IJBPAS, March, Special Issue, 2025, 14(3): 472-480

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

A STUDY TO ASSESS THE KNOWLEDGE, ATTITUDE AND PRACTICE ON INFECTION CONTROL MEASURES REGARDING PATIENTS WITH COVID-19 AMONG NURSES IN SRMMCH

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Received 10th Dec. 2024; Revised 5th Jan. 2024; Accepted 1st Feb. 2025; Available online 15th March 2025

https://doi.org/10.31032/IJBPAS/2025/14.3.1055

ABSTRACT

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by the virus SARS-CoV-2. The first known case was identified in Wuhan, China, in December 2019.1 Nurses must be equipped with good knowledge about the pathogen and disease to put up a robust fight against the virus. The aim of the study is to assess the knowledge, attitude and practice on infection control measures regarding patients with covid-19 among nurses in SRMMCH. A cross-sectional, online questionnaire-based study was conducted. A total of 80 Nurses in hospitals completed the questionnaire. 100% of the nurses had adequate knowledge COVID-19. 93.75% of the participants had a Favourable attitude toward COVID-19, and 72.5% of the participants were practicing appropriately most of the time. There is no association between the level of knowledge, attitude and practice on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables. The mean score of knowledge was 13.76±0.66,

mean score of attitude was 22.45±2.13 and the mean score of practice was 40.42±7.48. The calculated Karl Pearson's Correlation value of r = 0.355 between knowledge and attitude, r = 0.438 between knowledge and practice and r = 0.426 between attitude and practice shows a positive correlation which was statistically significant at p<0.001 level which clearly infers that when knowledge on infection control measures regarding patients with COVID-19 among nurses increases then ultimately their attitude and practice towards it also increases.

Keywords: Knowledge, Attitude, Practice, Infection control, Covid-19

INTRODUCTION

Coronaviruses (CoVs), a large family of single-stranded RNA viruses, can infect a wide variety of animals, including humans, causing respiratory, enteric, hepatic and neurological diseases **[1, 2]**. The World Health Organization (WHO) on March 11, 2020, has declared the novel coronavirus (COVID-19) outbreak a global pandemic **[3]**.

A study was conducted to assess the Knowledge, Attitude, and Practices Concerning Covid-19 Preventive Measures Among Healthcare Providers in Jordan. The majority of the participants had good knowledge (81.4%), good attitude (87.1%), and satisfactory practice (77.9%). Knowledge was significantly associated with attitude and practice ($p < .01$), and attitude was significantly associated with practice ($p < .01$). There was a statistically significant difference in knowledge, attitude, and practice depending on the existence of infection control policy, availability of PPE, and receiving infection control training ($p < .05$). Predictors of COVID-19 practice included knowledge and attitude, PPE availability, and receiving training on infection control ($p < .05$). This result might suggest that there are some gaps between knowledge, attitudes, and practices of COVID-19 preventive measures. Lack of PPE and inadequate infection control training could contribute to this gap **[4]**.

One study analysed healthcare workers' (HCWs) knowledge, practices, and attitudes regarding coronavirus disease 2019 (COVID-19). A cross-sectional survey was conducted from February 4th to February 8th, 2020, involving a total of 1357 HCWs across 10 hospitals in Henan, China. Of those surveyed, 89% of HCWs had sufficient knowledge of COVID-19, more than 85% feared self-infection with the virus, and 89.7% followed correct practices regarding COVID-19. In addition to knowledge level, some risk factors including work experience and job category influenced HCWs' attitudes and practice

concerning COVID-19. Measures must be taken to protect HCWs from risks linked to job category, work experience, working hours, educational attainment, and frontline HCWs **[5]**.

Healthcare workers are among the highest risk group for infection with COVID-19 and have at least a threefold higher rate of infection with COVID-19 as compared to the general public **[6-10]**.

