

Knowledge Attitude and Practices regarding COVID-19 among Nurses Working in Teaching Hospital, Pokhara, Nepal

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ABSTRACT

Background: Coronavirus disease 2019 (COVID-19) is a highly infectious respiratory disease that has affected 216 countries globally. In this pandemic, nurses are in the frontline in catering infected patients. Protection of health care providers and prevention of intra-hospital transmission are important aspects in epidemic response that requires updated knowledge, positive attitude and good practices among health care providers. Therefore, the aim of the study was to identify the knowledge, attitude and practices among nurses towards COVID-19.

Methods: Quantitative, cross sectional research design was used to conduct the study among 120 nurses in Manipal Teaching Hospital, Pokhara. Probability- simple random sampling was done and self-administered questionnaire was used for data collection from 29th May to 12th June. Descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, t-test, ANOVA and Karl Pearson coefficient of correlation test were used to analyze the data using IBM SPSS Version 20.

Results: The mean knowledge, attitude and practice score were 14.05 ± 3.74 , 30.56 ± 3.72 and 7 ± 1.59 respectively. Less than half (47.5% and 43.3% respectively) had good knowledge and practice and 50.8% had positive attitude towards COVID-19. Statistically significant differences were observed in working department in regard to knowledge ($p < 0.001$). Positive correlation was observed in attitude and practice score ($p = 0.001$).

Conclusions: Majority of the nurses had good to moderate knowledge. However, practice was poor and only half of the nurses had positive attitude towards COVID-19. The study emphasizes the greater need of motivation and reassurance to promote positive attitude that may eventually lead to safe practices.

Key words: COVID-19; Health workers; Knowledge; Attitude; Practice; Nepal; Nurses.

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INTRODUCTION

COVID-19 is a highly infectious disease known to cause respiratory infections in human.^{1,2} WHO announced COVID-19 a pandemic affecting 216 countries globally. The confirmed cases of COVID-19 have globally surpassed 9,532,128 with 4,85,122 confirmed deaths till date.³ Nepal is a land-locked country, sandwiched between China; first epicenter and India; where the number of confirmed cases are 473,105 already.^{3,4} Geographic location and socio-economic relation with these countries have laid Nepal another possible vulnerable area for COVID-19.⁵ In Nepal, there are 10,099 confirmed cases with 24 deaths till date.³

In this global pandemic, nurses are primarily involved in catering patients of this highly transmittable pathogen that has posed serious occupational health risk to them.⁶ Data gathered by International Council of Nurses from 30 countries suggest that at least 90,000 healthcare workers have been infected, and more than 260 nurses have died already.⁷ In Nepal, six nurses are reported to be infected so far.⁸ Protection of HCPs and prevention of intra-hospital transmission are important aspects in epidemic response and this requires that HCPs must have updated knowledge.⁹ Moreover preparedness to fight this pandemic starts with knowledge, positive attitude and safe practices.¹⁰ Therefore the study aims to identify the knowledge, attitude and practices among the nurses.

MATERIALS AND METHODS

Quantitative, cross-sectional study was conducted among 120 nurses working in the Manipal Teaching Hospital (MTH), Pokhara, Nepal. Based on previous study, sample size of 112 was determined by taking prevalence of good to moderate knowledge (82.15%) regarding COVID-19 among health workers in Nepal at 95% confidence interval.^{10,11} Nurses working in different inpatient and sample collection department were selected by probability simple random sampling technique (lottery method). Self-administered questionnaires were developed by the researchers on the basis of extensive literature review and

guidelines provided by WHO. After an initial draft of questionnaires designed, the instrument was sent to professionals from nursing to give their expert opinion. Reliability in terms of internal consistency of the tool was tested with Cronbach's α (0.744).

The research instrument consisted of four parts in which first part included questions related to socio demographic and job-related characteristics. Second part included 12 multiple choice questions (two multiple response) regarding knowledge of COVID-19. Each appropriate response was given one score and inappropriate response was given zero. The total knowledge score varied between zero and 20 and a cut off level of $<50\%$ was considered as poor knowledge (0-9), 10 to 14 as moderate and $\geq75\%$ as good knowledge (15 to 20). Further third part included five points Likert scale with ten statements related to attitude with higher scores denoting a positive and lower score indicating negative attitude. Whereas statement number 1, 2 and 5 rated in a reverse order. A mean score of >30 (answering for strongly agree or agree) was considered as positive attitude and a score <30 was considered negative attitude (answering strongly disagree or disagree or not sure). Part four included checklist with ten questions related to practice. The response 'Yes' was given one score whereas 'No' and 'Sometime' were given zero. Those who score ≥8 was classified as good practice and less than that as poor practice.

