Original Research Article

Knowledge, Attitude and Practice of COVID-19 among Health Care Workers of Bhaktapur, Nepal

Abstract

Background: To identify the association between different factors associated with knowledge, attitude and practice of among the health care workers of Bhaktapur, Nepal

Materials and Methods: A descriptive cross-sectional study was carried out in among 354 Health Care workers of Bhaktapur. The major objective of the study was to evaluate knowledge, attitude and practice of COVID-19 among the health care workers of Bhaktapur, Nepal and direct face to face interview method was carried out for this study. Chi-square test was applied to find the association between various demographic variables and knowledge attitude and practice.

Results: Nearly, three fourth (74.4%) of the male had good knowledge and the female with good knowledge were 47.5%. But the percentage of female with positive attitude (80%) and good practice (67.5) were higher as compared to that of male. There were significant the association between gender, years of schooling job description, and family type with the knowledge of the respondents.

Conclusion: The study concluded that female, individuals with the basic and the secondary level of schooling and cleaners/others have a very less good knowledge percentage. Positive attitude among Pharmacists was low as compared to other profession. Similarly, percentage of female with good practice was higher than male and the respondents with years of experience. Among the different measures taken to prevent COVID-19, most of the health care workers said, not touching eyes, nose or mouth without washing hands can prevent COVID-19.Besides this, majority of the respondents said, use of PPE while handling the patients, avoiding close contact with the sick and washing and sanitizing hands also play the crucial role in prevention of spread of the virus.

Keywords: COVID-19, Health Care Workers, Bhaktapur, Nepal.

1. Introduction

COVID-19 virus is the SARS like corona virus that was for the first time detected in bats in China in December 2019 (1). Nearly after 8 years of MERS-COV epidemic, the pandemic of Corona Virus Disease-2019 (COVID-19) has emerged in Wuhan city, Hubei province, China and has spread as a global outbreak being a major public health problem(2). In Nepal, the first COVID-19 case was detected in Jan 30, 2020 in 32 years old student who was studying in one of the university of Wuhan China(3).Vaccines for the virus have been developed but it is not accessible to all. After the spread of this virus, it has created a great threat among people with certain level of anxiety hampering people's daily lifestyle(4). Comparatively health workers have a greater risk of developing COVID -19 than general people. Though the vaccines have been provided, most of them are prone to reinfection. This is because health workers are involved in, Infection Prevention and Control (IPC) measures and have the equal role in the management of patients in particular health facility(5).

Health Care Workers, in the other hand are the frontline individuals of COVID -19 and are also exposed to danger pathogen, fatigue, long working hours psychological distress physical violence, stigma, etc(6). In context of general people, people with preexisting chronic medical conditions or the people with suppressed immune system like children and elderly group people are at higher risk. This virus is mainly transmitted through the respiratory droplets of the infected person who may or may not develop the symptoms, direct or the indirect contact with the person and the surfaces or through the air borne transmission. However similar to other blood borne diseases like HIV/AIDS and Hepatitis, it can also get transmitted due to infected blood(5).

There are the several symptoms associated with COVID-19. They are: fever, tiredness, Sore throat, headache, muscle ache, chest pain ,chills ,loss of taste and smell, Nausea ,Vomiting and diarrhea in some cases(7).It is necessary to seek medical help or see the doctor when different symptoms like increase ion blood pressure, trouble breathing, blue lips and face confusion, etc. are seen. COVID-19 may include the serious complications like: Pneumonia, heart problems, formation of blood clots, acute Respiratory Distress Syndrome, Kidney failure, bacterial Infections, etc. (8)**.**

The best possible way for the prevention of COVID-19 is to be self-informed about this virus, doing appropriate exercise techniques to increase oxygen level, refraining from smoking and other activities that weakens the lungs and gathering knowledge on different modes of

transmission. At the same time, it is also necessary to wash hands with soap and water and use alcohol-based hand sanitizer avoiding the habit of frequently touching the face. However, using appropriate Personal Protection Equipment's (PPE) in health care as well as community settings can prevent virus from entering our body, PPE that needs to be used most are: masks, gloves, glasses, and gown, head cover, shoes, respirators (N95, FFP2 or equivalent)(7).Starting from the few cases of COVID-19 in Nepal, the number of infected people had gradually increased. But after the introduction of vaccine cases have been reduced to some extent. For this, health care workers have a great role. So, the major objective of the study was to evaluate knowledge, attitude and practice of COVID-19 among the health care workers of Bhaktapur, Nepal.