Knowledge, attitude and practices of Nurses about COVID-19 infection can be improved by conducting relevant interventional programs. So this study was done to assess the knowledge, attitude and practice on infection control measures regarding patients with covid-19 among nurses in SRMMCH.

METHODOLOGY:

The research approach adopted for the present study is Quantitative approach. A cross-sectional, online questionnaire-based study was conducted. The study was conducted at SRM Medical College Hospital & Research Centre. Purposive sampling technique was used. The data collection instruments used in this study was divided into two section. Section 1, included items about the participants' sociodemographic characteristics. Section 2 consisted of structured questionnaire on Knowledge (15 items) and attitude (5items) and practice (10items). An online questionnaire was prepared using a Google form. A total of 80 Nurses in hospitals completed the questionnaire. The raw data was collected in excel sheet and analysis was done.

RESULTS AND DISCUSSION:

100% of the nurses had adequate knowledge on COVID-19. 93.75% of the participants had a favourable attitude toward COVID-19, and 72.5% of the participants were practicing appropriately most of the time.

The mean score of knowledge was 13.76±0.66, mean score of attitude was 22.45±2.13 and the mean score of practice was 40.42±7.48. The calculated Karl Pearson's Correlation value of $r = 0.355$ between knowledge and attitude, $r = 0.438$ between knowledge and practice and $r = 0.426$ between attitude and practice shows a positive correlation which was statistically significant at $p<0.001$ level which clearly infers that when knowledge on infection control measures regarding patients with COVID-19 among nurses increases then ultimately their attitude and practice towards it also increases. There is no association between the level of knowledge, attitude and practice on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables.

STATISTICAL ANALYSIS:

Table 1: Frequency and percentage distribution of demographic variables of nurses (N = 80)

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
20 – 29	50	62.5
30 – 39	21	26.2
≥40	9	11.3
Sex		
Male	1	1.3
Female	79	98.7
Occupation		
Staff nurse	57	71.2
Floor nurse	5	6.3
Charge nurse	18	22.5
Years of experience		
<5	48	60.0
5 – 10	14	17.5
>10	18	22.5
Category of work		
Frontline worker	69	86.3
Non – Frontline worker	11	13.7
Source of information		
Television/Social media	44	55.0
Website of hospital / Government	29	36.2
Friends	7	8.8

Table 2: Frequency and percentage distribution of level of knowledge on infection control measures regarding patients with COVID-19 among nurses (N = 80)

Level of Knowledge	No.	%
Inadequate Knowledge (≤50%)	-	-
Moderately Adequate Knowledge (51 – 75%)	-	
Adequate Knowledge (>75%)	80	100.0

