Knowledge and Attitude about COVID 19 among Health Care Workers Working in Seti Provincial Hospital

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ABSTRACT

Background: Health care workers are at greater risk of infection during COVID 19 pandemic. This study was carried out to assess the knowledge and attitude toward COVID-19 among healthcare workers at working at Seti Zonal Hospital.

Methods: A cross-sectional study was performed between April and May 2020 at Seti Zonal Hospital with purposive sampling technique and self-administered questionnaire of the knowledge and attitude of healthcare workers regarding COVID-19. The demographic characteristics mean knowledge and attitude score of healthcare workers were identified and inferential statistics t-test, ANOVA and Spearman's correlation were used to show the relationship between variables.

Results: A total of 230 healthcare workers (92% response rate) had a mean score of knowledge and attitude of 8 ± 0.88 and 7.88 ± 1.32, respectively with good knowledge and a low positive attitude. Majority (94.7%) were familiar with the sign and symptoms, agreed that chronic diseases patients and HCWs are at a higher risk (97%) and (87.8%) respectively while knowledge related to COVID 19 vaccination, isolation period and treatment by antibiotics was poor with low positive attitude towards information availability about COVID 19 (41%), government ability to control the epidemic (49%), and the family members might get infection (60%). There was a positive correlation between knowledge scores and attitude scores (r=0.28, p<0.0001).

Conclusions: We identified a significant gap in information source, sufficient knowledge and low positive attitude about COVID 19 among health care workers. Greater educational efforts about prevention should be directed to different level of health workers.

Keywords: Attitude; COVID-19; health care worker; knowledge.

INTRODUCTION

Novel coronavirus was first reported from Wuhan, China and similar outbreaks were also reported previously in 2003 and 2015.[1,2] The disease is highly infectious, and spread throughout many countries including Nepal and World Health Organization declared that COVID-19 infection was a Public Health Emergency of International Concern.[3-,5]

Recent studies showed that more than 3300 healthcare workers from China and up to 20% of responding healthcare workers (HCWs) in Italy were infected with COVID-19.[6] Due to its recent origin and rapid spread, it is imperative that healthcare workers be well informed about COVID-19 to protect themselves as well as their patients.

Knowledge can influence the perceptions of HCWs [7-9] and this research was carried out to identify knowledge and attitude about COVID 19 among health care workers on universal infection prevention and control practices specifically related to COVID-19.

METHODS

An institutional based cross sectional study was conducted between April 2020 and May 2020 to assess the knowledge and attitude among health care workers

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working in Seti Provincial Hospital. The estimated sample size was about 255(all health workers working in Seti provincial hospital) but only 230 of the respondents agreed and returned the questionnaires with the response rate of 92%. The HCWs including physicians, pharmacists, nurses, and allied health workers, were evaluated as eligible to participate in the study.

A semi structured questionnaire was introduced to collect information from the participant according to Ahmed M. Asaad' study towards the Middle East Respiratory Syndrome Coronavirus (MERs CoV) and the Question and Answer about COVID-19 in the webpage of WHO.[10,11] After translating to Nepalese language and correcting to fit the COVID-19 virus, the questionnaire was sent for a pilot study, which was carried out by 10 HCWs at primary health care centers of Dhangadhi who gave their opinions relating to the intelligibility of the questionnaire. According to the result of the pilot study, the final questionnaire was determined by the authors. The data of the pilot analysis was not used for the final sample of the study. A structured questionnaire included three parts. The first section comprised demographic characteristics of the participants such as age, gender, occupation, years of experience, and the source information of COVID-19 knowledge. The second section included 10 questions regarding the knowledge of COVID-19, and the last one estimated the attitude regarding COVID-19, including 10 questions in which the participants' answers were assessed using yes/no questions. Participants were assured that the information collected would remain anonymous. For knowledge score correct answer in relation to the knowledge of COVID-19 was given one point. The total knowledge score for the HCWs varied between 0 (with no correct answer) and 10 (for all correct answers), and a cut off level of ≤6(60% of total scores) was evaluated as insufficient knowledge, and >6 indicated sufficient knowledge. Attitude towards COVID-19 were assessed using 10 items, and each question was labeled as positive (scored as "1") or negative attitude (scored as "0"). Scores ranged from 0 to 10. The participants' attitude were classified as positive with score >7 (70% of total scores) or negative (score ≤7).

