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Original Research Article

Public's view on myths related to COVID-19: a web-based cross-sectional study in Nepal

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ABSTRACT

Background: The global pandemic COVID-19 has created havoc. Various myths prevail among public that hamper them from adopting evidence based preventive measures to minimize the spread of COVID-19 and to seek timely health advice. The aim of the study was to find out the public's view on myths related to COVID-19 in educated Nepalese population.
Methods: A cross-sectional web-based online survey was conducted in educated public in Nepal during May, 2020. A self-designed questionnaire consisting of sociodemographic variables and 21 myths was prepared using Google forms via docs.google.com/forms. The responses were recorded on a 3-point scale (agree, disagree, do not know). The Google form link was sent to the study participants via the social media platforms like Facebook, WhatsApp and Viber. Descriptive statistics mean, frequency and percentage were used to analyze the data using SPSS version 22.
Results: Out of 270, 33.7%, 33.3% and 37% participants agreed that eating lemon, turmeric and garlic prevents us from COVID-19 respectively. Thirty seven percent participants believed that spraying bleach or disinfectant into our body will protect us against COVID-19. The overall view of participants toward the myths related to COVID-19 was 'agree' (17.3%), 'disagree' (59.2%) and 'don't know' (23.5%).
Conclusions: Myths regarding COVID-19 prevailed among majority of the participants in this study. There is an urgent need to educate the public regarding various preventive approaches for COVID-19 issues. Media and government agencies have a vital role in creating awareness to adopt evidence-based facts.

Keywords: COVID-19, Myths, Nepal, Public, View

INTRODUCTION

Coronavirus disease (COVID-19) is a zoonotic viral infection affecting people globally. It has been declared a pandemic being a global health emergency. There were 11,216,481 total cases with 529,526 deaths worldwide and 15,259 cases and 32 deaths in Nepal as per of July 4, 2020.[1] Prevention of human-to-human transmission is of prime importance in absence of any vaccine and medical treatment for COVID-19 and it is one of the major objectives laid by the World Health Organization (WHO) at the current stage.[2]

Since its outbreak in China in December 2019, there has been an explosion of information on COVID-19 across various social media platforms globally. Misinformation is one of the biggest problems during outbreak of any new disease in the community.[3] Myths related to COVID-19 are being spread among the community through propaganda and fake news despite creating awareness and providing adequate information to the general public.[4,5] The prevailing myths related to COVID-19 infection are related to the spread of infection, source of infection, preventive measures and its cure.[6] There are more than 3,500 false or misleading pieces of information in more than 70 countries and 40 languages. One-third of social media users have reported seeing false or misinformation

about the COVID-19.[7] The myths are mainly spreading through various social media.[8-10] The myths can lead to reduction in evidence-based medical practices in the community and can alter people's observations and practice towards the disease. The myths can also lead to a false sense of security of being immune to the infection. It makes hard for people to find reliable guidance when they need it. Widespread misinformation hampers public health efforts to control the disease outbreak and confuses the public.[11] Sociocultural factors, false traditional beliefs, lack of proper education and non-scientific knowledge may seed myths about COVID-19 virus.[12]

The Nepalese government has been providing information and awareness programs on COVID-19 to the people through the television, newspapers and other media; however, various myths are also spreading and it seems to be prevalent among educated as well as uneducated people.[8,9] In Nepal, a country of diverse ethnic groups, geographical character, cultures Quantification of these myths among Nepalese community is needed so that educational program can be formulated and implemented timely. Few data are available related to this subject. With this study, we hope to achieve a better understanding of the public's view on myths related to COVID-19 among general educated Nepalese people. The objective of the study was to know the public's view on myths related to COVID-19 in educated Nepalese population.

METHODS

A cross-sectional web-based survey was conducted in general public in Nepal during May, 2020. The general public aged 18 years and above and having the ability to read and write were enrolled in the study. A convenience sampling method was used. The instrument for the survey was a self-designed questionnaire prepared based on most commonly prevalent myths among the general population.[13,14] The questionnaire consisted of sociodemographic data and views on myths related to COVID-19. A total of 21 myths were studied and the responses were recorded on a 3-point scale as "agree", "disagree", "do not know"). Gender, age group, residence, educational qualification and occupation were the independent variables and public's view was the dependent variable.

