

COVID-19: Knowledge, Attitudes, and Practices among the Scholarly Cohorts of Nepal

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ABSTRACT

COVID-19 is an infectious disease caused by a newly discovered microorganism called corona virus, a pandemic. Knowledge, attitudes and practices are prime components that play a crucial role in spreading the disease. These elements would support focusing on the people with underlying medical problems, and old-aged people, including children, are more likely to be susceptible. The main objective of this study was to assess the knowledge, attitude, and practices amongst the students, teachers, and health workers, including staff members of the NGOs/INGOs. This cross-sectional study was done, including 224 respondents. A self-administered-structured questionnaire comprised of nineteen structured questions exploring the pandemic's knowledge, attitudes and practices was done. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) software version 25.0. Of the total, 67.4% were males, and 32.6% were females. Nearly 50% of the respondents were with M-Phil/PhD degrees, while 4.9% had a secondary level. The study revealed that 28.0% of the participants knew about the pandemic, 41.0% had positive attitudes, and 54.0% experienced good practices. The knowledge level on the pandemic was statistically significant where attitudes and practices were poor. This study suggests that public health approaches such as awareness, mass-education campaigns, etc., are urgently required to control the outbreaks strongly associated with the community's knowledge, attitudes, and behaviours.

Keywords: Coronavirus, Disease, Knowledge, Attitudes, Practices and Nepal

1. INTRODUCTION

COVID-19 is an emerging disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Zhong *et al.* 2020). It has emerged unprecedented global public health and economic crises (JHCRC 2020). The world faces a severe outbreak and acute public health emergencies, a major global health threat Walker *et al.* (2020), with 14,348,858 cases and 60,3691 deaths confirmed by 10:00 CEST, the 20th of July, 2020 (WHO 2020).

In late December 2019, COVID-19 disease was first identified at Wuhan, China. The virus was initially named, 2019 novel Coronaviruses (2019-nCoV) by the WHO, then was updated as SARS-CoV-2, and the name of the disease as Corona Virus disease 2019 (COVID-19) (Lu *et al.* 2020). On the 11th of March 2020, the WHO declared COVID-19 a global pandemic (Alzoubi *et al.* 2020), and most countries (n=214) worldwide had registered COVID-19 cases, including Nepal. There are six types of Coronaviruses; α -CoVs, HCoV-229E, HCoV-NL63, β -CoVs, HCoV-HKU1 and HCoV-OC43 have been identified (Yin & Wunderink 2018; WHO 2020), which are responsible for causing mild to severe respiratory infections. They are similar to the common cold, while the SARS-CoV-2, SARS-CoV and MERS-CoV are implicated as causes for lethal respiratory infections (Zhou *et al.* 2020). The origin of the COVID-19 stuck to the food market in Wuhan province of China, where the bats proposed to be implicated for the main source of SARS-CoV-2 similarity with the bat coronavirus COV RaTG137 (Xu *et al.* 2020) based on its 96.2% genomic.

As of the 20th of July, 2020, a total of 17,994 cases of coronavirus were reported, whereas 12,477 patients were recovered, and the total death cases were 40 (MoHP 2020). The Government has geared up the responses to protect the public from the disease. Nepal had also prepared to take appropriate measures against the COVID-19; the surveillance at the border points, such as self-quarantine, lockdown, curfew, social distancing, use of face mask and tastings, are carried out as the main efforts of Nepal (Larkin *et al.* 2007). Besides these, Nepal had control over the border

areas, including all the international flights and imposed a nationwide lockdown at an initial stage of the pandemic (Rising Nepal 2020).

People's adherence to these controlling measures is vital to guarantee final success. At this critical moment, to facilitate the management of COVID-19 in Nepal, there is an urgent need to evaluate the level of knowledge, awareness and existing practices of the people. This study investigated the knowledge, attitude and practice (KAP) issues amongst the Nepalese residents during the rapid rise of the outbreak.

