Research Article

Assessment of knowledge, attitude and practice of COVID-19 among dental patients visiting Pokhara Academy of Health Sciences, Pokhara

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ABSTRACT

Introduction: Coronavirus disease 2019 (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus 2 . The aim of this study was to assess the knowledge, attitude and practice related to COVID-19 among dental patients visiting Pokhara Academy of Health Sciences, Pokhara.

Materials and Method: The cross-sectional study was carried out in the dental patients visiting Pokhara Academy of Health Sciences, Pokhara. Convenient sampling was used. A structured questionnaire was organized into four different sections: section I, section II, section III and section IV which contained socio-demographic information, knowledge, attitude and practice towards universal safety precautions of Covid-19 respectively. Descriptive statistics including mean, standard deviation, median, interquartile range, proportion were calculated along with tabulation presentation. ANOVA and T Tests were used wherever necessary.

Result: The mean age of the participants was 35.53 ± 14.24, ranging from 18 to 73 years. Mean knowledge of Covid-19 of the participants was found to be 7.23±1.88. Almost 73.5% of the participants didn't go outside during Covid-19 pandemic, 86% of the participants wore surgical mask/N-95 mask while going outside, 90.5% of the participants maintained minimum physical distance of 2 meters between two or more people, and 89% of the participants used sanitizer or washed their hands after touching any surfaces. Almost all the participants (96.5%) advised a person visiting from abroad or high Covid-19 cases area to stay in quarantine for more than 10 days. There was statistically significant relationship of mean knowledge with age, marital status, education, occupation and monthly income ($p \leq 0.05$).

Conclusion: Majority of the participants had good level of knowledge on COVID-19, positive attitude towards all preventive measures and good practice related to COVID-19 infection.

KEYWORDS: Attitude, COVID-19, Knowledge, Practice

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan City in Hubei Province of China, in December 2019. Coronavirus—an enveloped RNA-virus is broadly distributed among humans. Symptoms of COVID-19 are variable, but often include fever, cough,

headache, fatigue, breathing difficulties, and loss of smell and taste.[1] In Nepal, the first COVID-19 confirmed case was reported on January 13, 2020, in a Nepali student returning home for the holidays from Wuhan, China.[2] In this context, the application of preventive measures such as hygiene practices, social distancing measures, self-quarantines, lockdown, and closure of the non-essential business is the most crucial intervention, which have been applied in many countries to prevent the catastrophic impact of the outbreak. The World Health Organization (WHO) provides recommendations for the basic protective measures for the public to control COVID-19.[3]

To respond to the crisis caused by the global COVID-19 pandemic, a coordinated effort across many sectors of society is necessary.[4] Study by Bhattarai et al. alerted the Nepalese and other governments to act early and proactively during health emergencies and not wait until the disease disrupts their health systems.[5] Nepalese people believed that the use of masks and sanitizers, frequent hand washing, maintaining social distance and manageable lockdown help in preventing the disease.[6] On the other hand the economic recessions in Nepal due to Covid 19 infection have put significant financial pressure on many families.[7]

Targeted health education interventions should be directed to this particular vulnerable population, who may be at increased risk of contracting COVID-19.[8] Study carried out in Indian population in 2020 suggested that there is a need to intensify the awareness program during this COVID-19 pandemic.[9] Similarly, another study involving Pakistani population concluded that health education program to improve the COVID-19 knowledge, attitude, practices and risk factors should be initiated to combat current health challenge.[10] Dental practice was severely affected by the COVID-19 in 2020 in Nepal as most of the dental procedures involve aerosol generation and maintaining physical distance is impractical.[11] During that period most common type of dental emergency during lock down in Nepal is dental pain ,swelling, dento-maxillofacial trauma and broken orthodontic appliances.[12] Sah et at. in their study carried out in Nepalese population of province 2 found that participants had good level of knowledge but practice and compliance were considerably low related to Covid 19.[13] However, no prior study has assessed the knowledge, attitude and practice related to universal safety precautions of COVID-19 among the dental patient of Nepalese population. So this study aimed to assess the knowledge, attitude and practice related to Covid-19 among dental patients visiting PAHS, Pokhara.