2. Materials and Methods

Descriptive cross-sectional study was conducted among Health Care Workers (doctor, nurse, health assistant, lab technician, pharmacists, radiologists, medical officer, cleaner, helpers/others) in three hospitals of Bhaktapur. Self-administered questionnaire was distributed among 354 Health Care Workers with 70% prevalence and confidence interval of 95%. The study was carried out through simple random sampling technique, probability proportionate to size. Initially simple random sampling technique was carried out to select the number of hospitals and health care institutions located in Bhaktapur. A lottery was done to select hospitals from the total sample frame.3 hospitals were selected after which the permission letter was provided to each health care worker of each hospital and data was collected accordingly. The questionnaire was pre-tested in one of the random hospitals in order to check validity and reliability of the study. Following the pretesting some modification of the question and terminology was made in the final questionnaire. Consultation with experts while developing the questionnaire and extensive literature review was done. To reduce a random error, a simple random sampling was used to select various hospitals located in Bhaktapur. Similarly, in order to reduce information bias, respondents were properly informed about the research topic and its content. Verbal and written informed consent were taken from each Health Care Workers (HCWs) form hospitals before data collection. All the health care workers working in the selected hospitals were included in the study whereas the Health Care Workers absent in the respective day or not willing to participate in the survey were excluded from the study. Ethical approval was obtained from the Institutional Review Committee (IRC) of Nobel College. Additionally, the hospital authorities were contacted to get permission and appropriate time to

conduct the study. Privacy and confidentiality of the collected information from the participants was also insured. Data entry was done from Microsoft excel and data analysis was done from IBM SPSS 22.0 version software. Descriptive statistics was used to describe the characteristics of the sample and cross tabulation for the distribution of knowledge, attitude and practice of the participants towards COVID-19 during the pandemic. Three-point Likert scales were used to assess attitude and practice of respondents towards COVID-19.Respondents answering correct options were coded with one value and incorrect options were coded with zero. Total scores for all knowledge attitude and practice were identified and interpretation was done comparing the median value. Chi square test was used to measure the association between two categorical variables.

3. Results

Results:

The table 1 depicts the socio demographic characteristics of the respondents. Out of 354 respondents included in the study, 7 out of 25 were male and 18 out of 25 were female. Among the total Health Care Workers, 96.35% were of age group 20-40 and 3.7% were of age group 41-60.Most of the respondents were Hindus which was 92.7%..Basic years of schooling (1-8), among the total respondents were 6.5%, Secondary (9-12) were 16.9%, Bachelor were 62.7% and Masters and above were 13.8%. Likewise, most of the respondents were nurse which was 45.8%.Most of them had job experience of 0-15 years which was 96.9%. Respondents living in their own home were 91.85%.In the same way, respondents living in the Joint family were 13 out of 50 and nuclear/extended were 37 out of 50.Majority of respondents didn't have infection of COVID-19 which was 73.7%. Among the different sources of COVID-19 information, most of the people obtained information from television which was 73.4%,

Table 1:

Socio demographic characteristics of the respondents (n=354)

Characteristics	Category	Frequency(n)	Percent (%)
Sex	Male	99	28.0
	Female	255	72.0
Age in years	20-40	341	96.3
	41-60	13	3.7
Religion	Hindu	328	92.7

	Others	26	7.3
Ethnicity	Brahmin/Chettri	98	27.7
	Janajati/Adhibasi	231	65.3
	Dalit/Madhesi/Others	25	7.0
Years of schooling	Basic(1-8)	23	6.5
	Secondary(9-12)	60	16.9
	Bachelor	222	62.7
	Masters and above	49	13.8
Job description	Doctor/Medical officer	72	20.3
	Health Assistant	19	5.4
	Nurse	162	45.8
	Lab technician/Radiologists	43	12.1
	Pharmacist	27	7.9
	Cleaner/Others	31	8.8
Years of experience	0-15 years	343	96.9
	16-30 years	11	3.1
Residence category	Own home	325	91.8
	Rent/hostel/others	29	8.2
Family category	Joint	92	26.0
	Nuclear/Extended	262	74.0
Infection of COVID-19	Yes	93	26.3
	No	261	73.7
Source of COVID-19 information	Television	248	73.4
	Hospitals/Health Ministry	115	34.0
	Social Media	118	34.9
	friends/Relatives	216	63.2

Table 2:

Association between socio-demographic variables and Knowledge of respondents towards COVID-19

