Research Article

Roles of Mass Media in Shaping Knowledge and Perception Related to Covid-19

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Abstract

Background: COVID-19 is an emerging disease that has been creating global havoc. Since it was a newly emerged disease, only a little information was known at the initial phase. Later, correct information and prevention measures were provided throughout the globe via a different outlet, but the prevailing myths and misconceptions still followed. ***Objective***: To assess the role of mass media on knowledge and perception related to COVID-19 among the students. ***Methodology***: A descriptive cross-sectional study was conducted to identify the role of mass media in shaping the knowledge and perception related to COVID-19 among the students of Bharatpur, Chitwan. Samples were selected by using a stratified random sampling method and data was collected by using self-administered structured questionnaires and IBM SPSS was used for analysis in descriptive and inferential statistics. ***Results***: Out of the 103 respondents, 13.6% were male and 86.5% were females, 86.4 % were age more than 23years. Among which, 88.8% used mass media for obtaining information where 67.3% used it daily and the most preferable media was social media (70.4%). Similarly, 74.8% of respondents had fair knowledge, (15.5%) respondents had good knowledge, and 97.1% of the respondents had a positive perception regarding Covid-19. Respondent's most preferable media (social media) was significantly associated with the level of knowledge of the respondents (p=0.047). ***Conclusion***: The study concludes that the respondents had positive perceptions, but the knowledge level was more fair knowledge and very limited good knowledge, which signifies that there is still a need for awareness programs, campaigns, and other educational interventions.

Background

The small flu-like outbreak started in Wuhan, China, in December 2019, which has now snowballed into a serious global pandemic, i.e., COVID-19. COVID-19 is a zoonotic disease which transfer human-to-human through droplets, personal contacts, or by contaminated surfaces (https://www.who.int/news-room/q-a-detail/q-a-coronaviruses). There are more than 245 million confirmed cases and almost 5 million confirmed deaths globally, while in Nepal**,** almost 811,897 confirmed cases and 11,388 confirmed deaths. (https://covid19.who.int/0ctober20,2021).

Mass media are a powerful and effective force to curb the spreading of an emergency disease that cover a large segment of populations at once as needed. On top of it, WHO stated that the importance of media advocacy to be a programmed strategy for health promotion and infection and injuries prevention

http://www.who.int/healthpromotion/conferences/previous/ottawa/en. Even in the context of different pandemic and epidemic situations, like SARS, Influenza flu, HIV/AIDS, large media coverage was done to contact tracing, provide isolation, inform the public, and encourage people in precautionary measures and to seek treatment. (Lau *et al*., 2003; Ott *et al*., 2007; Vidanapathirana *et al*., 2005)

During various communicable disease outbreaks, information is provided through multifaceted sources, for example, during the H1N1 influenza pandemic, a study was carried on Israel, where there were a number of media reports i.e. 1,812 (14.3% radio broadcasts, 9.8% television broadcasts, 27.5% newspaper articles, and 48.5% major website reports). Currently, during the COVID-19 pandemic, a study in Jordan showed social media (34.5%) to be the most common source (Codish *et al*., 2014; Nour *et al*., 2015; Alzoubi *et al*., 2020)**.**

Mass media has both positive and negative influence on people. Through the course of the pandemic, the "infodemic" response can be accompanied hugely by the general people, WHO even referred to this to be the "second disease"(https://www.who.int/teams/risk-communication/infodemic-management)

According to the Bruno Kessler Foundation, about 46% of the post comes from unreliable sources which can lead to imminent physical harm and additional fear and anxiety among people (Kolianov, 2020)

Arrays of people from different sectors are increasingly promoting pragmatic views of the mass media such as an information 'distribution network', behaviour-modifying 'tool sets', or agenda-setting 'vehicles' (Karasneh *et al*., 2021). Pervasive and authentic media coverage can be a key factor for the desensitization of health threats at the given time and practice.

Thus, in this globally crucial situation where mass media is one of the major tools for combating COVID-19, the researcher aims to conduct a study on the role of mass media in shaping knowledge and perception during COVID-19.

Materials and Methods

A descriptive cross-sectional study was adopted to assess the role of mass media in shaping knowledge and perception related to COVID-19 among the students. The study was conducted among the Bachelor undergraduate students studying in Nepal Polytechnic Institute, Bharatpur-11 Chitwan, for researchers' convenience.