MATERIALS AND METHODS

This was an analytical cross-sectional study carried out in the Nepalese adult dental patients visiting Pokhara Academy of Health Sciences, Pokhara, Nepal. Age ≥ 18 years, Nepalese citizen of Gandaki province and no history of previous Covid-19 infection were included in this study. Ethical clearance was obtained from Institutional Review Committee of Pokhara Academy of Health Sciences, Pokhara (Ref no: 51/078) .Written informed consent was obtained from all the participants. Convenient non-probability sampling was used in this study. Sample size was calculated using nMaster 2.0 software. This study considered (95% CI) and 5% absolute precision. Sample size was calculated as 181 considering knowledge about Knowing about viral outbreak as 86.3%.[14] Considering 10% non-response rate sample size has been increased to 200.

Independent variables used in this study were age, sex, marital status, education level, occupation, religion, ethnicity and economic status while the dependent variables were knowledge, attitude and practice related to Covid-19 infection.

A structured questionnaire was developed in Nepali language by reviewing the relevant available literature, WHO and CDC guidelines on COVID-19.[3,14] The questionnaires were organized into four different sections: section I, section II, section III and section IV which contained socio-demographic information, knowledge, attitude and practice towards universal safety precautions of COVID-19 respectively. Total score for knowledge was given 10 (one for each correct response). Data were collected only by the principal author of this study from dental patients visiting Pokhara Academy of Health Sciences from June, 2021 to December, 2021.

Statistical analysis was done using Statistical Package for Social Sciences Version 20 software (SPSS, Inc., Chicago, IL, USA). For all tests, statistical significance was set at $p<0.05$. Descriptive statistics including mean, standard deviation, median, interquartile range, proportion were calculated along with tabulation presentation. To find the comparative performance of various groups in terms of their obtained scores for each of KAP, ANOVA or T Tests was used.

RESULTS

The mean age of the participants was 35.53±14.24, ranging from 18 to 73 years and highest number belonged to age range 21-30 years (33.5%). The majority of the participants were Hindu (88.5%), married (69.5%),

and female (56%). Most of the participants were educated and literate and were involved in their own business (28.5%). The mean knowledge of COVID-19 of the participants was found to be 7.23± 1.88. There was statistically significant relationship of mean knowledge with age, marital status, education, occupation and monthly income ($p \leq 0.05$) (Table 1).

Table 1: Sociodemographic profile of the participants with mean knowledge of COVID-19 (n= 200)

Sociodemographic variables	Number (n= 200)	Percentage (%)	Mean knowledge	P value
Age				
≤20	26	13.0%	7.54±1.52	0.05*
21-30	67	33.5%	7.67±1.66	
31-40	45	22.5%	7.09±1.90	
41-50	27	13.5%	7.00±1.96	
51-60	24	12.0%	6.71±2.21	
>60	11	5.5%	6.09±2.25	
Sex				
Male	88	44.0%	7.36±1.82	0.98t
Female	112	56.0%	7.13±1.92	
Marital status				
Married	139	69.5%	6.90±1.96	0.02t
Unmarried	61	30.5%	7.98±1.43	
Religion				
Hindu	177	88.5%	7.26±1.85	0.31t
Buddhist	18	9.0%	7.00±1.91	
Christian	4	2.0%	6.25±2.98	
Muslim	1	0.5%	10.00	
Education				
Illiterate	16	8.0%	6.13±1.50	<0.001*
Literate	37	18.5%	5.59± 2.32	
High school or below	70	35.0%	7.74±1.35	
Secondary school	45	22.5%	7.40±1.72	
Bachelor and above	32	16.0%	8.31±1.14	
Occupation				
Self-Business	57	28.5%	6.47±2.16	<0.001*
Agriculture	45	22.5%	7.75±1.57	
Others	45	22.5%	7.54±1.39	
Homemaker	31	15.5%	9.17±0.40	
Non-government employee	13	6.5%	7.33±1.15	
Government employee	6	3.0%	6.29±2.13	
Daily Wages	3	1.5%	7.62±1.48	

Monthly Income in NRS				
Less than 10,000	53	26.5%	6.38±2.00	<0.001*
10,000- 30,000	53	26.5%	7.04±2.12	
31,000-50,000	66	33.0%	7.85±1.32	
>50,000	28	14.0%	7.75±1.64	

Note : In Education- literate means who knows how to read and write but have no formal level of education

In Occupation: others include student, tailor, journalists etc.