Variables	Category	Knowledge level		χ^2	P-value
		Poor(%)	Good(%)		
Gender	Male	25(25.3)	74(74.7)	21.476	**0.000***
	Female	134(52.5)	121(47.5)		
Age	20-40	154(45.2)	187(54.8)	0.227	0.634
	41-60	5(38.5)	8(61.5)		
Religion	Hindu	147(44.8)	181(55.2)	0.017	0.895
	Others	12(46.2)	14(53.8)		
Ethnicity	Brahmin/Chettri	46(46.9)	52(53.1)	0.416	0.810
	Janajati/Adivasi	103(44.6)	128(55.4)		
	Dalit/Madhesi/others	10(40.0)	15(60.0)		

Years of schooling	Basic(1-8)	12(52.2)	11(47.8)		
	Secondary(9-12)	43(71.7)	17(28.3)	22.856	**0.000***
	Bachelors	87(39.2)	135(60.8)		
	Masters and above	17(34.7)	32(65.3)		
Job Description	Doctor/Medical officer	21(29.2)	51(70.8)		
	Health Assistant	5(26.3)	14(73.7)		
	Nurse	90(55.6)	72(44.4)	34.616	**0.000***
	Lab technician/Radiologists	20(46.5)	23(53.5)		
	Pharmacists	3(11.1)	24(88.9)		
	Cleaner/others	20(64.5)	11(35.5)		
Years of experience	0-15	154(44.9)	189(55.1)	0.000	1.000
	16-30	5(45.5)	6(54.5)		
Residence	Own home	141(43.4)	184(56.6)	3.757	0.053
	Rent/hostel/others	18(62.1)	11(37.9)		
Family type	Joint	53(57.6)	39(42.4)	8.095	**0.004***
	Nuclear	106(40.5)	156(59.5)		
Infection of COVID-19	Yes	41(44.1)	52(55.9)	0.035	0.851
	No	118(45.2)	143(54.8)		

Table 3

Association between sociodemographic variables and attitude of respondents

Variables	Category	Attitude		χ^2	P-value
		Negative(%)	Positive(%)		
Gender	Male	20(20.2)	79(79.8)	0.002	0.966
	Female	51(20)	204(80)		
Age	20-40	69(20.2)	272(79.8)	0.000	1.000
	41-60	2(15.4)	11(84.6)		

Religion	Hindu	68(20.7)	260(79.3)	1.270	0.260
	Others	3(11.5)	23(88.5)		
Ethnicity	Brahmin/Chettri	21(21.4)	77(78.6)	1.398	0.497
	Janajati/Adhibasi	43(18.6)	188(81.4)		
	Dalit/Madhesi/others	7(28)	18(72)		
Years of schooling	Basic(1-8)	7(30.4)	16(69.6)	4.920	0.178
	Secondary(9-12)	14(23.3)	46(76.7)		
	Bachelors	45(20.3)	177(79.7)		
	Masters and above	5(10.2)	44(89.8)		
Job description	Doctors/Medical officer	10(13.9)	62(86.1)	9.990	0.076
	Health Assistant	5(26.3)	14(73.7)		
	Nurse	29(17.9)	133(82.1)		
	Lab technician/Radiologists	9(20.9)	34(79.1)		
	Pharmacists	11(40.7)	16(59.3)		
	Cleaners/others	7(22.6)	24(77.4)		
Years of experience	0-15	69(20.1)	274(79.9)	0.000	1.000
	16-30	2(18.2)	9(81.1)		
Residence	Own home	65(20.0)	260(80.0)	0.008	0.929
	Rent/hostel/others	6(20.7)	23(79.3)		
Family type	Joint	23(25.0)	69(75.0)	1.895	0.169
	Nuclear	48(18.3)	214(81.7)		
Infection of COVID-19	Yes	16(17.2)	77(82.8)	0.640	0.424
	No	55(21.1)	206(78.9)		

Table 4: Association between socio demographic characteristics and practice of the respondents