In this study, researchers identified the population and different strata. From each stratum, the researcher obtained a simple random sample size proportional to the size of the strata. There were 8 semesters in Bachelor of Science in Agricultural and each semester was considered as a stratum, so there were 8 stratums. Then, to evaluate each stratum

sample size, researchers used the formula. After that, with the lottery method, each member of the stratum population's roll number was noted in the paper and those numbers were selected randomly.

Sample size was calculated using the $n=(z^2pq)/\{e^2 + (z^2pq)/N\}$, where, N = Population size = 288, z= standard normal deviation of the required value is 1.96, p= prevalence regarding the knowledge about the disease estimated is 90 % = 0.9 (Hamed et. al) and error of 5%

Then, to evaluate each strata sample size, the researcher has used the formula. N = (Sample size/Total population)xStratum population

After that, with the lottery method, each member of the stratum population's roll number was noted in the paper and those numbers were selected randomly. A self-administered questionnaire was developed to assess the role of mass media on knowledge and perception regarding COVID-19 and was distributed for them to have it filled by them. The instrument consists of 3 parts: Questions related to socio-demographic variables and mass media as a source of information collection regarding COVID-19, questions related to assessing knowledge regarding COVID-19 and questions related to assessing the perception regarding COVID-19.

The content validity was maintained by thoroughly reviewing the literature, subject matter experts. The questionnaire was prepared in the English language. After pretesting of the instrument necessary modifications were made and those samples were excluded from the main study.

Firstly, formal approval to conduct the research was taken from NPI- Narayani Samudayik Hospital, College of Nursing. Then, administrative approval from Nepal Polytechnic Institute, Bharatpur-11 was taken from the concerned authorities. Written and verbal consent was obtained from respondents. Data was collected from the respondents by using a self-administered structured questionnaire. Respondents were assured that anonymity was maintained to the information provided by using the code system. It was also informed to the respondent that their dignity was maintained, and they were allowed to withdraw from the study at any time if they wish.

The collected data was checked, reviewed, organized for accuracy, completeness, and correctness. Then the data collected was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 20. It was interpreted by using the descriptive statistical method in terms of frequency and percentage, mean and median, and inferential statistics (Chi-square test, likelihood test) were used to find the association between mass media and knowledge and perception.

Results

Out of 103 respondents, the majority (78.6%) of the respondents were females. Similarly, 86.4 % were age more than 23years old. The mean age of the respondents was 20.96years. As regards the educational level, 35.9% were in the second semester, 33.7% were in the fourth semester, and 27.6% were in the sixth semester. While asking about whether they use media for gaining information or not, 88.8% responded by saying they do. Likewise, for the frequency of use of media, 67.3% used it daily, 22.4% used weekly, and 7.1 % used it monthly to obtain information (Table 1).

The preferable media for obtaining information. Among all sources, the most used was social media (69). Likewise, the internet (82) was most often used, followed by television (43) which was sometimes used. Radio (62) and print media (61) were among the least used sources as per the respondents (Fig. 1).

Likewise, most of the people believed COVID to be originated from birds (43.7%). Similarly, most people said

COVID was transmitted via contact and droplets (70.9%). Regarding the number of days for symptoms to appear, most people responded saying 7-14days. Considering all major symptoms, skin rash (63.1%) was thought to be exceptional (Table 2).

Table 1: Socio-demographic Characteristics of the Respondent (n =103)