2. MATERIALS AND METHODS

It is a cross-sectional study performed in April 2020 in Nepal with 224 respondents. The study aimed to evaluate the KAP amongst the specific cohorts i.e., students of secondary and M-Phil/PhD level, teachers/lecturers, health workers and NGO staffs. These groups were represented from the seven provinces of Nepal (See Table 1). Illiterate population was excluded from the study. We calculated the sample size of the respondents' by applying the formula $S = \frac{z^2 \times p \times (1-p)}{m^2}$ presented by Teijlin and Hundley (2005), Sharma and Adhikari (2022) for an infinite population. We consider, 95% confidence level, z value is 1.96; margin of error is 5%. So, the sample size is 384 for the infinite population (Forsyth 2004). The convenient sampling method was applied for selecting the respondents. The study area consisted of all (7) provinces of Nepal; however, we received complete responses/forms from 6 provinces. Before the final data collection, the questionnaire was pre-tested, reviewed and revised based on the outcome of the piloting (Landau & Crc 2004).

The questionnaire was emailed to the respondents (n=384) and finally received only the 224 filled questionnaires from the respondents. Each respondent obtained consent at the initial questionnaire phase by marking whether they wanted to participate in the research. We did not include most incomplete forms (n=85) in the study. Nearly 75 respondents did not respond.

The two quantitative analyses, univariate and bivariate analysis were applied for this study. The univariate analysis shows the frequency and

percentage, and bivariate examines the association between independent and dependent variables (Sharma 2020). A significance level of 95% CI was selected, and then results were reported as significant if $p < 0.05$. Results of $p < 0.05$ and $p < 0.001$ were described as significant (Engle & Berlin 2014). The actual period of the study was mid-March to mid-April 2020, just after the disease outbreak as a pandemic as per the WHO announcement (Shi *et al.* 2020).

3. RESULTS

The below section outlines the key results of the research like: demographic characteristics among respondents, analytical value of the KAP towards the COVID-19, and the mean differences among the students and non-student respondents.

3.1 Demographic Characteristics

The demographic characteristic of the respondents was categorized based on age, marital status,

education, occupation, and residential area. Of the total respondents, 151 were male, and 73 were female. Similarly, of the total, 71.9% fell under the 20 to 40 years old age-groups, 26.5% male was in 40 to 60 years old age group and no female respondents for this age group. Most of the respondents (75.9%) were married, whereas female 12.3% and no male were in these categories.

Concerning the literacy status of the respondents, 46% of the total respondents were with the M-Phil/PhD degree enrolled, nearly 26% of the respondents were with a bachelor degree. Similarly, more than two in five respondents (42.4%) were worked as a teacher and a lecturer, whereas the lowest (8.0%) were health workers. Of the total, 25.9% were staff members of the NGO/INGOs, and nearly the same proportion (23.7%) were students. Almost two in five (38.8%) respondents were from province number three, while no one was involved in the survey from province number six.

Table 1. Demographic characteristic of the respondents.

Demographic characteristics		Gender				Total	
		Male		Female			
		%	n	%	n	%	n
Age	15 to 20 years	11.9	18	9.6	7	11.2	25
	20 to 40 years	61.6	93	90.4	66	71	159
	40 to 60 years	26.5	40	-	-	17.9	40
Marital status	Unmarried	10.6	16	34.2	25	18.3	41
	Married	88.1	133	50.7	37	75.9	170
	Divorced/widow/single	1.3	2	2.7	2	1.8	4
	Others	-	-	12.3	9	4	9
Literacy status (Education)	Secondary degree	7.3	11	-	-	4.9	11
	Bachelor degree	15.9	24	46.6	34	25.9	58
	Master's degree	14.6	22	41.1	30	23.2	52
	M-Phil/PhD degree	62.3	94	12.3	9	46	103
Occupation	Students	12.6	19	46.6	34	23.7	53
	Health workers	6	9	12.3	9	8	18
	Teachers/Lecturers	62.3	94	1.4	1	42.4	95
	Staff of the NGO/INGO	19.2	29	39.7	29	25.9	58
Geographical/ Residential area	Province no. one	7.3	11	2.7	2	5.8	13
	Province no. two	36.4	55	43.8	32	38.8	87

Province no. three	11.9	18	15.1	11	12.9	29
Province no. four	10.6	16	27.4	20	16.1	36
Province no. five	20.5	31	11	8	17.4	39
Province no. six	0	0	0	0	0	0
Province no. seven	13.2	20	0	0	8.9	20
Total	100	151	100	73	100	224

