



E-ISSN: 2664-1666
P-ISSN: 2664-1658
www.communitynursing.net
IJARCHN 2022; 4(1): 29-32
Received: 23-10-2021
Accepted: 07-12-2021

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Knowledge, attitudes, concepts and acceptance of the Covid-19 vaccination among nursing students

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DOI: <https://doi.org/10.33545/26641658.2022.v4.i1a.95>

Abstract

Background: this study determined the knowledge, attitudes, concepts and acceptance of the covid-19 vaccination among nursing students in Rajasthan.

Materials and Methods: A web based, cross sectional, descriptive survey design was used to collect information from eligible nursing students in Rajasthan. Data collection was done from August to Nov. 2021 regarding demographic characteristics, knowledge, attitudes, concept and acceptance of the covid-19 vaccination & concerns using a self-administered survey.

Results: This study revealed that the positive attitude is found significant with above mean joint family (28.13%), nuclear family (33.93%) & vaccinated for COVID (20.33%), registered for vaccination (27.45%). not interested (1.69%). Superordinate concept was found significant with above mean vaccinated (48.81%), registered for vaccination (41.69%). not interested (2.03%).

Conclusion: Policy makers/Governments plays a vital role in developing strategies and increase trust is essential for implementing vaccination programs. Nursing students showed satisfactory vaccine acceptance rates. In this study, the level of good knowledge, positive attitude, and intention to accept the COVID-19 vaccine were 26.10%, 64.10%, and 59.30%, respectively. Thus, increased number of COVID-19 vaccination likelihood of controlling the COVID-19 pandemic.

Keywords: Knowledge, attitudes, concepts, nursing students, COVID-19 vaccine

Introduction

Coronavirus disease (COVID-19), is the highly contagious viral disease caused by severe acute respiratory coronavirus 2 (SARS-CoV-2), had a catastrophic effect on the world's demographics resulting in more than 5.3 million deaths worldwide, emerging as the most consequential global health crisis since influenza in 1918. (1) COVID-19 primarily affects the respiratory system with a range of symptoms from mild rhinorrhoea to severe respiratory distress syndrome [2,3]. In general mortality rates are higher with individuals having hypertension, obesity, diabetes, and kidney disease [4,5].

Several variants of SARS-CoV-2 have been described during the course of this pandemic based on the recent epidemiological update by the WHO, as of December 11, 2021, five SARS-CoV-2 VOCs have been as followed-

- **Alpha (B.1.1.7):** first variant was described in the United Kingdom (UK) in late December 2020
- **Beta (B.1.351):** first reported in South Africa in December 2020
- **Gamma (P.1):** first reported in Brazil in early January 2021
- **Delta (B.1.617.2):** first reported in India in December 2020
- **Omicron (B.1.1.529):** first reported in South Africa in November 2021

A survey was done among nursing students in universities of seven countries (Greece, Albania, Cyprus, Spain, Italy, the Czech Republic and Kosovo) in 2021 and reported a vaccine acceptability rate of 43.8%. The primary factors that promoted the willingness for vaccination were male gender, lack of experience working in a healthcare setting during the pandemic, vaccination for influenza, trust in doctors, government and experts, and high level of knowledge and fear of COVID-19. Findings of the study reveals that 45.3% of nursing students and 60.3% of full-time teachers were intended for vaccination and the main reasons for not being vaccinated were doubts regarding vaccine safety and side effects [6].

Social endorsement and efforts against hesitation regarding the COVID-19 vaccination are essential, especially in limited-resource settings. This will promote vaccination and establish trust between the general population, health authorities and policymakers, leading to better control of the pandemic and reduction in mortality.