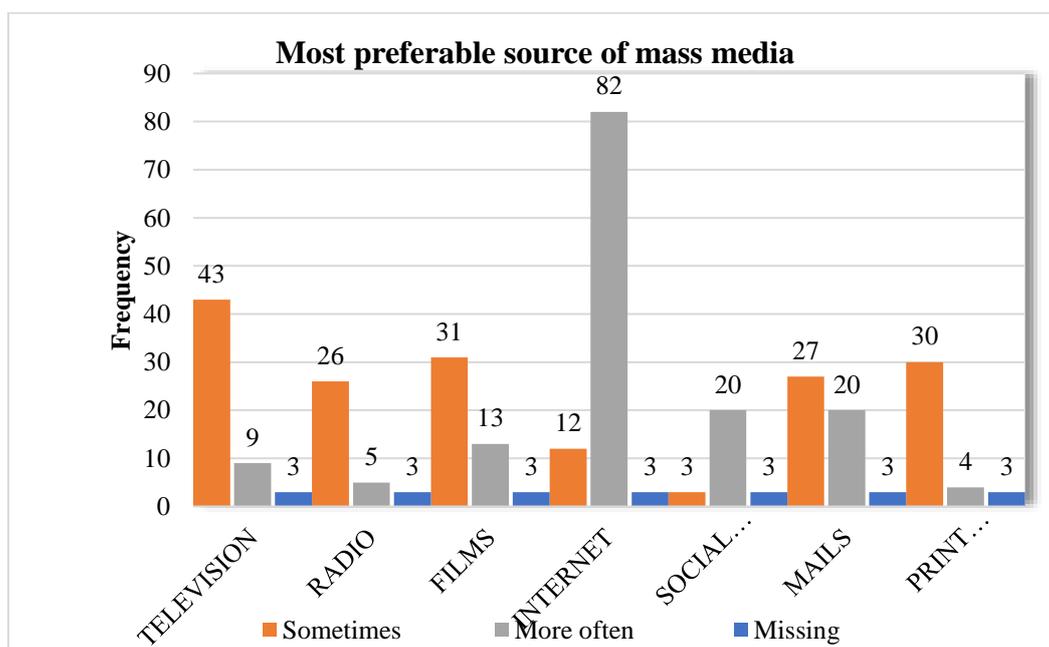| Variables	Frequency	Percentage
Sex		
Male	18	18.4
Female	77	78.6
Age		
≤23	14	13.6
>23	89	86.4
Mean±SD (20.96±1.313); Mini;19, Max;25		
Semester		
2	35.7	35.9
4	33	33.7
6	27	27.6
Use media for information		
Yes	87	88.8
No	8	8.2
Frequency of use		
Daily	66	67.3
Weekly	22	22.4
Monthly	7	7.1

Fig. 1: Respondents' most preferable source of mass media

Table 2: Respondent's Knowledge Regarding COVID-19, its Origin, Transmission, Incubation period, Symptoms and Vulnerable group.

Variables	Frequency	Percentage
COVID-19 is considered originated from		
Animal*	40	38.8
Bird	45	43.7
Human	4	3.9
Chemicals	3	2.9
Unknown	11	10.7
COVID-19 can be transmitted via		
Air	14	13.6
Physical contact	14	13.6
Through common vehicles	0	0
Through vector	2	1.9
Contact and droplets*	73	70.9
Duration of symptoms to be appeared		
2-7 day	23	22.3
2-14 days*	13	12.6
7-14 days	56	54.4
7-21 days	11.0	10.7
5-10 days	0.0	0.0
Major symptoms of COVID-19 are all except		
Fatigue	6	5.8
Fever	6	5.8
Cough and shortness of breath	12	11.7
Sore throat and breathing difficulty	14.0	13.6
Skin rash*	65.0	63.1
Most likely age group to die from these diseases		
Children	2	1.9
Teenagers	0	0
Pregnant women	2.0	1.9
Adults	4.0	3.9
Older adults with underlying conditions*	95.0	92.2

*Correct answer

Table 3: Respondents' Knowledge Regarding COVID-19's Diagnostic Measures, Isolation Period and Treatment Measures. (n =103)

Variables	Frequency	Percentage
Test measure for COVID-19		
CT-Scan	0.0	0.0
RT-PCR Testing*	100.0	100.0
MRI-Scan	0.0	0.0
Spirometer	0.0	0.0
Biopsy test	0.0	0.0
Number of negative confirmed tests to get out of isolation?		
One	13	12.6
Two*	50	48.5
Three	35	34
Four	2	1.9
Five	3	2.9
Contacts of a confirmed case need to be isolated for		
7 days	26	25.2
28 days	10	9.7
2weeks*	41	39.8
3 weeks	16	15.5
10days	10	9.7
Treatment of COVID-19 *		
Supportive care*	81	78.6
Antiviral therapy*	45	43.7
Vaccination*	67	65
Antibiotic therapy*	49	47.6

Regarding the risk of fatality, most people believed it to be old adults with underlying conditions (92.2%). While asking about the test measure for COVID-19, all of them said responded by saying RT-PCR test (100%). Among the respondents, the majority said two (48.5%) negative confirmed tests should be done by the positive tested person to get out of isolation. Concerning the number of days contacts needed to be monitored, most said 2weeks (39.8%). Likewise, for the treatment of COVID-19, the majority believed it to be supportive care (78.6%) (Table 3).

