
If began vaccinated against influenza were readily accessible to me, I would be vaccinated every year.	6(3.4%)	17(9.7%)	23(13.1%)	75(42.9%)	54(30.9%)
I would be vaccinated against anything my doctor recommended, even if I have to pay for it.	15(8.6%)	12(6.9%)	23(13.1%)	76(43.4%)	49(28.0%)
When I began work at a hospital , I will make sure I will make sure I am vaccinated against everything preventable.	10(5.7%)	13(7.4%)	16(9.1%)	77(44.0%)	59(33.7%)
I will be vaccinated against influenza every year I have clinical training.	14(8.0%)	22(12.6%)	25(14.3%)	70(40.0%)	44(25.1%)

SECTION: D

ASSESSMENT OF OPPOSITE BELIEF AND ATTITUDE REGARDING VACCINATION

Question	Strongly agree	Agree	Neither agree nor disagree	disagree	Strongly disagree
I have doubts about the effectiveness of vaccine.	65(37.1%)	31(17.7%)	41(23.4%)	22(12.6%)	16(9.1%)
I would rather have influenza than be vaccinated against it.	61(34.9%)	40(22.9%)	28(16.0%)	36(20.6%)	10(5.7%)
It is not worth being vaccinated against a disease for which effective treatment.	51(29.1%)	51(29.1%)	22(12.6%)	39(22.3%)	12(6.9%)
Vaccinating the adult population is not important	68(38.9%)	52(29.7%)	18(10.3%)	24(13.7%)	13(7.4%)
If I am in good health, there is no need to be vaccinated.	69(39.4%)	38(21.7%)	17(9.7%)	27(15.4%)	24(13.7%)
I would only be vaccinated in exceptional circumstances (epidemics, health alerts etc.)	49(28.0%)	42(24.0%)	29(16.6%)	38(21.7%)	17(9.7%)

TABLE NO.4 CATEGORIES OF ACVECS SCALE

ACVECS Scale categories	DESCRIPTIVE STATISTICS						
	Frequency	Percent	Mean	Median	MODE	SE	SD
Positive	29	16.6%	2.5257	3.0000	3.00	.05777	.76427
Negative	25	14.3%					
Neutral	121	69.1%					
Total	175	100%					

DISCUSSION

The majority of participants in your study were Sindhi (77.7%), predominantly middle class (97.7%), and Muslim (89.7%), with most living in hostel accommodations (92%). This demographic distribution reflects the regional composition of PUMHS, where Sindhi students form the majority. Similar demographic dominance has been reported in local nursing student studies, where hostel residency is common due to limited commuting facilities. In contrast, international studies often report more diverse ethnic and religious representation, reflecting multicultural student populations. Regarding general beliefs Results show that most students agree or strongly agree that vaccines are safe (73.8%) and express strong interest in learning more about vaccination (78.8%). This aligns with findings from studies in India and Saudi Arabia, where health science students demonstrated positive beliefs about vaccine

safety and necessity. However, a minority (15.5%) expressed doubts, which is consistent with global literature highlighting persistent vaccine hesitancy even among medical students. Compared to Western studies, where skepticism is often linked to misinformation, your participants' hesitancy may be more influenced by cultural or religious narratives. Attitudinal findings shows that majority of students reported they would recommend vaccination to patients (65.1%), inform patients about vaccine effectiveness (76.6%), and ensure their own vaccination before hospital work (77.7%). These attitudes are comparable to studies in Europe and the U.S., where medical students generally support vaccination campaigns. However, your findings show slightly lower enthusiasm for annual influenza vaccination (65.1%), whereas Western studies often report higher compliance due to institutional mandates. This suggests

that while attitudes are positive, practical barriers (e.g., accessibility, cost, or academic workload) may reduce annual uptake. Interestingly, a significant proportion of students expressed negative beliefs: 54.8% doubted vaccine effectiveness. 57.8% preferred natural infection over vaccination. 68.6% believed vaccination is unnecessary if in good health. These results contrast sharply with studies in developed countries, where only a minority of health science students hold such views. My findings are closer to those reported in South Asian contexts, where cultural reliance on natural immunity and misconceptions about vaccine necessity remain prevalent. This duality—positive attitudes alongside strong hesitancy—highlights a gap between theoretical knowledge and personal belief. The ACVECS scale results showed that 69.1% of students were categorized as neutral, 16.6% positive, and 14.3% negative (Mean = 2.52 ± 0.76). This predominance of neutrality indicates uncertainty rather than strong vaccine confidence. In contrast, multinational European research demonstrated stronger positive inclination among nursing students. Attitudes and behaviors toward vaccination among nursing students from Spain and Portugal: A cross-sectional study. *BMC Nursing*, 24(1), 1012). The persistence of neutrality and hesitancy can be explained through the vaccine hesitancy framework, which emphasizes confidence, complacency, and contextual influences as major determinants.

CONCLUSION

This study concludes that nursing students at PUMHS generally demonstrate positive awareness and professional attitudes toward vaccination, particularly regarding vaccine safety, patient education, and self-protection before clinical exposure. Most participants acknowledged the importance of vaccines and showed willingness to recommend them to patients, which reflects an encouraging foundation for future nursing practice. However, despite these positive attitudes, a substantial level of vaccine hesitancy and contradictory beliefs was identified. A notable proportion of students doubted vaccine effectiveness, preferred natural immunity, and

believed vaccination to be unnecessary when in good health. The predominance of neutral scores on the ACVECS scale further indicates uncertainty and lack of strong conviction rather than informed confidence. Overall, the findings highlight a gap between professional responsibility and personal belief, suggesting that current knowledge and training are insufficient to fully address misconceptions. While students recognize vaccination as part of nursing duty, cultural beliefs, limited curricular emphasis, and inadequate exposure to evidence-based immunization education may be contributing to persistent hesitancy.

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