Material and Methods

- a) **Research Approach-** Non-Experimental Quantitative research.
- b) **Research Design-** Cross Sectional Descriptive Online Survey
- c) **Setting of the Study-** web based study conducted among the Nursing Students in Rajasthan.
- d) **Participant and Procedure-** A Semi structured questionnaire designed and incorporated into the Google Survey tool (Google Form). A sharable link generated and disseminated between Nursing Students. The link also shared with investigator and research assistance. Data's confidentiality maintained.
- e) **Sample Technique-** Convenient Sampling Technique.
- f) **Sample Size -** the Sample size was 295
- g) **Inclusion Criteria**
 1. Students of School & College of Nursing in Rajasthan.
 2. Age More than 18 Years
- h) **Exclusion Criteria**
Students who have not completed all sections/ Responses in Google form.
- i) **Variables under Study**
 - i. Dependent Variable: The knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students.
 - ii. Independent Variables: Age, Gender, Marital Status, Educational Status, family type, family monthly income, Current Residence & Vaccination Status.
- j) **Description of the Tool:** - A semi-structured and self-reported questionnaire containing informed consent along with 4 sections. (I.e. Socio-demographic,

Knowledge, Attitude and Concepts). Multiple linear regression used to determine the variables predicting knowledge and attitudes.

- i. **Socio-Demographic Data:** Age, Gender, Marital Status, Education, family type, family monthly income, Current Residence.
- ii. **Knowledge, Attitude and Concept:** to assess the level of knowledge, attitudes and concept of respondents with 15 questions.
 - Knowledge section will be comprised of 5 items as multiple choice.
 - Attitude section will be comprised of 5 items with 5-point Likert scale.
 - (0= Strongly Disagree, 1= Disagree Undecided, 2 = Undecided, 3= Agree, 4=Strongly Agree)
 - Concept: - participant's concept towards the COVID Vaccine including 5 items response as Yes/No.
- k) **Criterion Measures:** knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students was assessed using Self structured Questionnaire. Score graded as below 50% poor, 50% to 75% average and above 75% was considered good.
- l) **Reliability of the Tool:** Reliability was assessed by collecting data from 30 nursing students by test retest method using Spearman's Brown Prophecy formula. The reliability was $r = 0.78$. It was statistically significant and thus reliable.
- m) **Statistical Analysis:** The data obtained was analyzed using descriptive and inferential statistics. Descriptive statistics include calculation of Mean, Median, and Standard deviation to describe the measures of central tendency of the data. Inferential statistics was done using Pearson's chi square test to find the relationship of knowledge attitude and concept with selected variables p value less than or equal at 0.05 level was considered statistically significant.

Result (11 Bold)

Section - I Assessment in Total content area

Table 1: Total knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students –

Area	Maximum possible score	Maximum obtained score	Minimum obtained score	Mean	Mean%	Median	SD
Knowledge	5	5	0	2.79	55.80%	3	1.10
Attitude	20	20	0	15.33	76.65%	17	4.76
Concept	5	5	1	3.73	74.60%	4	0.90

Table 2: Total score graded –

S.no	Criteria of measure	Level of Knowledge	Level of Attitude	Level of concept
1.	Below 50%	Poor 116(39.32%)	Negative 34(11.50%)	Subordinate 18(6.20%)
2.	50 to 75%	Average 102 (34.58%)	Neutral 72(24.40%)	Basic 102(34.50%)
3.	Above 75%	Good 77(26.10%)	Positive 189(64.10%)	Superordinate 175(59.30%)

Section- II Assessment in sub content area

Table 3: Sub content area

S. No.	Tool	Mean Score	Mean %	Rank Order
Knowledge				
1.	Awareness about Mass COVID Vaccination in India	0.72	72.6%	5
2.	COVID virus effect on Bat	0.49	49.7%	10
3.	mode of transmission for the COVID Virus	0.29	29.4%	14
4.	Route of administration for COVID vaccine	0.67	67.2%	6

5.	Complications of the Corona virus	0.59	59.5%	7
Attitude				
6.	Vaccination is not a shield against COVID but can reduce the severity	0.45	45.4%	12
7.	Lockdown is the last possible option to control COVID surge	0.50	50.9%	8
8.	COVID Incidence can be reduced by a well-planned vaccination drive	0.59	59.5%	7
9.	Encouragement to take the COVID vaccination	0.78	78.2%	4
10.	COVID Vaccines are effective against new variants of Corona Virus	0.45	45.5%	11
Concept				
11.	Safety of COVID vaccine	0.88	88.2%	3
12.	Use of social distancing, wearing a mask to stop COVID transmission	0.98	98.3%	1
13.	The COVID vaccine is free for all in Government Hospitals	0.95	95.6%	2
14.	Postings in COVID ICU/Ward/Daycare duties	0.41	41.2%	13
15.	Vaccination status	0.50	50.3%	9

