

Sustainability in Knowledge, Attitude, and Practice of COVID-19 Prevention and Control

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Abstract

This study assessed the coronavirus disease (COVID-19) related knowledge, attitudes, and practices among residents of Nepal during non-pandemic periods. A total of 204 participants took part in the study. The results revealed that 93.6% of participants could identify the major clinical symptoms of COVID-19. Overall, Nepali residents showed good knowledge and attitudes towards COVID-19, but there is room for improvement in their practices. Stakeholders, local governance, and development agencies should focus on promoting and supporting practices to enhance future pandemic control efforts.

Keywords: Coronavirus, sustainability, knowledge, attitudes, practices, Nepal

Introduction

Coronavirus disease (COVID-19) is a global pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in Wuhan, China on December 31, 2019 (Rugarabamu, Ibrahim, & Byanaku, 2020). The World Health Organization (WHO) has been working on response plans to address the COVID-19 pandemic and understand the virus (Devkota et al., 2021). Nepal is also affected by the COVID-19 pandemic, which has had significant impacts on its economy and healthcare exception. Despite implementing preventive measures such as stay-at-home orders, quarantine, and social distancing, Nepal has not been successful in controlling the spread of COVID-19. The effectiveness of these measures depends on the country or organizations like WHO that implement them (Gaire, Panthee, Basyal, Paudel, & Panthee, 2022). The early stages of the pandemic have shown that public knowledge, attitudes, and practices towards the virus play a crucial role in managing the crisis (Taddese et al., 2021). By evaluating public awareness and knowledge about COVID-19, we can gain a deeper understanding of existing awareness and behaviors, which can help identify factors that influence the public's adoption of healthy practices and prompt responses (Yoseph, Tamiso, & Ejeso, 2021).

Several studies have highlighted the need to investigate the knowledge, attitudes, and practices (KAP) towards COVID-19 among people in low and middle-income countries like Nepal, in order to promote a positive attitude and sustain safe behaviors (Zhong et al., 2020). Assessing the public's KAP is important for identifying gaps and strengthening ongoing preventive efforts. Most studies have been conducted during the pandemic period.

This study aims to assess the KAP towards COVID-19 among the Nepalese population in the post-COVID-19 period will examine the sustainability of knowledge, current attitudes, and practices regarding preventive measures, and whether there has been a decline in awareness due to the pandemic. The research will help identify any gaps between KAP during and after the COVID-19 pandemic.

Methodology

Study Design and Setting: A web-based cross-sectional study was conducted in Nepal from January 1st to January 31st, 2023, when there was no fear of COVID-19 in Nepal. The study aimed to assess the knowledge, attitudes, and practices (KAP) of the general population in Nepal. The questionnaire was designed in Nepali and participants were sent a Google link to participate.

Study Population and Sampling: The study included Nepalese residents aged 18 years and above who were Facebook users. A random sampling technique was used to collect the data. The first author had a total of 2237 friends, and after shortlisting for age and residency in Nepal, the total population was 1870. The sample size was determined using the formula: $n = n = Z^2 pq/d^2$ (Singh & Masuku, 2014), resulting in a sample size (n) of 227. Responses received after the specified period were not included in the study. Out of the sample size, 204 (90%) respondents were ready to respond within the specified period.

Data Collection Procedure: Data were collected using the online platform Google Forms. The researcher sent the Google Form and followed up to ensure completion. Those who declined to participate were excluded from the survey. Out of 227 respondents, 204 participated, 2 joined after the specified period, 5 declined to participate, and 16 did not respond. The collected data were cleaned and checked in Excel before being transferred to the Statistical Package for the Social Sciences (SPSS). Participants received an informed consent form and questionnaire in one link. Upon agreeing to participate, they were directed to the main questionnaire.

Instruments: The online questionnaire, designed by the author, consisted of two sections. The first section collected socio-demographic information, while the second section included questions on knowledge, attitudes, and current practices related to COVID-19. The questionnaire had a total of 34 questions, including 10 demographic questions and 24 questions assessing KAP. The knowledge-related questions covered topics such as the cause, symptoms, transmission mode, incubation period, vulnerable groups, and preventive measures of COVID-19.