The collected data were entered into IBM SPSS version 20. Descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, t- test, ANOVA test and Karl Pearson coefficient of correlation test were used to analyze the data. The level of significance was considered at p value <0.05 . Ethical clearance was obtained from the Institutional Review Committee of Manipal College of Medical Sciences (MCOMS), Pokhara, Nepal. Informed written consent was taken from each respondent. Anonymity was maintained during data collection. After data collection, health information regarding COVID-19 was provided based on their queries.

RESULTS

The findings of the study demonstrated that majority (84.2%) of the nurses were between the age group 20-30 years with mean age 26.02 ± 5.25 years. More than half (57.5%) were single and 66.6% were working in the general department. Regarding qualification 79.2% had PCL level qualification and the work experience was equal to or less than five years in 75% of the nurses. Social media (81.7%) was the highest reported source of information regarding COVID-19 among the nurses (Table 1).

Almost all the nurses (98.3%) had knowledge regarding its causative organism. However only 25% of the nurses knew that consumption of infected meat products can also transmit illness (Table 2). Findings demonstrated that majority of the nurses (98.4%, 91.7% respectively) expressed their fear of transmitting infection to family and were worried of being infected. Many of the nurses (91.7%, 85.8% respectively) stated that the medical supplies, personal protective equipment and preparedness are not sufficient to manage outbreak. Further, only 55% stated that they can confidently participate in the care of COVID-19 infected and suspicious patient (Table 3). The present study found that 97.5% of nurses used to cover nose and mouth while sneezing and coughing. However only 29.2% used to dispose mask when it becomes wet or at least eight hours after wearing (Table 4).

In this study we found that less than half of the nurses (47.5%) had good knowledge and the mean knowledge score was 14.05 ± 3.74 (Figure 1).

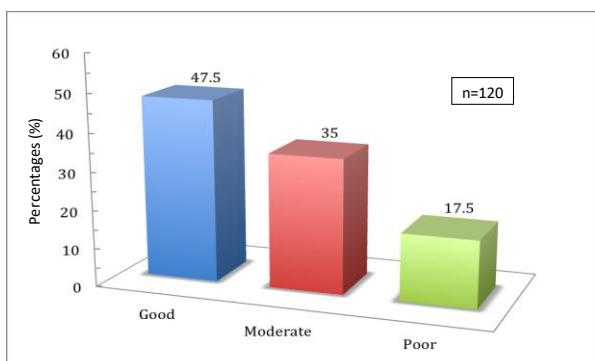


Figure 1: Bar diagram representing level of Knowledge among nurses

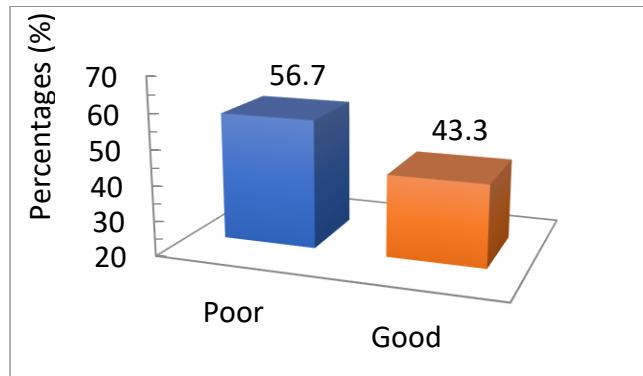


Figure 2: Bar diagram representing level of practices among nurses

Figure 2 represents that only 43.3% had good practice and the mean practice score was 7 ± 1.59 .

This study found that almost equal percentage of the respondents (50.8% and 49.2% respectively) had positive and negative attitude regarding covid-19 and the mean attitude score was 30.56 ± 3.72 .

We found statistically significant differences in working department ($p < 0.001$) in regard to knowledge. Nurses working in CCU were found to have good knowledge than those working in general department (Table 5).

Attitude and Practice of nurses towards COVID-19 was found to have significant correlation in Karl Pearson Coefficient of correlation test (0.29, $P=0.001$).