The questionnaire was prepared in English and translated to Nepali language. It was again back translated to English by another independent translator and the content was reviewed by the research team and the subject experts for relevance, simplicity and internal consistency. A Google form was prepared via docs.google.com/forms and the link was sent to the study participants via the social media platforms like Facebook, WhatsApp and Viber. Upon clicking on the link, it assured the confidentiality of data, informed the public of the study objective and stated that the study participation was purely voluntary. No incentive was given. Only the principal investigator had access to the data and personal details like e-mail address, phone number and name were not collected to maintain the confidentiality of the study participants.

The reliability and validity of the questionnaire was confirmed by sending the questionnaire to the three subject experts. A pilot testing was conducted in 20 public to ensure face validity, comprehension and feasibility. The Cronbach's alpha reliability coefficient was found to be 0.79 which was considered satisfactory for this study. The pilot study responses were excluded from the main analysis. The study was performed following the Declaration of Helsinki.[15] This study was conducted and reported according to the checklist for reporting results of internet e-surveys guidelines.[16]

The filled questionnaires were extracted from the Google Forms and exported to a Microsoft Excel 2010 sheet. Descriptive statistics like mean, frequency and percentage were calculated to analyse the data using statistical package for the social sciences (SPSS) software version 22. The results were presented as tables and graphs.

RESULTS

The Google form link was sent to 500 participants and a total of 270 responded giving the response rate of 54%. Majority were male (87%) and belonged to the age group of 18-45 years (70.4%). Most of them had completed a bachelor degree (68.5%) and were employed (77.8%). One hundred and fifty participants (63%) were from province 2 (Table 1).

Table 1: Sociodemographic characteristics (n=270).

Variables		Frequency	Percentage
Age group (years)	18-45	190	70.4
	>45	80	29.6
Gender	Male	235	87.0
	Female	35	13.0
Marital status	Married	225	83.3
	Unmarried	45	16.7
Residence	Province 1	55	20.4
	Province 2	170	63.0

Continued.

Variables		Frequency	Percentage
	Province 3	35	13
	Province 5	5	1.9
	Province 7	5	1.9
Educational level	Secondary level	35	13.0
	Higher secondary level	50	18.5
	Bachelor level and above	185	68.5
Occupation	Unemployed	60	22.2
	Employed	210	77.8

Table 2: Publics' view on myths related to COVID-19 (n=270).

S. no.	Variables	Responses	Frequency	Percentage
1	Only a dry cough is a symptom of COVID-19. If I have a runny nose or sputum, I do not have COVID-19.	Agree	90	33.3
		Disagree	115	42.6
		I do not know	65	24.1
2	Regularly rinsing our nose with saline or hot water can help prevent infection with the coronavirus.	Agree	40	14.8
		Disagree	150	55.6
		I do not know	80	29.6
3	Washing hands with hot water protects us against COVID-19.	Agree	55	20.4
		Disagree	130	48.1
		I do not know	85	31.5
4	Taking a hot bath prevents the coronavirus disease.	Agree	45	16.7
		Disagree	140	51.9
		I do not know	85	31.5
5	Drinking lots of water every 15 minutes flushes out the coronavirus and protects against COVID-19.	Agree	35	13.0
		Disagree	195	72.2
		I do not know	40	14.8
6	Sunlight kills the coronavirus and prevents us from infection from it.	Agree	75	27.8
		Disagree	115	42.6
		I do not know	80	29.6
7	Cold weather and snow can kill the coronavirus.	Agree	3	1.1
		Disagree	212	78.5
		I do not know	55	20.4
8	Eating lemon prevents us from COVID-19	Agree	100	37.0
		Disagree	105	38.9
		I do not know	65	24.1
9	Eating turmeric prevents us from COVID-19.	Agree	90	33.3
		Disagree	115	42.6
		I do not know	65	24.1
10	Eating garlic can help prevent infection with the coronavirus.	Agree	100	37.0
		Disagree	115	42.6
		I do not know	55	20.4
11	Drinking methanol, ethanol or bleach prevents or cures COVID-19.	Agree	15	5.6
		Disagree	220	81.5
		I do not know	35	13.0
12	Easting hygienically prepared and well-cooked chicken causes the spread of the coronavirus.	Agree	25	9.3
		Disagree	195	72.2
		I do not know	50	18.5
13	Eating frozen foods and ice-cream spreads the coronavirus.	Agree	75	27.8
		Disagree	145	53.7
		I do not know	50	18.5
14	Adding pepper to your soup or other meals prevent or cure COVID-19.	Agree	5	1.9
		Disagree	165	61.1
		I do not know	100	37.0

Continued.