Data Management and Analysis: The collected data were downloaded into an Excel sheet, cleaned, and checked. The data were then compiled and exported to SPSS version 16 for analysis. The data were analyzed based on demographic factors such as age, sex, caste, religion, and marital status. Frequency tables, measures of central tendency, and measures of dispersion were used to present the data.

Results

Table 1 presents the socio-demographic information of the sample population. Out of the 204 participants, 57.8% were male. The age of the participants ranged from 18 to 72 years, with the majority (45.6%) being below 25 years old. Most participants had a secondary level of education (53.4%),

followed by bachelor's degree or higher (29.9%). More than half of the participants belonged to the Brahman/Chhetri caste (53.4%). Almost all participants owned a mobile phone (98.0%), and the majority had a functional radio or TV at home (79.4%) and internet facilities (63.7%). Approximately 27.0% of the participants had already tested positive for COVID-19.

Table:1 Socio-demographic characteristics of the sample population

	Socio-demographic characteristics of the sample population	
	N	%
Sex		
Male	118	57.8
Female	86	42.2
Age		
Below 25	93	45.6
25-59	70	34.3
60+	41	20.1
Educational level		
Literate and non-formal education	34	16.7
Secondary level	109	53.4
Bachelor and above	61	29.9
Caste		
Brahamin/Chhetri	109	53.4
Janajati (Newar/Gurung/Tamang)	82	40.2
Dalits	13	6.4
Religion		
Hindu	149	73.0
Buddha/Cristian	55	27.0
Marital status		
Married	113	55.4
Others (Unmarried/Separated/Widowhood)	91	44.6
Functional radio TV is in the home		
Yes	162	79.4
No	42	20.6
Self-mobile phone		
Yes	200	98.0
No	4	2.0
Internet facility at home		
Yes	130	63.7

No	74	36.3
Do you previously infected by COVID-19		
Yes	55	27.0
No	149	73.0
Total	204	100.0

Source: Web-based cross-sectional survey 2023.

Assessment of Knowledge: Out of 10 respondents, 9 (93.6%) were able to identify the major clinical symptoms of the pandemic, such as fever, fatigue, dry cough, and difficulty breathing. Additionally, 70.1% of the respondents were aware of the common symptoms in infected individuals, such as a common cold, stuffy and runny nose, and sneezing. Furthermore, 94.6% of the respondents reported that early symptomatic and supportive treatment can help patients recover from the infection.

Regarding the belief that eating meat or contacting wild animals can cause coronavirus infection, 57.4% of the respondents agreed, while 31.9% reported false and 10.8% replied "don't know". In terms of the statement about older adults and obesity being a higher risk factor, 52.0% responded true. Similarly, a majority of respondents (88.2%) believed that COVID-19 cannot spread to others when a fever is not present. Furthermore, 88.2% of the respondents stated that they can control wearing surgical masks as a precautionary measure. For more detailed information on the knowledge of COVID-19 in the post-COVID period, please refer to Table 2.

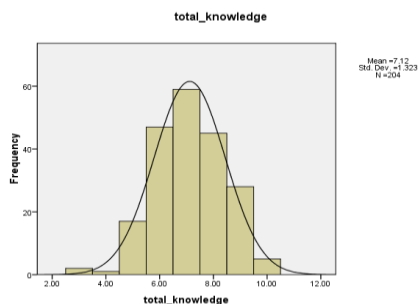


Table 2: Knowledge of symptoms and causes of COVID-19

Statement	Response	N	%
The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and shortness of breath.	True	191	93.6
	False	6	2.9
	I don't know	7	3.4
Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus	True	143	70.1
	False	43	21.1
	I don't know	18	8.8
There currently is no effective cure for COVID-19, but early symptomatic and supportive treatment can help most patients recover from the infection.	True	193	94.6
	False	6	2.9
	I don't know	5	2.5
Not all persons with COVID-19 will develop severe cases. Only those who are elderly, have chronic illnesses, and are obese are more likely to be severe cases.	True	106	52.0
	False	98	48.0
	I don't know	0	0.0
	True	117	57.4