Variables	Category	Practice		χ^2	P-value
		Bad (%)	Good (%)		
Gender	Male	44(44.4)	55(55.6)	4.386	0.036*
	Female	83(32.5)	172(67.5)		
Age	20-40	124(36.4)	217(63.6)	0.000	1.000
	41-60	3(23.1)	10(76.9)		
Religion	Hindu	117(35.7)	211(64.3)	0.082	0.775
	Others	10(38.5)	16(61.5)		
Ethnicity	Brahmin/Chettri	30(30.6)	68(69.4)	1.675	0.433
	Janajati/Adhibasi	9(36.0)	16(64.0)		
	Dalit/Madhesi/others	88(38.1)	143(61.9)		
Years of schooling	Basic(1-8)	20(87.0)	3(13.0)	29.57	0.000*
	Secondary(9-12)	19(31.7)	41(68.3)		
	Bachelors	76(34.2)	146(65.8)		
	Masters and above	12(24.5)	37(75.5)		
Job description	Doctors/Medical officer	19(26.4)	53(73.6)	49.142	0.000*
	Health Assistant	3(15.8)	18(84.2)		
	Nurse	51(31.5)	111(68.5)		
	Lab technicians/radiologists	11(25.6)	32(74.4)		
	Pharmacists	17(63.0)	10(37.0)		
	Cleaner/others	26(83.9)	5(16.1)		
Years of experience	0-15	125(36.4)	218(63.6)	0.000	0.340
	16-30	2(18.2)	9(81.8)		
Residence	Own home	121(37.2)	204(62.8)	3.167	0.075
	Rent/hostel/others	6(20.7)	23(79.3)		
Family type	Joint	25(27.2)	67(72.8)	4.092	0.043*
	Nuclear/Extended	102(38.9)	160(61.1)		
Infection of COVID-19	Yes	97(37.2)	164(62.8)	0.718	0.397
	No	30(32.3)	63(67.7)		

*Significant at 5%

The table 2 depicts the association between socio demographic characteristics and knowledge of the respondents. Gender, years of schooling, job description and family type, were significantly associated with the knowledge of health care workers.

Table 3 shows the association between socio demographic characteristics and the attitude of the respondents. Here also, there was no association between socio demographic characteristics and the attitude of the respondents. (P value>0.05)

Table 4 represents the association between source of COVID-19 information and practice of the respondents. This shows that the association between socio demographic characteristics and practice of the respondents. Gender, years of schooling, job description, and family type were significantly associated with the practice of the respondents. (P value<0.05)

4. Discussion

The major aim of our study was to identify, knowledge, attitude and practice of health care workers towards COVID-19. In the study, 18 out of 25 were female and 7 out of 25 were male. Majority (96.3%) of the respondents were of age group 20-40 and most of them had years of schooling Bachelors (62.7%).In the study, it was found that majority (96.95%) of them had years of experience (0-15) years and most of them lived in their own home (91.8%).Nearly, three fourth of the respondents (73.4%) obtained COVID-19 information from television followed by, friends/relatives (63.2%), social media,(34.9%) and hospitals/health ministry (34%).Similar study, conducted in the research title, ''knowledge, attitude and practice towards COVID-19 :An Epidemiological Survey in North –Central Nigeria'', most of the respondents,(55.7) obtained COVID-19 in formation from internet/social media.(10)

Similarly, out of total respondents, 97.7% said that the causative agent is virus. In the similar study conducted in China entitled, "Knowledge and attitude toward COVID-19 among Health Care Workers at District 2 Hospital, Ho Chi Minh City", 99.1% agreed that the COVID-19 Is the virus infection.(11)

In our study, one out of one respondent said that the virus is transmitted from person to person while sneezing and coughing and more than half (52.3%) of the respondents said that the virus is originated from bats. In the same way, majority (97.7%) of respondents said that the symptoms appear after 2-14 days and 2.3% said 2-5 days. Similar study was conducted in the research entitled," Knowledge, attitude and practice towards COVID-19 among chronic disease patients at Addis Zemen Hospital, Northwest Ethiopia. Infection and drug resistance "where, 23.5% respondents agreed on appearance of symptoms in 2-14 days, 3% people didn't agree and 73.5% people said ,they didn't know.(1)

In our study, 52.3% of respondents said that the virus is originated from bats. Similar study conducted in the title, "Knowledge and perception of COVID-19 among Health Care Workers: Cross-sectional study".65.7% said that the virus is thought to be originating from bats.(12)

In our study, one out of one health care worker said that fever, dry cough and difficulty breathing as the symptom of COVID-19, 63% said, sore throat and blocked nose, 63% said, headache and 61.9% of respondents said diarrhea. In the same way, in the study conducted in the title," Knowledge, Attitudes and Practices towards COVID-19: An Epidemiological Survey in North-Central Nigeria",86.9% said high fever,40.9% said running nose,89.6% said dry cough,94.6% said difficulty breathing,30.7% said muscle pain,52.3% said fatigue, and 9% said bleeding.(10)