Data was analyzed using SPSS 17.0 software. Descriptive analysis was reported as frequency, percentage and mean scores. Chi square test, T-test and ANOVA were used to analyze the relationship between the dependent (knowledge and attitude), and independent variables (demographic characteristics of the participants). Spearman's correlation was used to assess the relationship between mean knowledge and attitude

scores. All the differences of estimated variables were considered statistically significant if $p < 0.05$.

All the eligible HCWs were informed about the objectives of the study, and they agreed and signed consent form before participation. All data collected from this study were used only for this study and not subjected for other use. The ethical clearance was taken from Nepal Health Research Council.

RESULTS

Table 1 shows the baseline demographic characteristics of the participants. A total of 255 HCWs participated, 230 of whom completed the study questionnaire (92 % response rate), with mean age of (31.4± 7.6) years including 116 (50.4%) men and 114 (49.6%) women. Most participants were between 20-29 years of age (n=107, 46.7%). The majority of participants were nurses (n=98, 42.6 %) and almost half (51.3%) of them had <5 years of experience as shown in figure 1. All the respondents(100%) knew that COVID 19 pandemic is happening in the world. The main sources of COVID 19 information were website of hospital/health ministry (80%) and social media(65%).

Table 1. Baseline demographic characteristics of health care workers (n=230)	
Characteristics	Frequency n(%)
Age (mean ±SD)	31.44 ± 7.6
20 – 29	107(46.7)
30 – 39	81(35.2)
>40	42(18.3)
Sex	
Male	116(50.4))
Female	114(49.6)
Years of experience	
<5	118(51.3)
5-10	56(24.3)
>10	56(24.3)
Know that COVID 19 outbreak is happening globally in the world	230(100)
Sources of COVID 19 information (yes)	
Television	122(53)
Social media	149(65)
Website of hospital/health ministry	184(80)
Friends and relatives	90(30)

Table 2 depicts the current status of COVID 19 knowledge among HCWs. All the participants (100%) were aware that the disease is viral infection, and is transmitted

by close contact with infected person. Majority(94.7%) were familiar with the sign and symptoms of the disease. A majority of participants agreed that patients with chronic diseases and HCWs are at a higher risk of infection [223(97%)] and [202(87.8%)] respectively. However, the participants' knowledge about questions related to COVID 19 vaccination, incubation period of infection and treatment by antibiotics was comparatively poor. The overall response to the survey was good, the participants possessing sufficient knowledge were recorded as 91%.
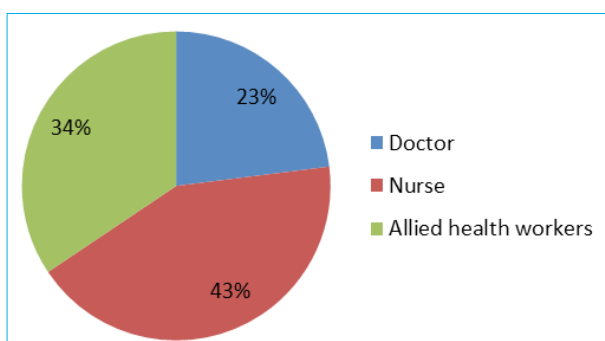

Figure 1. Health care workers by profession.

Table 2. Knowledge of health care workers toward COVID 19, Seti Provincial Hospital (n=230)

Questions (Correct answer)	Correct answer n(%)
COVID-19 is a virus infection(yes)	230(100)
COVID-19 is transmitted by close contact with infected person(yes)	230(100)
Fever, cough, sore throats and shortness of breath are possible symptoms of COVID 19(yes)	218(94.7)
The isolation period is 2 weeks (yes)	197(85.7)
COVID 19 vaccine is available in markets(no)	223(97)
Antibiotics are the first line treatment(no)	152(66.1)
Washing hands with soap and water , and using face masks can help in prevention of disease transmission(yes)	226(98.3)
Patients with underlying chronic diseases are at a higher risk of infection and death(yes)	223(97)
Healthcare workers are at a higher risk of infection (yes)	202(87.8)
COVID 19 could be fatal(yes)	211(91.7)
Mean knowledge score (mean± SD)	8±0.88
Sufficient knowledge	210 (91%)
Insufficient knowledge	20(9%)

The results of the questionnaire relating to attitude were summarized in Table 3. Over 62 % of HCWs exhibited a positive attitude toward COVID 19. The majority of participants (97.8%, 94.3%) accepted that if infected with COVID 19 they would accept isolation and they would take vaccine if available respectively. However, fewer respondents had positive attitude towards some questions regarding probably available information about COVID 19 in Nepalese society (41%), whether government institution would be able to control the epidemic (49%), and worrying about one of the family members might get infection (60%).