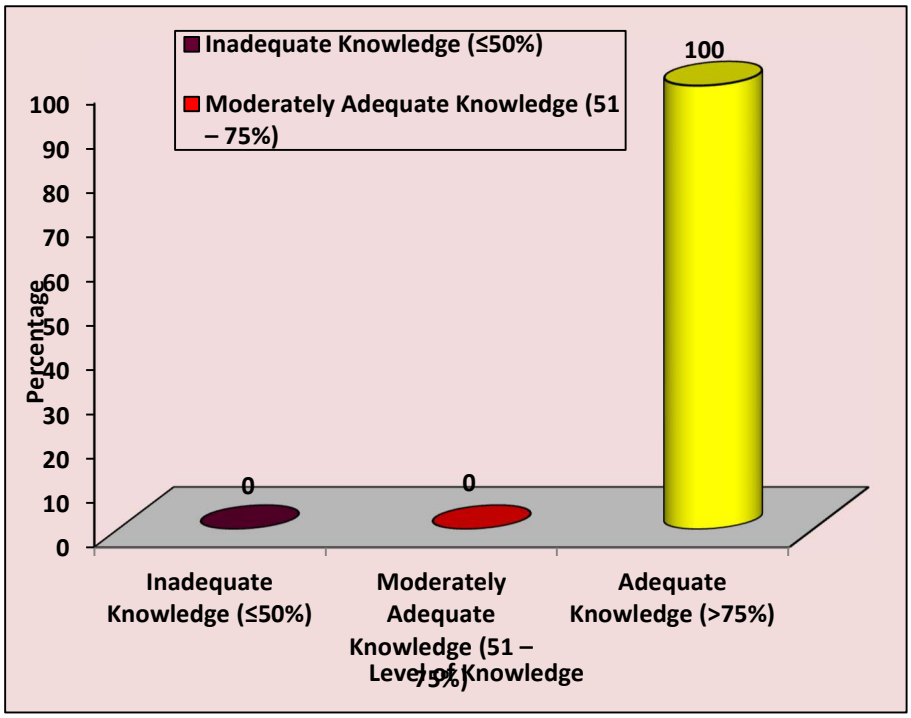

Figure 1: Percentage distribution of level of knowledge on infection control measures regarding patients with COVID-19 among nurses

Table 3: Frequency and percentage distribution of level of attitude on infection control measures regarding patients with COVID-19 among nurses (N = 80)

Level of Attitude	No.	%
Unfavourable Attitude (≤50%)	-	-
Moderately Favourable Attitude (51 – 75%)	5	6.25
Favourable Attitude (>75%)	75	93.75