Statement	Response	N	%
Eating or contacting wild animals would result in the infection by the COVID-19 virus.	False	65	31.9
	I don't know	22	10.8
Persons with COVID-19 cannot infect the virus to others when a fever is not present.	True	72	35.3
	False	127	62.3
	I don't know	5	2.5
The COVID-19 virus spreads via respiratory droplets of infected individuals.	True	180	88.2
	False	16	7.8
	I don't know	8	3.9
COVID-19 transmission can occur without fever or any others symptoms	True	100	49.0
	False	95	46.6
	I don't know	9	4.4
COVID-19 can control wearing surgical mask as precaution	True	180	88.2
	False	18	8.8
	I don't know	6	2.9
COVID-2019 can control avoid going to crowded places	True	170	83.3
	False	26	12.7
	I don't know	8	3.9
Total		204	100.0
Total score (Mean= 7.1176, MD =7.0000, Mode = 7.00, Variance = 1.750, SD= 1.32274)			

Source: Web-based cross-sectional survey 2023.

Assessment of Attitude: Regarding attitudes, 68.6% of the respondents believe that ordinary residents can wear general medical masks to prevent COVID-19 infection. Additionally, 97.1% of the respondents believe that avoiding crowded places like train stations and public transportation can help prevent infection. Furthermore, 98% of the respondents believe that isolating and treating infected individuals is an effective way to reduce the spread of the virus. However, 46.1% of the respondents do not believe that COVID-19 will be successfully controlled, and 32.8% do not believe that Nepal will successfully prevent the spread of the pandemic.

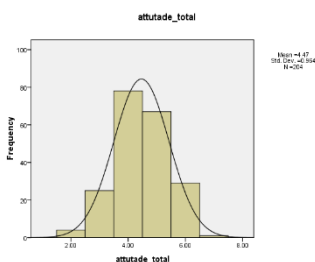


Table 3. Attitude towards COVID-19

Statement	Response	N	%
Ordinary residents can wear general medical masks to prevent the infection by the COVID-19 virus	True	140	68.6
	False	54	26.5
	Don't know	10	4.9
	True	16	7.8

Statement	Response	N	%
It is not necessary for children and young adults to take measures to prevent the infection by the COVID-19 virus	False	186	91.2
	Don't know	2	1.0
To prevent the infection by COVID-19, individuals should avoid going to crowded places such as train stations and avoid taking public transportations	True	198	97.1
	False	4	2.0
	Don't know	2	1.0
Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus	True	200	98.0
	False	4	2.0
	Don't know	0	0.0
People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place. In general, the observation period is 14 days	True	192	94.1
	False	9	4.4
	Don't know	3	1.5
Do you agree that COVID-19 will finally be successfully controlled	Agree	77	37.7
	Disagree	94	46.1
	Don't know	33	16.2
Do you have confidence that Nepal can win the battle against the COVID-19 virus	Yes	88	43.1
	No	67	32.8
	Don't know	49	24.0
Total		204	100.0
Total score (Mean= 4.4657, MD =4.0000, Mode = 4.00, Variance = 0.930, SD= .96429)			

Source: Web-based cross-sectional survey 2023.

Assessment of Practices: More than four-fifths (81.9%) of the respondents reported going to public or crowded places without wearing masks in recent days. The majority of respondents (92.2%) do not practice social distancing, and slightly over half of the respondents (53.4%) do not wash their hands after sneezing or coughing. Among the total respondents, 80.9% stated that they cover their mouth and nose with their elbow or tissue paper when coughing or sneezing, and the majority of respondents (84.3%) have recently followed the hand-washing technique recommended by the World Health Organization (WHO). Approximately half of the respondents (46.6%) reported disposing of their masks when they become moist or after wearing them for at least 8 hours.

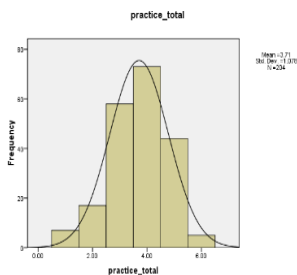


Table 3 shows the practices related to COVID-19.