DISCUSSION

Nurses play an integral role in the healthcare industry; providing care to the patients and carrying out leadership roles.¹² During this pandemic, it is very important to focus on their knowledge, attitude, and practices in order to effectively deal with infected patients with minimum risks. There are very few investigations that have been particularly conducted to assess knowledge, attitude and practices of nurses towards COVID-19. In view of this, the difference in our findings has been compared with other related content as health workers.

Table 1: Socio-demographic and Job-Related Characteristics of Nurses

Socio-demographic Variables	Number	Percentage (%)
Age in years		
20-30	101	84.2
31-40	15	12.5
41 and above	4	3.3
Mean age \pm SD	26.02 \pm 5.25	
Minimum/Maximum age	20/47	
Marital status		
Single	69	57.5
Married	51	42.5
Qualification		
ANM Level	11	9.2
PCL Level	95	79.2
BN/BNS/B.Sc	14	11.6
Work experience		
\leq 5 years	90	75
>5 to 10 years	14	11.7
>10 years	16	13.3
Department		
General	80	66.6
Critical Care Unit	40	33.3
Sources of information regarding Covid-19*		
Social media	98	81.7
Television/radio	69	57.5
Seniors/colleagues	51	42.5
Newspaper	31	25.8
Poster/pamphlets	19	15.8

* Multiple responses; Critical Care Unit (CCU): ICU, Cardiac care unit, Neuro ICU, Post op.

Table 2: Distribution of responses in knowledge item regarding COVID-19

Responses	Right answers (n)	Percentage (%)
Causative organism	118	98.3
Sources of infection	87	72.5
Incubation period	105	87.5
Modes of transmission*		
Droplets	110	91.7
Consuming infected meat products	30	25
High risk group	91	75.8
Most common sign and symptoms	112	93.3
Specimen collected for diagnosis	113	94.2
Confirmatory test	95	79.2
Treatment of choice	97	80.8
Most common complication	91	75.8
Precautionary measures*		
Thorough hand washing	106	88.3
Avoid touching face	45	37.5
Principle to follow	113	94.2

* Multiple responses

Table 3: Distribution of Responses (%) in Attitude item

Responses	Strongly agree/ Agree	Not sure	Disagree/S trongly disagree	Mean±SD
Worried about being infected.	91.7	6.7	1.6	1.63±0.72
Fear of transmitting to family members	98.4	1.7	-	1.35±0.51
Hand washing protect from virus.	70.8	28.3	0.8	3.97±0.79
Well-fitting face mask, effective in prevention.	61.7	25	13.3	3.67±1.03
Lockdown, not an effective way to control infection.	34.1	12.5	53.4	3.33±1.40
Following universal precaution can prevent transmission.	79.7	15	5	3.94±0.83
Sufficient institutional preparedness is present.	14.2	29.2	56.6	2.34±1.13
Sufficient medical supplies and PPE are provided.	8.4	24.2	67.5	2.20±1.001
Could confidently participate in care of infected and suspicious patient.	55	39.2	5.8	3.53±0.79
Should keep updated with the recent information	96.7	1.7	1.6	4.62±0.65

Table 4: Distribution of Responses (%) in Practice item

Practice item	Yes	No
Wash hands at least hourly	81.7	18.3
Follow WHO handwashing technique	76.7	23.3
Use alcohol-based sanitizer/ wash hands before and after touching patient.	80.0	20.0
Practicing social distancing of at least one meter.	51.7	48.3
Wear mask whenever outside home/ in contact with patient.	96.7	3.3
Dispose mask when it becomes wet or at least 8 hours after wearing.	29.2	70.8
Cover nose and mouth while sneezing and coughing.	97.5	2.5
Use personal protective equipment beside mask during patient care.	40.8	59.2
Follow a protocol for triage and isolation of suspected COVID-19 cases.	49.2	50.8
Keep updated with current COVID-19 status.	96.7	3.3

Nurses' Level of Knowledge, Attitude and Practice regarding COVID 19

Table 5: Difference in Knowledge Score of Nurses regarding COVID-19 according to Socio-demographic and Job-Related Variables

Variables	Number	Mean Score	Standard deviation	p – value
Age in years				
20-30	101	14.06	3.74	0.94
31 and above	19	14.00	3.87	
Marital status				
Single	69	13.86	3.68	0.52
Married	51	14.31	3.84	
Qualification				
ANM	11	13.09	3.75	0.16
PCL	95	13.92	3.77	
BN/BNs/B.Sc	14	15.71	3.24	
Work experience				
≤5 years	90	14.05	3.81	0.90
>5 years	30	14.06	3.59	

Department					
General	80	12.96	2.72	<0.001*	
CCU	40	16.25	3.71		

*Statistically significant at $p<0.05$.