3.2 Assessment of Knowledge

A majority of the respondents (96%) were able to identify the major clinical symptoms of the pandemic, such as fever, fatigue, dry cough, and difficulty in breathing. However, nearly 63% of the respondents were very conscious of the common symptoms in persons infected with the virus, like a common cold, stuffy and running nose, and sneezing. Similarly, 87.1% of respondents have reported that most patients can support an early symptomatic and supportive treatment to recover from the infections. In response to whether older adults, including the obese, are more likely to be a risk, 45.1% responded falsely, while slightly less (42.9%) responded true, the remaining very few (12.1%) revealed do not know. Of the total, 62.1% of respondents replied that eating meat items or contacting the wild animals would cause the coronavirus infection. Correspondingly, a high majority (85.7%) of respondents opposed that the COVID-19 infection cannot spread to others when a fever is not present, whereas only 2.2% were in favour. Of the total respondents, nearly 84% have argued that the virus spreads via the respiratory and droplets from infected persons.

3.3 Assessment of Attitudes

Concerning attitudes, 67% of the respondents have reported that locally prepared masks can prevent infection, and 93% have revealed that children and young adults should also take necessary precautions to prevent the disease. Furthermore, 99% of the respondents have stated that each individual should avoid going to public and crowded places to avoid COVID-19 infection. Likewise, nearly all (99%) of the respondents have emphasized social distancing, isolation, washing up hands, covering the face while coughing and sneezing and treating the

infected people effectively to reduce the spreading of the virus. Besides, 92% of respondents said that the pandemic has stressed people, who have contracted with corona virus-infected persons, should immediately be isolated in the proper place for at least 14 days for the observation. Further, 66.1% believed Nepal could control Corona viruses spreading through an appropriate political decision, while 70.1% believed Nepal could overcome the COVID-19 pandemic.

Differently, of total respondents, 29% revealed that locally prepared masks could not prevent the COVID-19s' infection, and 6.3% stated children and young adults are not necessary to take a precaution to avoid this disease. Of the respondents, 21.9% had no idea whether appropriate political decisions could control coronavirus spreading. Similarly, nearly 30% of respondents were not conforming that Nepal would successfully prevent the spreading of the COVID-19 pandemic.

3.4 Assessment of Practices

A majority (86%) of the total respondents have expressed that they had never been to any public or crowded places in recent days. However, in response to having you wear a mask when you leave home, 83.9% of respondents have worn a mask. Similarly, 83.9% of respondents stated that they washed their hands with soap and water after sneezing and coughing. In response to how often you touch your eyes, face, nose, and mouth with your hands, 59.8% of respondents sometimes reported. In contrast, only 24.1% of the respondents reported rarely and 16.1% frequently. Of the total, 86.6% of respondents revealed they cover their mouth and nose with an elbow and tissue paper while coughing or sneezing.

Table 2. Analytical value of the knowledge, attitudes and practices towards the COVID-19 among the respondents

Knowledge about the COVID-19		Total	
		%	n
1. The following clinical symptoms, such as fever, fatigue, dry cough and shortness or difficulty in breathing, are the major clinical symptoms of the COVID-19?	1	96	215
	0	4	9
	I do not know	0	0
2. Are the flues or common cold, stuffy and running nose, and sneezing the common symptoms of the COVID-19?	1	62.5	140
	0	25.4	57
	I do not know	12.1	27
3. Can early symptomatic and supportive treatment help most patients recover from the coronavirus infection?	1	87.1	195
	0	4.9	11
	I do not know	8	18
4. Are older people with underlying health causes, including the obese, more likely to be at risk of COVID-19?	1	42.9	96
	0	45.1	101
	I do not know	12.1	27
5. Eating meat items or contacting the wild animals would cause the coronavirus infection to the people?	1	62.1	139
	0	13.8	31
	I do not know	24.1	54
6. Is this statement true or false, "A person with the COVID-2019 infection cannot spread the virus to others when a fever is not present"?	1	2.2	5
	0	85.7	192
	I do not know	12.1	27
7. TRUE OR FALSE, the COVID-19 virus can spread via the respiratory droplets from the infected individuals, true or false?	1	83.9	188
	0	8	18
	I do not know	8	18
Knowledge score (mean±SD)		4.4±1.4	
Attitudes about the COVID-19			
8. The community people can wear locally prepared masks to prevent the COVID-19 virus infection	1	67	150
	0	29	65
	I do not know	4	9
9. For children and young adults, it is not necessary to take a precaution to prevent the COVID-19 virus infection.	1	6.3	14
	0	93.8	210
10. To prevent the COVID-19 infection, individuals should avoid going to public and crowded places	1	99.1	222
	0	0.9	2
	I do not know	0	0
11. The effective ways to reduce the spread of the viruses are social distancing, isolation, washing up hands, covering the face while coughing and sneezing and treatment of people infected people	1	98.7	221
	0	1.3	3
	I do not know	0	0