*= One way ANOVA

t= Independent sample t test

Bold p value indicates statistically significant

The majority of the participants (96.5%) had knowledge about micro-organism responsible for COVID-19, more than 90% of the participants had knowledge about physical distance required to maintain between two persons to prevent Covid-19, general symptoms of Covid-19 and the dental problems required to visit hospital/clinic during COVID-19 pandemic. Among the participants, 89.5% had knowledge on selection of mask and 78.5% had knowledge on selection of sanitizer to get protected from COVID-19. Nearly half of the participants (51.5%) had knowledge about duration of hand wash required for the prevention of COVID-19, while the lowest number of participants (31%) had knowledge on percentage of alcohol used in sanitizer (Table 2).

Table 2: Responses to the questionnaire on COVID-19 knowledge (n=200)

SN	QUESTIONS	Responses n (%)	
		Correct	Incorrect
1	What causes Covid-19?	193 (96.5%)	7 (3.5%)
2	What is the minimum physical distance between two persons to prevent Covid-19?	96 (48.0%)	104 (52.0%)
3	What type of mask do you have to use to get protected from Covid-19?	179 (89.5%)	21 (10.5%)
4	What type of sanitizer do we have to use for Covid-19?	157 (78.5%)	43 (21.5%)
5	What is the percentage of alcohol in sanitizer for Covid-19?	62 (31.0%)	138 (69.0%)
6	How long do we have to wash our hand for Covid-19?	103 (51.5%)	97 (48.5%)
7	What are the general symptoms of Covid-19?	190 (95.0%)	10 (5.0%)
8	For asymptomatic or mild cases of Covid-19, what is the duration of home isolation?	144 (72.0%)	56 (28.0%)
9	In Covid-19 pandemic, for what type of dental problem do you go to hospital/clinic?	181 (90.5%)	19 (9.5%)
10	When you got tested Covid-19 positive, in which condition do you go to hospital?	141 (70.5%)	59 (29.5%)

Majority of the participants strongly agreed with the need of isolation to COVID -19 positive patients, quarantine of contact persons with COVID-19 positive patients, restriction of public events in the place where high cases of COVID-19 are seen, and requirement of lockdown in these areas, and the prohibition of study in physical mode. Most of the participants disagreed with running markets as usual during Covid-19 pandemic; COVID-19 infection as seasonal flu and Nepalese population having higher immunity against COVID-19 as compared to foreign people. In contrast to it, majority of the participants agreed with effectiveness of vaccination against COVID-19 infection, and proper use of surgical mask and sanitizer minimizes the risk of transmission of COVID-19 infection (Table 3)

Table 3: Responses to the questionnaire on COVID-19 attitude (n=200)