Table 3. Attitudes of health care workers towards COVID 19, Seti Provincial Hospital (n=230)

Questions (Positive response)	Correct answer n(%)
You think you will probably get illness(yes)	137(59.6)
You are worried one of your famiy members may get infection(yes)	139(60.4)
If getting COVID 19, you will accept isolation in health facilities(yes)	225(97.8)
Transmission of COVID 19 can be prevented by washing hands with soap frequently(yes)	218(94.8)
Prevalence of COVID 19 can be reduced by the active participant of HCWs in hospital infection control programs (yes)	219(95.2)
If a COVID 19 vaccine was available, I would take it. (yes)	217(94.3)
COVID 19 patients should be kept in isolation(yes)	227(98.7)
Medical Staffs are ready to participate in anti-epidemic in the community(yes)	219(95.2)
Is the available information about COVID 19 in Nepalese society sufficient? (yes)	94(40.9)
Are the government institutions able to control the epidemic? (yes)	114(49.6)
Mean attitude score (mean± SD)	7.88±1.32
Positive attitude	62.2%
Negative attitude	37.8%

The association of demographic characteristics and knowledge and attitude of HCWs were presented in Table 4, in which age group, gender, occupation years of experiences were correlated with knowledge score. According to our findings, 30-39 years age group of HCWs means knowledge score was higher compared to other age groups which was statistically significant.(p=0.0001).

Table 4. Comparison between demographic characteristics of healthcare workers and the score of knowledge and attitude (n=230).

Characteristics	Knowledge	t value	F value	p value	Attitude	t value	F value	p value
Age								
20-29	8.01±1.04		16.58	0.0001*	7.4±1.4		18.16	0.0001*
30-39	8.70±0.55				8.1±1.2			
>40	8.52±0.63				8.7±0.8			
Sex								
Male	8.48±0.71	2.28	1.66	0.023*	8.04±1.24	1.84	0.33	0.06
Female	8.21±1.01				7.71±1.41			
Occupation								
Doctor	8.77±0.42		16.91	0.0001*	8.09±1.11		1.24	0.29
Nurse	8.44±0.64				7.89±1.24			
Allied health workkers	7.94±1.16				7.72±1.56			
Year of experiences								
<5	8.27±0.71		4.75	0.01*	7.84±1.31		0.83	0.449
5 – 10	8.21±1.27				7.76±1.66			
>10	8.66±0.64				8.07±0.98			

*Data were expressed as mean ± SD. t-test and ANOVA test (F) were used to a comparison between demographic characteristics of healthcare workers and the score of knowledge and attitude,*P<0.05.*

Male had statistically significant higher knowledge than female (p=0.023). Moreover, doctors and nurses had the better knowledge about COVID 19 compared to other health workers which was statistically significant (p=0.0001). Similarly, significantly those health care workers with >10 years of experiences had higher mean knowledge score compared to others (p=0.01).Over 62% of the HCWs had positive attitude towards COVID 19. Those HCWs with age >40 years were found to have higher attitude score than others which was statistically significant (p=0.0001).

Besides, Spearman's analysis found that a significant positive correlation between the mean knowledge and attitude scores of HCWs about COVID-19 (r=0.28, p<0.0001). The higher the knowledge scores were, the higher the probability of positive. Therefore, a good knowledge COVID-19 was directly associated with a positive attitude.

DISCUSSION

Currently, COVID 19 is a daily discussion topic in the media and among the public, especially among patients and HCWs. With the currently mounting COVID-19 transmission raising tensions for everyone, including for health officials and health systems, an important question arises regarding how we manage information to help frontline HCWs in times of public health crisis. For this reason, we investigated HCWs 'knowledge and attitude about COVID 19 in this pandemic.