12. People, who have contracted with someone infected with the coronavirus, should be immediately isolated in a proper place for the 14 days observation period?	1	92	206
	0	8	18
	I do not know	0	0
13. Can an appropriate political decision control the spreading of the coronavirus?	1	66.1	148
	0	12.1	27
	I do not know	21.9	49
14. Do you think that Nepal could overcome on spreading of the COVID-19 pandemic?	Yes	70.1	157
	No	29.9	67
	I do not know	0	0
Attitude score (mean ± SD)		5.0±1.15	
Practices about the COVID-19			
15. Have you ever gone to any public or crowded places in recent days?	Yes	14.28	32
	No	85.71	192
	I do not know	0	0
16. Nowadays, do you wear a mask when you are leaving home?	Yes	83.9	188
	No	16.1	36
	I do not know	-	-
17. Do you wash your hands with soap and water after sneezing and coughing?	Yes	83.9	188
	No	4	9
	May be	12.1	27
18. How often do you touch your eyes, face, nose, mouth with your hand?	Frequently	16.1	36
	Sometimes	59.8	134
	Rarely	24.1	54
19. Do you cover your mouth and nose with an elbow or tissue while coughing or sneezing?	Yes	86.6	194
	No	4	9
	May be	9.4	21
Practices score (mean ± SD)		2.8±1.02	
Total		100	224

Note. (%: per cent, N: number)

3.5 The Mean Differences of KAP Between Students and Non-Students

This section signifies the mean, mean-difference and P-value of the knowledge, attitudes, and practices among the students, health workers, and teachers regarding the COVID-19. However, the findings of this study statistically found sufficient knowledge of the respondents about the COVID-19. Furthermore, the p-values of knowledge, attitudes, and practices showed 0.606, 0.046, and 0.011, respectively. The results concluded with no significant difference in understanding between

students and non-student groups. In contrast, the attitudes and practices of students and non-student respondents showed statistically significant. On the other hand, this showed that proper knowledge is insufficient to protect from viruses. To prevent COVID-19, people should strictly imply their adequate knowledge.

Significantly, the table below illustrates the respondents' knowledge of the COVID-19 virus (mean±SD) was 4.4±1.4. However, the overall attitude mean score (mean±SD) was 5.0±1.15, and the practice score mean ± SD was 2.8±1.02.

Table 3. Independent sample test regarding the mean difference of knowledge, attitude and practice between students and non-students*

	T	D. F.	Significance (2-tailed)	Mean \pm SD	Mean Differences
Knowledge	-0.517	222	0.606	4.4 \pm 1.4	-0.109
Attitude	-2.002	222	0.046	5.0 \pm 1.15	-0.359
Practice	-2.64	61	0.011	2.8 \pm 1.02	-0.667

*Teachers/lecturers, health workers, and NGO/INGOs job holders

4. DISCUSSION

The discussion section has been divided into three parts: knowledge, attitudes, and practices, which discussed the outcomes of this study, compared with other relevant studies done and critically reviewed the issues.

4.1 Knowledge

This study showed that 96% of respondents knew the clinical signs and symptoms of pandemic were statistically significant. This finding was similar to the previous research carried out by Mustafa *et al.* (2020) that the overall knowledge about the symptoms and unavailability of specific antiviral treatments against the COVID-19 was found satisfactory. However, 90% of the respondents have adequate knowledge about the symptoms of pandemic disease and above 80% of respondents have information about the unavailability of vaccines (Alzoubi *et al.* 2020). Likewise, the findings of the knowledge of the COVID-19, the present study found a good association with the respondents' understanding and the similar information found that articulated by the literature and the media. The findings were identical the study conducted by Dharma *et al.* (2020) in which the majority of the respondents (96%) found familiar with the symptoms of COVID-19 such as a common cold, runny nose and the sneezing.