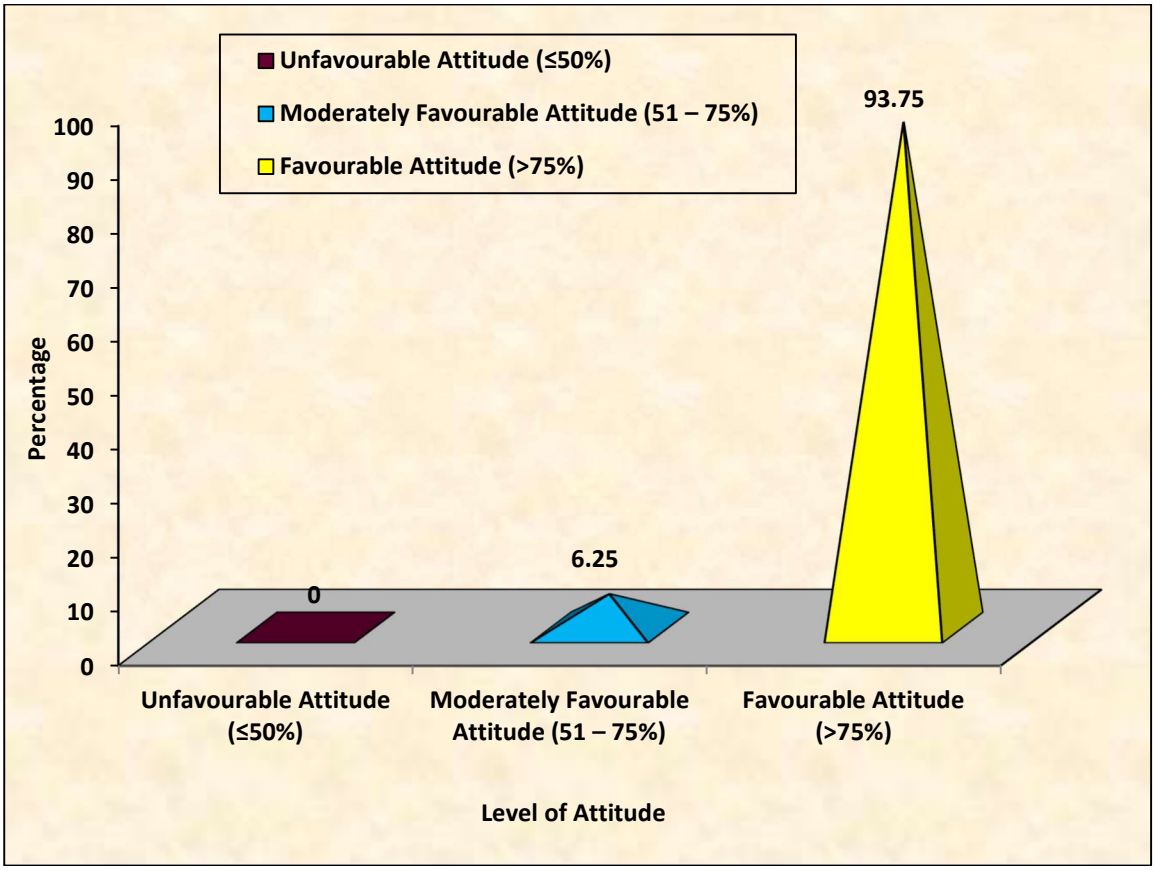

Figure 2: Percentage distribution of level of attitude on infection control measures regarding patients with COVID-19 among nurses

Table 4: Frequency and percentage distribution of level of practice on infection control measures regarding patients with COVID-19 among nurses (N = 80)

Level of Practice	No.	%
Poor Practice (≤50%)	2	2.5
Moderate Practice (51 – 75%)	20	25.0
Good Practice (>75%)	58	72.5

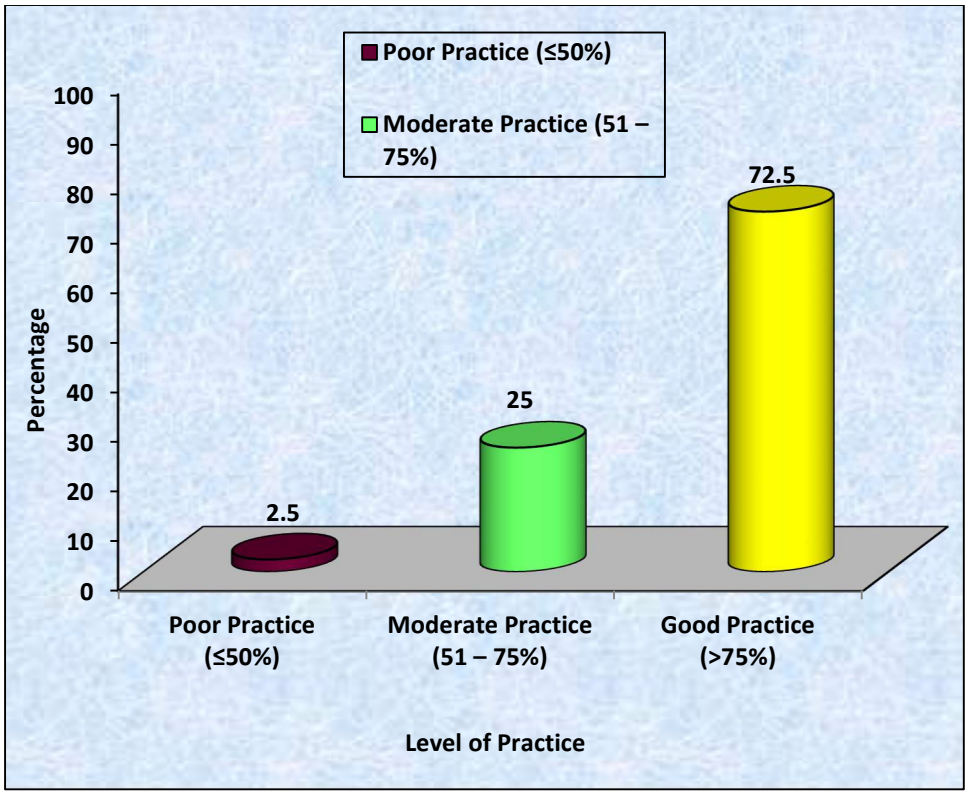

Figure 3: Percentage distribution of level of practice on infection control measures regarding patients with COVID-19 among nurses