Question	Response	N	%
Gone to any crowded place without mask.	Yes	167	81.9
	No	37	18.1

Question	Response	N	%
Practicing social distancing	Yes	16	7.8
	No	188	92.2
Wash hands after sneezing or coughing.	Yes	109	53.4
	No	95	46.6
How often touch own face, nose, mouth from hand.	Frequently	33	16.2
	Sometime	171	83.8
Do you cover your mouth and nose with an elbow or tissue while coughing, sneezing.	Yes	165	80.9
	No	5	2.5
	Sometime	34	16.7
Following WHO hand-washing technique	Yes	172	84.3
	No	32	15.7
Disposing of mask when it becomes moist or at least 8 hours after wearing	Yes	95	46.6
	No	30	14.7
	Not using mask	79	38.7
Total		204	100.0
Total score (Mean= 3.7108, MD =4.0000, Mode = 4.00, Variance = 1.162, SD= 1.07808)			

Source: Web-based cross-sectional survey 2023.

Discussion

This study found that 96% of respondents were aware of the clinical signs and symptoms of the COVID-19 pandemic. Additionally, 70.1% of respondents knew the common symptoms of the virus, such as a common cold, stuffy and runny nose, and sneezing. These are consistent with previous research scholarly cohorts of Nepal (Sharma, Khanal, Acharya, Adhikari, & Budhathoki, 2021), medical students of India (Kotian, Faujdar, Kotian, & D’souza, 2020), government medical college in Uttara hand India (Maheshwari, Gupta, Sinha, & Rawat, 2020), Nepal (Dhama et al., 2020), a study in Malaysia (Karthik et al., 2014), chronic disease patients at Addis Zemen hospital, Northwest Ethiopia (Akalu, Ayelign, & Molla), Among the public in the kingdom of Saudi Arabia (Al-Hanawi et al., 2020), and web based survey of Nepal (Rajbanshi et al., 2022). It appears that Nepali residents are generally well-informed about the clinical and common symptoms of COVID-19.

Furthermore, 98%-of respondents agreed that isolating and treating infected individuals is an effective way to reduce the spread of the virus. -This finding aligns with studies conducted in Malasiya (Karthik et al., 2014), chronic disease patients at Addis Zemen hospital, Northwest Ethiopia (Akalu et al.), Among the public in the kingdom of Saudi Arabia (Al-Hanawi et al., 2020), and web-based survey of Nepal (Rajbanshi et al., 2022). Around half of the respondents (46.1%) However, only 46.1% of respondents believed that COVID-19 will eventually be successfully controlled. Additionally, 81.9% of respondents reported going to public or crowded places without masks in recent days, indicating a lack of concern about COVID-19 infection.

Face masks are commonly used as a protective barrier to reduce the transmission of microorganisms between individuals. However, only 46.6% of respondents disposed of their masks when they became moist or after wearing them for at least 8 hours. Previous studies conducted during the COVID-19 pandemic have shown a higher rate of mask usage. People may be disregarding social distancing and mask-wearing measures due to a perceived lack of risk of COVID-19 infection, study in Nepal (Hussain, Garima, Singh, Ram, & Tripti, 2020), Iran (Honarbakhsh, Jahangiri, & Ghaem, 2018; Kumar et al., 2020). It is important to note that masks should not be reused multiple times.

The implications of this study extend beyond identifying the knowledge, attitudes, and practices (KAP) related to the COVID-19 pandemic. The findings can inform the development of programs and strategies to improve KAP regarding COVID-19 in Nepal. This, in turn, can help promote behavior change and control the spread of the pandemic. It is crucial for planners, policymakers, and stakeholders to focus on implementing community-based programs that address both knowledge and behavior related to COVID-19. Simply having knowledge is not enough to change the behavior of the population. Overall, this study provides valuable insights into the KAP of Nepali residents regarding COVID-19. The findings can guide efforts to improve public health measures and control the spread of the virus in Nepal.

Conclusion

This study revealed a good level of knowledge and attitude, but poor behavior in practice towards COVID-19. It suggests that knowledge alone is not enough to change behavior. These findings can help local health authorities and policymakers identify target populations for future awareness programs during infectious disease outbreaks. It is important to focus on enhancing practice through local governance. Collaborative efforts between health service providers, the Ministry of Health and Population, local governments, development partners, schools, colleges, and the media should be implemented as effective tools to promote individual practice.

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