SN	QUESTIONS	Responses n (%)				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Covid-19 positive patient should be isolated.	138 (69.0%)	58 (29.0%)	2 (1.0%)	2 (1.0%)	0
2	If you come in contact with Covid-19 positive patient, you will go to quarantine for certain period.	116 (58.0%)	73 (36.5%)	7 (3.5%)	0	4 (2.0%)
3	Public events should be restricted where high cases of Covid-19 are seen.	113 (56.5%)	82 (41.0%)	0	3 (1.5%)	2 (1.0%)
4	Vaccination against Covid-19 is effective.	91 (45.5%)	86 (43.0%)	14 (7.0%)	8 (4.0%)	1 (0.5%)
5	Lockdown should be done in areas where high cases of Covid-19 are seen.	114 (57.0%)	72 (36.0%)	10 (5.0%)	4 (2.0%)	0
6	Study in physical form should be prohibited in school/colleges where high cases of Covid 19 are seen.	119 (59.5%)	61 (30.5%)	7 (3.5%)	4 (2.0%)	4 (2.0%)
7	Markets can be run as usual even during covid 19 pandemic.	29 (14.5%)	21 (10.5%)	10 (5.0%)	79 (39.5%)	61 (30.5%)
8	Proper use of surgical mask and sanitizer minimizes the transmission of Covid 19 infection.	84 (42.0%)	92 (46.0%)	10 (5.0%)	7 (3.5%)	7 (3.5%)
9	Covid-19 infection is like seasonal flu.	18 (9.0%)	23 (11.5%)	6 (3.0%)	93 (46.5%)	59 (29.5%)
10	As compared to foreign people Nepalese population has higher immunity against Covid 19 infection.	34 (17.0%)	37 (18.5%)	28 (14.0%)	74 (37.0%)	27 (13.5%)

In this study, majority (73.5%) of the participants didn't go outside during COVID-19 pandemic unless there is urgency, 86% of the participants wore surgical mask/ N-95 mask while going outside, 90.5% of the participants maintained minimum physical distance of 2 meters between two or more people, and 89% of the participants used sanitizer or washed their hands after touching any surfaces. In contrast to it, 69.5% of the participants didn't participate in public events during COVID-19 pandemic. On the other hand, 90.5% of the participants went to hospital for PCR testing if they developed COVID like symptoms, 91.5% of the participants obeyed the restriction rules by government of Nepal during the COVID-19 pandemic, 89.5% of the participants visited dental clinic/hospital even for elective dental treatment during COVID-19 pandemic, 96.5% of the participants advised a person visiting from abroad or high COVID-19 cases area to stay in quarantine for more than 10 days, and 98.5% of the participants covered their mouth with elbow or any other things while sneezing (Table 4).

Table 4: Practices related to COVID-19 (n=200)

SN	QUESTIONS	Responses n (%)	
		Yes	No
1	Do you go outside during Covid-19 pandemic unless there is urgency?	53 (26.5%)	147 (73.5%)
2	Do you wear surgical mask/ N-95 mask while going outside?	172 (86.0%)	28 (14.0%)
3	Do you maintain minimum physical distance of 2 meters between two or more people?	181 (90.5%)	19 (9.5%)

SN	QUESTIONS	Responses n (%)	
		Yes	No
5	Do you participate in public events during Covid-19 pandemic?	61 (30.5%)	139 (69.5%)
6	Do you go to hospital for PCR testing if you develop Covid like symptoms?	181 (90.5%)	19 (9.5%)
7	Do you obey the restriction rules by government of Nepal during the Covid-19 pandemic?	183 (91.5%)	17 (8.5%)
8	Do you go to dental clinic/hospital for elective dental treatment during Covid-19 pandemic?	179 (89.5%)	21 (10.5%)
9	Do you advice a person visiting from abroad or high Covid-19 cases area to stay in quarantine for more than 10 days?	193 (96.5%)	7 (3.5%)
10	Do you cover your mouth with elbow or anything while sneezing?	197 (98.5%)	3 (1.5%)

Moreover, in this study, there was not any significant relationship between any of the socio-demographic variables with the mean practice (Table 5).

Table 5: Association of sociodemographic variables with mean practice

Sociodemographic variables	Number (n= 200)	Percentage (%)	Mean Practice	P value
Age				
≤20	26	13.0%	8.12±1.53	0.10
21-30	67	33.5%	7.78±1.43	
31-40	45	22.5%	8.27±1.11	
41-50	27	13.5%	8.30±1.43	
51-60	24	12.0%	7.71±1.39	
>60	11	5.5%	7.18±1.83	
Sex				
Male	88	44.0%	7.92±1.33	0.22
Female	112	56.0%	7.99±1.48	
Marital status				
Married	139	69.5%	8.03±1.34	0.09
Unmarried	61	30.5%	7.80±1.56	
Religion				
Hindu	177	88.5%	8.01±1.34	0.07
Buddhist	18	9.0%	7.22±1.89	
Christian	4	2.0%	8.75±1.25	
Muslim	1	0.5%	9.00	
Education				
Illiterate	16	8.0%	7.63± 1.78	0.20
Literate	37	18.5%	7.73 ±1.42	
High school or below	70	35.0%	8.21±1.49	
Secondary school	45	22.5%	7.73±1.28	
Bachelor and above	32	16.0%	8.16±1.13	