DISCUSSION

Nurses play an integral role in the healthcare industry; providing care to the patients and carrying out leadership roles.¹² During this pandemic, it is very important to focus on their knowledge, attitude, and practices in order to effectively deal with infected patients with minimum risks. There are very few investigations that have been particularly conducted to assess knowledge, attitude and practices of nurses towards COVID-19. In view of this, the difference in our findings has been compared with other related content as health workers.

The findings in our study demonstrated that less than half of the nurses had good knowledge and practice (47.5% and 43.3% respectively) and half of them (50.8%) had positive attitude towards COVID-19. Majority (81.7%) of the nurses considered social media as a major source of information which is consistent with the findings of previous study from Pakistan (87.68%) and less than that from conducted in Vietnam (91.1%).^{13,14} Therefore it is an important issue for the government of Nepal to consider a variety of social media sites to update accurate information, knowledge and learning materials about this epidemic.

In this study, we found that only 47.5% of the nurses had good knowledge regarding COVID-19. This score is much lower than that reported from Vietnam with 88.4% of good knowledge which can be contributed to the fact that Vietnam having one of the best-organized epidemic control programs in the world.^{14,15} However this finding is in accordance to a study conducted in Chitwan with 80.7% of nurses having good to moderate knowledge¹⁰, which is 82.5% in our study. We found a statistically significant differences in knowledge score in regard to working department whereby nurses working in critical care unit were found to have good knowledge. However,

differences in this variable were not examined in previous studies.

In attitude, half of the nurses (50.8%) responded positively towards Covid-19 whereas a study conducted by Nepal et al. found positive attitude in 90.93% of healthworker.¹⁰ This disparity might be possibly due to variation in sample characteristics and the other important point to be considered is variation in cut of point, where they have taken 50% in contrast to 60% in our study. Further this finding is much lower than that from Giao's study, where 90% of the health workers were found to have positive attitude towards Covid-19.¹⁴ This implies the need of positive motivation and reassurance regarding their safety in the organization.

We also found more than 90% of nurses were concerned that they could contract the virus and pass the infection to family which is in congruence with a study in Vietnam.¹⁴ Only 55% of nurses in our study agreed that they could confidently participate in the management of patients with COVID-19 which is somehow in line with a study in Uganda(44%).¹⁶ Very few nurses (14.2% and 8.2% respectively) in this study agreed that the preparation and medical supplies along with PPE are sufficient for the possible COVID-19 outbreak in their organization which is in accordance to a study in Chitwan in which 20% and 6.7% respectively responded regarding sufficient preparation and medical supplies.¹⁰ Thus poor attitude among nurses in this crisis situation must be addressed by concerned authorities.

Our study revealed that only 43.3% of nurses had good practice in following precautionary measures similar to findings by Nepal et al with 44.19%.¹⁰ But this finding is different from a research in Uganda (74%) and Pakistan (88.7%).^{16,13} Which clearly emphasizes the need of information and training to promote safe practice and control measures in our context. Most of the nurses 97.5%

respectively in our study used to cover nose and mouth while sneezing, coughing. This finding is consistent with the previous study.^{13,16} However only 29.2% dispose mask when it becomes wet or at least eight hours after wearing. This can be attributed to shortage of personal protective equipment which has become a global problem.

In this study we found a statistically significant correlation between attitude and practices ($p=0.007$) which is in accordance to previous study done in Chitwan, Nepal ($p=0.000$) and Pakistan ($p=0.004$).^{10,13} As persons behavior is directed by their attitude, this can be a possible reason for this result.

The limitation of this study is that it was based on a self- administered questionnaire, which may be susceptible to self- presentation bias especially in regard to practice. The study was conducted in only one setting that might limit the generalizability of findings among all the nurses in Nepal.

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CONCLUSION

We found majority of nurses had good to moderate knowledge. However, practice was poor and only half of the nurses had positive attitude towards COVID-19. Positive correlation was found in attitude and practice. The study emphasizes the greater need of motivational approaches in the form of hazard allowance, insurance policy, adequate supply of PPE and medical supplies to promote positive attitude that may eventually lead to safe practices. Study also highlights the use of social media to disseminate information regarding COVID-19.

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