In our study, 86.2% of the respondents said that the Covid-19 is transmitted from person to person while sneezing and coughing, nearly, 91.2% said eyes exposed to respiratory droplets, one out of one said less than 1 meter distance with the infected person, 95.5% said contact with the contaminated surface and 94.6% said meat products of the infected animals. Similarly, in the study, "Medical students and COVID-19 Knowledge, Attitude and Precautionary measures: A Descriptive study from Jordan", when the respondents were asked about the likelihood of transmission, 41.8% said COVID-19 is more likely to be transmitted from air, 91% said large droplets inhalation, 42.5% said animals, 53.3% said contaminated food, 97.4% said touching contaminated surface, 73.8% said skin contact, 35.5% said fecal-oral route, 94.7% said kissing, 93.7% said hand shaking, 22.9% said mother to fetus and 28.8% said blood transfusion.(13)

Likewise, when the respondents were asked about the prevention of COVID-19, one out of one said, not touching eyes, nose or mouth can prevent COVID-19, 99.7% said use of appropriate PPE while handling the patients, 99.2% said avoiding close contact with sick and 98% said washing and sanitizing hands. In the study entitled, "Knowledge, practice and associated factors towards prevention of COVID-19 among high risk groups: A crossectional study in Addis Abada, Ethiopia", 82.6% social distancing, 85.4% said hand washing, 67.9% said use of face mask and 21.2% said, isolation/quarantine and 4.2% said others.(14)

Similarly, in this study, it was found that one out of one respondent agreed that it is important to wash hands and face after going outside. In the same way, in the study, "Knowledge and practice regarding prevention of COVID-19 among Saudi Arabian Population ", 96% knew that they need to wash their hands with soap and water for 20 seconds.(15)

Gender, years of schooling, Job description, and family type were significantly associated with the knowledge of the respondents where analysis showed that, knowledge was significantly higher in male as compared to female. According to the study, "A cross-sectional survey of Knowledge, Attitude and Practice (KAP) towards COVID-19 among the general population of Jammu and Kashmir, India", the overall knowledge score was significantly associated with gender, age, education, and occupation of the respondents where knowledge was significantly higher in females (88.9%)(16)

Similarly, our study, source of COVID-19 information from television, social media, websites of hospitals/health ministry, friends/relatives were not significantly associated with the knowledge of the respondents. (p value>0.05).But in the study," Knowledge, Attitude and Practice toward the Novel Coronavirus (COVID-19) Outbreak: A Population-Based Survey in Iran", sources of COVID-19 were news/media, social media and internet, family/friends, scientific articles/journals, and health care providers. Among them, use of social media, scientific articles/journals and health care providers were significantly associated with the knowledge of the respondents towards COVID-19.(17)

Our study concluded that, watching television was significantly associated with the attitude of the respondents (P value<0.025).Similarly, in the study," Knowledge, Attitude and Practice toward the Novel Coronavirus (COVID-19) Outbreak: A Population-Based Survey in Iran", social media/internet and friends/relatives were significantly associated with the attitude of the respondents. (P value<0.001)(17)

According to our study, age, years of schooling, family type and the use of social media were significantly associated with the practice of the respondents. Similarly, in the study, "Knowledge, attitude and preventive practices towards COVID-19 among Bangladeshi Internet Users", age and marital status were significantly associated with the practice of the respondents.(18)

5. Conclusion

The study concluded that though all the Health Care workers were known to COVID 19 there was no satisfactory percentage of good knowledge attitude and practice. Sub ordinate Health Care Workers like cleaners, waiters, and helpers should also be given a lead precedence. Gender, years of schooling, and job category were significantly associated with knowledge towards COVID-19 source of COVID-19 information from television was associated with attitude and gender. Years of schooling, job category, family type, and use of social media were associated with practice of respondents towards COVID-19.Among the different measures taken to prevent COVID-19, most of the health care workers said, not touching eyes, nose or mouth without washing hands can prevent COVID-19.Besides this, majority of the respondents said, use of PPE while handling the patients, avoiding close contact with the sick and washing and sanitizing hands also play the crucial role in the prevention of virus.

Recommendation

Health Care Workers with basic and secondary level of schooling including cleaners and helpers should be kept more alert about the consequences and severity of the virus. Awareness on hand washing techniques, social distancing, use of PPE while handling the patients, avoiding close contact with the person who are sick as well as supportive and emotional care should be provided by the hospital management for the safety of patients as well as health care workers. Preparedness for the subsequent waves of COVID-19 should be done. Economic security for the health care workers who are more prone to infections should be provided. Different policies and rules related to COVID-19 should also be effectively implemented.

Ethical approval

The study was approved by the Institutional Review Committee (IRC) at Nobel College, Sinamangal.

Consent for publication

Verbal consent was taken from each participant for publishing the manuscript before collecting information.

Availability of data and materials

This manuscript's data sets supporting this research will not be shared publicly and are available from the corresponding author upon reasonable request.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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