Occupation				
Self-Business	57	28.5%	8.19±1.20	0.26
Agriculture	45	22.5%	7.87±1.32	
Others	45	22.5%	7.84±1.58	
Homemaker	31	15.5%	7.55±1.58	
Non-government employee	13	6.5%	8.62±1.19	
Government employee	6	3.0%	8.17±1.60	
Daily Wages	3	1.5%	7.67±2.30	
Monthly Income in NRS				
Less than 10,000	53	26.5%	7.77±1.58	0.13
10,000- 30,000	53	26.5%	8.02±1.30	
31,000-50,000	66	33.0%	7.83±1.48	
>50,000	28	14.0%	8.50±0.96	

DISCUSSION

Knowledge, attitude and practice of people towards COVID-19 infection are important parameters to combat against Covid-19 pandemic. Nepal is a low income country with limited trained manpower and adequate health care facilities.[15] The government of Nepal had also imposed different approaches like awareness programs, social distancing, use of facemask and hand washing, periodic lockdown etc.[16]

A study suggested that Nepalese students had good level of knowledge about COVID-19.[17] Another study emphasized that > 90% of participants were aware of agent, route of transmission and symptoms of COVID-19 and 75 % had knowledge on serious outcome in underlying clinical conditions.[18] Globally social distancing is the most compelling approach to reduce respiratory virus transmission in community.[19] In this study the highest number of participants (96.5%) had knowledge about micro-organism responsible for COVID-19, more than 90% of the participants had knowledge about physical distance required to maintain between two persons to prevent COVID-19, general symptoms of Covid-19 and the dental problems required to visit hospital/clinic during COVID-19 pandemic.

Practice related to COVID-19, 94.3% of the participants were good on hand washing, 95% using sanitizer and 82.9 on social distancing.[13] 85.7% of the participants wash their hand after sneezing and coughing and 93.7% cover their mouth and nose with elbow or tissue while sneezing and coughing.[20] While in this study, 90.5% of the participants maintain minimum physical distance of 2 meters between two or more people, and 89% of the participants use sanitizer or wash their hands after touching any surfaces, and 98.5% of the participants cover their mouth with elbow or any other things while sneezing.

Most of the studies found that there was significant association of knowledge and awareness with practice towards the prevention of COVID-19 infection.[21, 22, 23, 24] A study conducted among musculoskeletal and rheumatic patients in Nepal found that participants were aware of the general clinical features, routes of transmission, and general preventive measures regarding COVID-19 and did not significantly change their treatment practices.[18] Shrestha et al. in their study among community health care workers found that Although most of the study participants possess a good knowledge and positive attitude toward the prevention of COVID-19, still there is a need to orient more HCW's regarding COVID-19 preventive measures.[23] Khanal and Singh found that majority of dentists had good knowledge and awareness but there were certain pitfalls in attitude and practice level.[24]

In addition, significant association was found between education background with knowledge and attitude toward COVID-19 likewise, insignificant association of age, gender, and permanent resident with attitude and practice was found in the study by Neupane et al.[25] The study by Budha Magar and Deo revealed that there was no association between education background

and awareness- and prevention-based knowledge significant association between age and awareness- and prevention-based knowledge was prevalent[22] which agrees with the finding of this study where there was not any significant relationship between any of the socio-demographic variables with the mean practice.

CONCLUSION

Majority of the participants had good level of knowledge on COVID-19 except on the duration of handwashing and percentage of alcohol in sanitizer. Most of the participants had positive attitude towards all preventive measures and good practice related to COVID-19 infection.

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