S. no.	Variables	Responses	Frequency	Percentage
15	Spraying bleach or disinfectant into our body will protect us against COVID-19.	Agree	100	37.0
		Disagree	125	46.3
		I do not know	45	16.7
16	The coronavirus can be transmitted through mosquito bites.	Agree	0	0
		Disagree	210	77.8
		I do not know	60	22.2
17	COVID-19 is transmitted through houseflies.	Agree	45	16.7
		Disagree	145	53.7
		I do not know	80	29.6
18	5G mobile networks spreads COVID-19	Agree	7	2.6
		Disagree	165	61.1
		I do not know	98	36.3
19	Catching the coronavirus means we will have it for life.	Agree	5	1.9
		Disagree	245	90.7
		I do not know	20	7.4
20	Thermal scanners can detect COVID-19.	Agree	40	14.8
		Disagree	190	70.4
		I do not know	40	14.8
21	Antibiotics are effective in preventing and treating the coronavirus.	Agree	30	11.1
		Disagree	160	59.3
		I do not know	80	29.6

Table 2 represents the public's view on myths related to COVID-19. Out of 270 participants, 33.3% agreed to the myth related to the symptom of COVID-19. More than half of the participants (55.6%) disagreed that regularly rinsing our nose with saline can help prevent infection with the coronavirus. Similarly, 20.4% agreed that washing hands with hot water protects us against COVID-19. 337%, 33.3% and 37% participants agreed that eating lemon, turmeric and garlic prevents us from COVID-19 respectively. Thirty seven percent participants believed that spraying bleach or disinfectant into our body will protect us against COVID-19. 16.7% participants believed that COVID-19 is transmitted through houseflies. 14.8% participants agreed that thermal scanners can detect COVID-19. 11.1% participants believed that antibiotics are effective in preventing and treating the coronavirus. The overall view of participants toward the myths related to COVID-19 was 'agree' (17.3%), 'disagree' (59.2%) and 'don't know' (23.5%).

DISCUSSION

It is of utmost importance to know the public's view on myths related to COVID-19 as its understanding is essential to provide health education to them.[17] Online survey could be promising in assessing and tracking perceptions during a pandemic like COVID-19. This is the first online web-based study in Nepal to explore the public's view on myths related to COVID-19. It highlighted that majority of the public believed in many myths related to COVID-19. Two out of five public either believed the myths or not sure about it. A misinformed public could undermine efforts to control the pandemic. The coronavirus crisis is being exacerbated by the public's believe in the myths.

One third of the public believed that only a dry cough is a symptom of COVID-19 and if we have a runny nose or sputum, we do not have COVID-19. The most common signs and symptoms of COVID-19 are fever, tiredness and dry cough and some patients may have malaise, nasal congestion, runny nose or sore throat.13 Therefore, the public need to be educated regarding symptoms of COVID-19. Ignoring the early and non-specific symptoms may lead to spread of COVID-19. A significant proportion of the public believed that washing hands with hot water, rinsing our nose with saline or hot water and washing hands with hot water protect us against COVID-19. Till date, there is no scientific evidence to support these claims. The WHO has advised drinking water frequently to avoid dehydration and it can wash the virus down to the stomach; however, drinking too hot water can be harmful to gastrointestinal tract and there is also lack of data to support the killing effect of hot water against the coronavirus.13 There is some limited evidence that regularly rinsing the nose with saline can help people recover more quickly from the common cold; however, regularly rinsing the nose has not been proved to prevent coronavirus infection. There is not any supporting evidence that washing hand with hot water alone is sufficient to prevent the infection with COVID-19. The WHO recommends hand washing with soap and water or cleaning with alcohol-based hand sanitizer.[14]

There is also some misconception among the one fifth of the public that taking hot bath prevents the coronavirus

disease. Taking a hot bath will not prevent us from being infected with COVID-19. Our normal body temperature remains around 36.5 to 37°C, regardless of the temperature of the bath or shower.14 Nearly one third public believed that sunlight kills the coronavirus and prevents us from infection from it. The fact is that anyone can be infected with COVID-19, no matter how sunny or hot the weather is. Many countries with hot weather have reported cases of COVID-19.[14]