Table 5: Correlation between knowledge, attitude and practice on infection control measures regarding patients with COVID-19 among nurses (N = 80)

Variables	Mean	S.D	Karl Pearson's Correlation 'r' & p-Value
Knowledge	13.76	0.66	r=0.355
Attitude	22.45	2.13	p=0.001, S***
Knowledge	13.76	0.66	r=0.438
Practice	40.42	7.48	p=0.0001, S***
Attitude	22.45	2.13	r=0.426
Practice	40.42	7.48	p=0.0001, S***

***p≤0.001, S – Significant

The **Table 5** shows that the mean score of knowledge was 13.76±0.66, mean score of attitude was 22.45±2.13 and the mean score of practice was 40.42±7.48. The calculated Karl Pearson's Correlation value of r = 0.355 between knowledge and attitude, r = 0.438 between knowledge and practice and r = 0.426 between attitude and practice shows a positive correlation which was statistically significant at p<0.001 level which clearly infers that when knowledge on infection control measures regarding patients with COVID-19 among nurses increases then ultimately their attitude and practice towards it also increases.

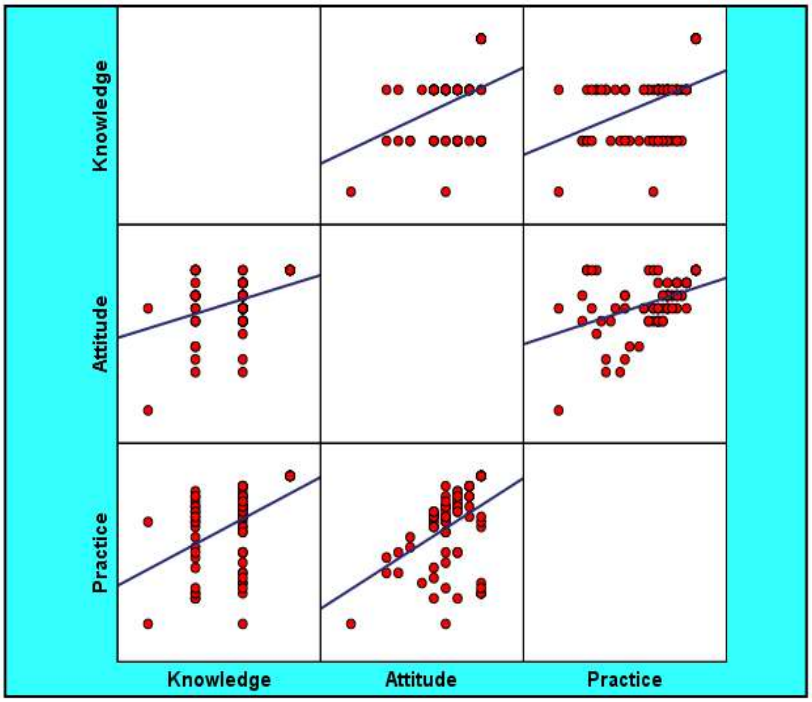

Figure 4: Correlation between knowledge, attitude and practice on infection control measures regarding patients with COVID-19 among nurses

Table 6: Association of level of knowledge on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables (N = 80)

Demographic Variables	≤Mean		Mean		Chi-Square Value
	No.	%	No.	%	
Age in years					χ^2=0.836
20 – 29	15	18.8	35	43.8	d.f=2
30 – 39	8	10.0	13	16.2	p = 0.658
≥40	2	2.5	7	8.8	N.S
Sex					χ^2=0.460
Male	25	31.3	54	67.5	d.f=1
Female	0	0	1	1.2	p = 0.497 N.S
Occupation					χ^2=0.976
Staff nurse	19	23.8	38	47.5	d.f=2
Floor nurse	2	2.5	3	3.8	p = 0.614
Charge nurse	4	5.0	14	17.5	N.S
Years of experience					χ^2=1.117
<5	17	21.2	31	38.8	d.f=2
5 – 10	3	3.8	11	13.8	p = 0.572
>10	5	6.2	13	16.2	N.S
Category of work					χ^2=1.198
Frontline worker	20	25.0	49	61.2	d.f=1
Non – Frontline worker	5	6.2	6	7.5	p = 0.274 N.S
Source of information					χ^2=0.499
Television/Social media	13	16.2	31	38.8	d.f=2
Website of hospital / Government	9	11.2	20	25.0	p = 0.779
Friends	3	3.8	4	5.0	N.S