On the other hand, a quarter of respondents have found the common cold, runny nose and sneezing were typical symptoms of

pandemic disease, whereas only 12.1% were found unknown about symptoms. This could be the symptoms of seasonal influenza and as the COVID-19 are the same. Two in three of the respondents were optimistic that the COVID-19 can be managed efficiently, and most of the respondents (70%) have complete confidence that Nepal might overcome the problems of the pandemic; however, nearly 22% were pessimistic, and 30% of disagreed that Nepal might succeed to win against the disease. The scenario of the disagreement of the issue around controlling the pandemic was a bit controversial. Concerning 30% disagreement is supported by the various literatures that there is no specific antiviral drug or vaccine available for the virus (Huang *et al.* 2020).

4.2 Attitudes

This study revealed that the majority of the respondents had shown positive attitudes towards the pandemic disease. In line with the present study, a cohort study conducted in Malaysia in 2020, stating that most respondents had positive attitudes toward controlling the COVID-19 (Azlan *et al.* 2020). Similar research reported that the Malaysian Government handling health crises was responsible for developing people's positive attitudes towards COVID-19. Another study conducted in China by Zhong *et al.* (2020) revealed that the high levels of positive attitudes in the KAP survey as similar to this study. The researchers have attributed the positive attitudes to the drastic measures taken by the Chinese Government in mitigating

the spread of the coronavirus. However, the findings of this investigation and the study conducted in China showed an association with higher levels of understanding with higher confidence and positive attitudes in a health crisis (Shi *et al.* 2020).

According to the present findings, nearly 66% of respondents were confident that Nepal could efficiently succeed in controlling the spreading of the coronavirus, and 70.1% were optimistic that Nepal could tackle this condition. A similar study in China revealed that nearly 91% of respondents had confidence in the control of COVID-19, and 97.1% of respondents believed that China could control overspreading of the virus (Zhong *et al.* 2020). These results explained that the Chinese people have better attitudes than Nepalese towards the coronavirus because China has a better healthcare system and facilities and a high level of awareness than Nepal (Zhong *et al.* 2020). Likewise, the second reason could be the better economic status of the country than Nepal (Thisted 2020).

4.3 Practices

In the current study, a large majority of respondents (85.71%) have reported that they have compulsorily adhered to preventive measures such as avoiding crowded places, wearing a mask, etc., in recent days routinely. The present study's result is consistent with the previous study done by Azlan *et al.* (2020) that also revealed most respondents were taking precautions, not attending crowded places and practicing proper hand hygiene in the week before the MCO was implemented. It denotes a general willingness of respondents to make behavioral changes to be safe from the COVID spread. The previous research conducted about SARS concluded that 60% were afraid to travel due to SARS, 69% were afraid of contacting people affected by SARS, and a similar proportion, 63%, avoided unnecessary travel to endemic areas (Abdulbari 2004). The study reveals that the

people were aware of their health from novel diseases and uncertainty.

Similarly, the study demonstrated that most respondents (83.9%) did not wear a mask when leaving home. However, the same proportion of the respondents did wash their hands with soap water after sneezing and coughing. These practices are familiar to everyone to prevent many respiratory transmitted infections, including COVID-19 (Gillham 2000). Nevertheless, fewer (16.1%) respondents said they do not wear masks, and 4% do not wash their hands with soap water after sneezing and coughing. This statistic indicates that fewer respondents did not adopt precautions towards COVID-19 which happened due to insufficient knowledge and negligence towards the disease. Also, it is a reflection of the community people and their perception of COVID-19.

5. CONCLUSION

The findings suggested the Nepalese people have reasonable knowledge and generally found very positive views about COVID-19. However, the study found no statistically significant differences between the students and non-students' cohorts in understanding COVID-19. Additionally, the attitudes and practices of students and non-students showed statistical significance in controlling the disease. Thus, this study strongly suggests focusing on the Government's rules and regulations, including the safety protocol that the WHO guidelines. Besides, the public health approaches such as massive awareness campaigns, scientific strategies based on the WHO guidelines, etc., are urgently required to control the COVID-19. It also needs to focus on the related knowledge, attitudes, and behaviours.

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