The idea that if we consume certain kinds of food, we will not get the coronavirus infection, is one of the myths related to COVID-19 in our country. More than one third public believed that eating lemon, turmeric and garlic can prevent infection with coronavirus. These foods have vitamins and antioxidants that can help boost the immune system.[18-21] However, there's no evidence that eating these foods prevents infection with the coronavirus. Therefore, it is not evidence based to promote eating of these food solely for prevention of COVID-19.[14] The proven preventive methods for COVID-19 is maintaining at least 6 feet distance from other public, washing hands regularly with soap and water or alcohol-based hand sanitizer, wearing face-masks and seeking test and help if we have fever, difficult breathing, persistent cough and sudden loss of sense of taste and smell.[14]

More than one third public believed that eating frozen foods and ice-cream spreads the coronavirus. There is no scientific evidence till date to support this. Because of poor survivability of these coronaviruses on surfaces, there is very low risk of its spread from food products or packaging that are shipped over a period of days or weeks at ambient, refrigerated or frozen temperatures.[13] Most of the public disagreed that the drinking methanol, ethanol or bleach prevents or cures COVID-19. These substances are known poisons and are sometimes used in cleaning surfaces to kill the viruses. Diluted bleach or alcohol can be used for cleaning our hands; however, these substances should never be drunk as it will harm the internal organs.[14] Nearly two fifth public believed that spraying bleach or disinfectant into our body will protect us against COVID-19. Bleach or any other disinfectant should not be sprayed or introduced into our body as these substances can be poisonous if ingested and also cause irritation and damage to the skin and eyes. Bleach and disinfectant should be used carefully to disinfect surfaces only.[14] Significant proportion of the public did not know whether the COVID-19 is transmitted through mosquito bites and houseflies. To date, there is no evidence or information to suggest that the COVID-19 virus transmitted through houseflies and mosquitoes. The virus spreads primarily through droplets generated when an infected person coughs, sneezes or speaks.[14] A vast number of public believed that thermal scanners can detect COVID-19. Thermal scanners are effective in detecting people who have a fever and it cannot detect people who are infected with COVID-19.

One out 10 public believed that antibiotics are effective in preventing and treating the coronavirus. Antibiotics work only against bacteria, not viruses. COVID-19 is caused by a virus, and therefore antibiotics should not be used for its prevention or treatment.[14] More than one third of public did not know that 5G mobile networks do not spread COVID-19. Viruses cannot travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks.[14]

Sociocultural factors, false traditional beliefs, lack of proper education and nonscientific knowledge may seed myths about COVID-19 virus.[12] The Government and the media have a significant role in dealing with the prevailing and emerging myths related to COVID-19. Leaders and health officials should look at the evidence before endorsing anything related to spreading, prevention and treatment of COVID-19 and they should look at the evidence, rather than blindly supporting the same.[6] Additionally, strict legal action needs to be taken against people spreading fake news or making false claims during the pandemic. More and more stringent action and punishments must be declared by the Judiciary system to control the spread of myths/fake claims. The social media like Facebook, WhatsApp, Viber, Twitter and others should act to remove the myths related to COVID-19.

Adequate knowledge regarding myths related to COVID is required so that the general public can adopt evidence-based measures to prevent the infection with coronavirus and seek medical care in promptly in case of possible infection. Based on these findings, we recommend the evidence-based information regarding COVID-19 to be made more readily available to the general population. This can be done through the television, newspaper, radio and social media like Viber, WhatsApp and Facebook to target the public.

The present study has some limitations. The study had a low response rate and this limits the generalization of the study findings to whole country. Some of the myths might not be included in the survey. The study findings might be influenced by recall and information bias. Being a web-based study, it might not include the responses from the regions with the restricted access to social media and might be influenced by geographical and coverage bias. It is possible that some participants may have randomly selected responses to spend the least amount of time. The participants might have looked up the answers to some of the questions online before answering.

CONCLUSION

Myths regarding COVID-19 prevailed among majority of the participants in this study. This might act as an access barrier in the utilization of evidence based preventive measure. The findings from this online study could guide policy makers, public health authorities, government, clinicians and the media to correct these misconceptions

by rectifying the myths and to make the public more aware and educated regarding COVID-19. A proper and planned educational program is the need during the pandemic that can help change public's view from following the unhealthy/un-acceptable myths.

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