Section- III: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with selected variables

Table 4: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with Age –

Age in Years	N	Above Mean			Below Mean		
		Knowledge	Attitude	Concept	Knowledge	Attitude	Concept
18-20	136(45.9%)	82	79	72	53	56	63
21-23	121(40.9%)	72	79	74	49	42	47
24-26	17(6.1%)	12	15	13	5	02	04
Above 26 years	21(6.8%)	13	15	15	8	06	06
Total	295	179	188	174	115	106	120

Table 5: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with Gender-

Gender	N	Above Mean			Below Mean		
		Knowledge	Attitude	Concept	Knowledge	Attitude	Concept
Male	222	134	137	131	88	85	91
Female	73	45	52	29	28	21	44
Total-	295	179	189	160	116	106	135

Table 6: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with Marital Status –

Marital Status	N	Above Mean			Below Mean		
		knowledge	Attitude	concept	knowledge	Attitude	concept
Married	35	19	19	26	16	16	9
Unmarried	260	160	170	149	100	90	111
Total	295	179	189	175	116	106	120

Table 7: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with education –

Education	N	Above Mean			Below Mean		
		Knowledge	Attitude	Concept	Knowledge	Attitude	Concept
G.N.M.	12	7	7	7	5	5	5
B.Sc (N)	264	159	167	153	105	97	111
P.BSc(N)	06	4	6	4	2	0	2
M.Sc (N)	13	9	9	11	4	4	2
Total-		179	189	175	116	106	120

Table 8: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with Type of Family –

Family Type	N	Above Mean			Below Mean		
		Knowledge	Attitude	Concept	Knowledge	Attitude	Concept
Nuclear	152	99	106(35.93%)	92	53	46(15.59%)	60
Joint	143	81	83(28.13)	83	62	60(20.33%)	60
Total-		180	189	175	115	106	120

Table 9: Relationship between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students with Vaccination Status –

Vaccination Status	N	Above Mean			Below Mean		
		Knowledge	Attitude	Concept	Knowledge	Attitude	Concept
Yes	148	98	60(20.33%)	144(48.81%)	50	88(29.83%)	4(1.35%)
Registered for vaccine	132	73	81(27.45%)	123(41.69%)	59	51(17.28%)	9(3.05%)
Not interested	15	8	5(1.69%)	6(2.03%)	7	10(3.38%)	9(3.05%)
Total-	295	179	146	273	116	149	22

Table 10: between knowledge, Attitudes, Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students level of Significance with selected Variables –

Variable	Level of Significance	df	Chi square value			p-value		
			Knowledge	Attitude	Concept	knowledge	Attitude	concept
Age	0.05	3	0.7793	6.6798	5.5143	.8544 (not Significant)	.0828 (not Significant)	.1377 (not Significant)
Gender	0.05	3	0.0379	2.1633	3.6848	.8455 (not Significant)	.1413 (not Significant)	.0549 (not Significant)
Marital Status	0.05	3	0.6801	1.6507	3.6848	.4095 (not Significant)	.1988 (not Significant)	.0549 (not Significant)
Education Status	0.05	3	0.5389	1.8112	3.7901	.9102 (not Significant)	.6124 (not Significant)	.2850 (not Significant)
Family Type	0.05	3	2.2318	4.3775	0.1885	.1351 (not Significant)	.0364 Significant	.6642 (not Significant)
Vaccination Status	0.05	3	3.84	13.7531	64.9292	.1466 (not Significant)	.0010 significant	0.0001 significant

Table 10 depicts that level of Knowledge was not significant with any selected variable, Attitudes was significant with Family type and Vaccination status. Concepts and Acceptance of the Covid-19 Vaccination among Nursing Students was significant with vaccination status as level of significance was 0.05.

Conclusion

At present vaccination is the only option that can reduce severity and mortality rate due to COVID pandemic. Door to door vaccination drive is the need for society at present. Participation of stakeholders will help to promote vaccination drive. Knowledge campaign for COVID can be organized and citizens can be prepared for more coming waves. Government should focus on health research. Promotion of research & resources will reform health industry in India.

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