We found that 80% (n=181) of HCWs used official government websites as a source of information about COVID-19. This indicates that the COVID-19-related updates posted online by official government health authorities had positive implications for improving HCWs' knowledge levels. Obtaining information from authentic sources is pivotal for disseminating unbiased and reliable data about the emerging COVID-19 infection and is essential for HCWs' preparedness and responses.[12] Our finding resembles with the study done in China where 86.2% of the respondents used official government website for COVID information.[13] However, a finding of considerable concern is that more than 65% (n=149) of HCWs used social media as a source of information. Currently, there is a vast diversity of information available through the internet, including unverified malicious information, that can spread quickly and misguide HCWs. In particular, health authorities and scientists have warned that widespread misinformation about COVID-19 is a serious concern causing xenophobia worldwide.[14-17] In this regard, HCWs should carefully evaluate COVID-19-related information and should use scientific and authentic content as information sources.

The findings of this study suggest a significant gap between the amount of information available on COVID-19 and the depth of knowledge among HCWs, particularly about the antibiotic as the first line of treatment and the incubation period of COVID-19.Only 85% and 66% had good knowledge about isolation period and treatment of COVID 19. Currently, no vaccine or specific treatment for COVID-19 is available, the treatment aims to reduce the symptoms without any specific antiviral medication for COVID-19. This result could be comparable with the results in the study done by Bener, Khan and Huynh et.al in which 40%, 57.6%, 58.4% of participants had no knowledge of the treatment of SARS, MERS and COVID 19.[13,18,19] This findings suggested that media campaigns should be focused on the isolation of suspected cases and the treatment and management of the COVID 19 to control the outbreak. The majority of HCWs were aware that patients with underlying chronic diseases are at a higher risk of infection and mortality accounted for 97%. This was similar to some previous studies about COVID-19 in Vietnam and China.[7, 20] It showed that HCWs need to be cautious in patients with chronic diseases because these patients are more likely to die from the illness.

Another important finding was that only 66% of the HCWs had positive attitude towards COVID 19. However, there remains a significant concern that they could contract the virus and in turn pass the virus to family members, particularly their parents as perceived by 60% of HCWs. This findings was similar with the study done by Huynh etal.[13] 59% of the HCWs perceived that the information provided to the Nepalese society about COVID 19 was insufficient. However, only 94 % have positive attitude about vaccination for COVID 19. Similar findings was seen in the study from Saudi Arabia where only 22% of HCWs had negative attitude about vaccination.[10] This could be explained by a lack of proper knowledge about the preventive role of active immunization. About 50% had negative attitude that government institution would not be able to control the epidemics. This finding contrast with the finding from the study from Saudi Arabia where HCWs believed the government epidemic control system.[10] This might be due to the fact that in spite of having good knowledge, the HCWs might not be satisfied by the management and the availability of the required equipments for the prevention and control of COVID 19.

According to our findings, age was significantly associated with higher proportions of sufficient knowledge. A number of previous studies also found that older HCWs with more experiences showed higher rates of knowledge and attitude.[18,19] Male had significant higher knowledge than female. Moreover, doctors and nurses had the better knowledge about COVID 19 compared to other health workers with similar results in previous studies where physician and nurses had better knowledge than other profession.[18,21-23] Over 62% of the HCWs had positive attitude towards COVID 19. Additionally, good knowledge has a higher probability of positive attitudes, similar another study done in Vietnam showed the same relation.[13] The goals of the upcoming educational program should focus on the HCW's with insufficient knowledge and this should improve the rate of positive attitudes of HCWs.

This study had some limitations in interpreting the results because COVID-19 is a novel corona virus and only few researches has been studied to compare; the study samples were collected at Seti Provincial Hospital in the current condition. Therefore, it was difficult to generalize results across the general population. Future studies could estimate the knowledge and attitude of HCWs on a larger scale to be able to design appropriate interventions on a national level. Despite these limitations, our findings provide valuable information about the knowledge and attitude of HCWs about COVID 19 during a peak period of the pandemic.

CONCLUSIONS

We identified a significant gap in information source, sufficient knowledge level and relatively low positive attitude about COVID 19 among health care workers. There is a noticeable difference in knowledge level between age group, profession, gender, and duration of experiences. Greater educational efforts about prevention should be directed to different level of health workers especially of younger age and less duration of experiences.

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