N.S – Not Significant

There is no association between the level of knowledge on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables.

Table 7: Association of attitude on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables (N = 80)

Demographic Variables	Moderately Favourable		Favourable		Chi-Square Value
	No.	%	No.	%	
Age in years					χ^2=0.448
20 – 29	3	3.8	47	58.8	d.f=2
30 – 39	1	1.2	20	25.0	p = 0.799
≥40	1	1.2	8	10.0	N.S
Sex					χ^2=0.068
Male	0	0	1	1.2	d.f=1
Female	5	6.2	74	92.5	p = 0.795
					N.S
Occupation					χ^2=0.405
Staff nurse	4	5.0	53	66.2	d.f=2
Floor nurse	0	0	5	6.2	p = 0.816
Charge nurse	1	1.2	17	21.2	N.S
Years of experience					χ^2=1.304
<5	4	5.0	44	55.0	d.f=2
5 – 10	0	0	14	17.5	p = 0.521
>10	1	1.2	17	21.2	N.S
Category of work					χ^2=0.850
Frontline worker	5	6.2	64	80.0	d.f=1
Non – Frontline worker	0	0	11	13.8	p = 0.356
					N.S
Source of information					χ^2=2.789
Television/Social media	1	1.2	43	53.8	d.f=2
Website of hospital / Government	3	3.8	26	32.5	p = 0.248
Friends	1	1.2	6	7.5	N.S

N.S – Not Significant

There is no association between the attitude on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables.

Table 8: Association of practice on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables (N = 80)

Demographic Variables	Poor		Moderate		Good		Chi-Square Value
	No.	%	No.	%	No.	%	
Age in years							χ^2=2.709
20 – 29	1	1.2	15	18.8	34	42.5	d.f=4
30 – 39	1	1.2	4	5.0	16	20.0	p = 0.608
≥40	0	0	1	1.2	8	10.0	N.S
Sex							χ^2=3.038
Male	0	0	1	1.2	0	0	d.f=2
Female	2	2.5	19	23.8	58	72.5	p = 0.219
							N.S
Occupation							χ^2=8.121
Staff nurse	1	1.2	19	23.8	37	46.2	d.f=4
Floor nurse	0	0	0	0	5	6.2	p = 0.087
Charge nurse	1	1.2	1	1.2	16	20.0	N.S
Years of experience							χ^2=6.209
<5	1	1.2	16	20.0	31	38.8	d.f=4
5 – 10	1	1.2	2	2.5	11	13.8	p = 0.184
>10	0	0	2	2.5	16	20.0	N.S
Category of work							χ^2=0.345
Frontline worker	2	2.5	17	21.2	50	62.5	d.f=2
Non – Frontline worker	0	0	3	3.8	8	10.0	p = 0.841
							N.S
Source of information							χ^2=4.157
Television/Social media	0	0	12	15.0	32	40.0	d.f=4
Website of hospital / Government	2	2.5	7	8.8	20	25.0	p = 0.385
Friends	0	0	1	1.2	6	7.5	N.S

N.S – Not Significant

There is no association between the practice on infection control measures regarding patients with COVID-19 among nurses with their selected demographic variables.

CONCLUSION

The study concludes that when knowledge on infection control measures regarding patients with COVID-19 among nurses increases then ultimately their attitude and practice towards it also increases.

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