Regarding the protection against COVID-19, most people said maintaining hand hygiene and wearing a mask (92.2%). Similarly, concerning the proper handwashing duration, most of the respondents said 20 seconds (60.2%). For the distance to maintain, the majority said at least 2ft (35.4%), and most of the respondents said infected sick peoples (93.2%) should wear the mask (Table 4).

Likewise, the perception of the respondents regarding the ongoing pandemic COVID -19 illustrates that 51.5% believed that if someone gets infected, they can infect each other for up to 14days even after getting cured.While almost everyone (95.1%) believe that everyone should avoid public gathering and trips if you can.Most of the respondents (53.4%) agreed if anyone had a flu shot, vaccinated with COVID-19 is not sufficient.More than half of the respondents agreed (63.1%) meat items can be safely consumed if cooked thoroughly and properly handled even in a COVID outbreak. Likewise, almost everyone agreed (95.1%) anyone who has a fever, cough, and difficulty breathing should seek medical care early and share a previous travel history with the health care providers. Only 28.2% agreed that antibiotics cannot protect one from the infection of COVID-19. Similarly, 81.6% respondents agreed, as per WHO guidelines for COVID-19, hand washing need to be done with soap when they are visibly dirty.More than half of the respondents agreed (82.5%) that children and young adults should also take measures to prevent infection by COVID-19 virus. Similarly, 64.1% thought wearing mask consistently is highly effective in protecting one from getting COVID and 69.6% respondents thought, visiting traditional healers are not as vital as medical consultations during COVID-19 (Table 5).

On the other hand, out of 103 respondents, the majority (74.8%) respondents had fair knowledge, and (15.5%) respondents had good knowledge while only a few (9.7%) had poor knowledge. Similarly, a majority (97.1%) of the respondents had positive perception regarding Covid-19 whereas only a few (1%) had negative perception while 1.9% remained neutral (Fig. 2).

Table 4: Respondents' Knowledge Regarding COVID-19's Preventive Measures. (n=103)

Variables	Frequency	Percentage
To protect ourselves from the disease **		
Maintaining hand hygiene and wearing masks.*	95	92.2
Covering the nose and mouth when coughing.*	88	85.4
Visiting a traditional healer.	15	14.6
Avoiding sick contacts. *	74	71.8
Having well-cooked and healthy foods*	73	70
Proper hand washing should be done for (According to WHO)		
10seconds	18	17.5
20 seconds*	62	60.2
15seconds	7	6.8
40 seconds	2	1.9
60seconds	14	13.6
Distance one should keep to avoid close contact with another person		
At least 5ft	26	25.2
At least 2ft	37	35.9
At least 3ft	32	31.1
At least 6ft*	8	7.8
At least 4ft	0	0
Mask should be worn by **		
Health care workers*	86	83.5
Infected/ sick person*	96	93.2
Non-infected people *	91	88.3
Elderly*	85	82.5
Others*	82	79.6

**=Multiple choice questions *=Correct answer

Table 5: Respondents' Perception Regarding the COVID-19. (n =103)

| Statement	Responses		
	Agree	**Neutral**	**Disagree**
It is believed that if someone gets infected, they can infect each other for up to 14days even after getting cured.	53(51.5)	31(30.1)	19(18.4)
It is very essential for everyone to avoid public gathering and trips as long as you can.	98(95.1)	3(2.9)	2(1.9)
If anyone had a flu shot, vaccinated with COVID-19 is not sufficient.	55(53.4)	41(39.8)	7(6.8)
Even in areas experiencing outbreaks, meat products can be safely consumed if these items are cooked thoroughly and properly handled during food preparation	65(63.1)	32(31.1)	6(5.8)
If anyone has a fever, cough and difficulty breathing, they should seek medical care early and share previous travel history with the health care providers.	98(95.1)	2(1.9)	3(2.9)
Antibiotic cannot protect one from the infection of COVID-19.	29(28.2)	61(59.2)	13(12.6)
As per WHO guidelines for COVID-19, you only need to wash your hands with soap when they are visibly dirty	84(81.6)	10(9.7)	9(8.7)
It is necessary for children and young adults to take measures to prevent the infection by COVID-19 virus	85(82.5)	9(8.7)	9(8.7)
Wearing mask consistently is highly effective in protecting one from getting infected with COVID-19	66(64.1)	30(29.1)	7(6.8)
Visiting traditional healers are not as vital as medical consultation during COVID-19.	71(68.9)	20(19.4)	12(11.7)

Agree =3; Neutral=2; Disagree= 1
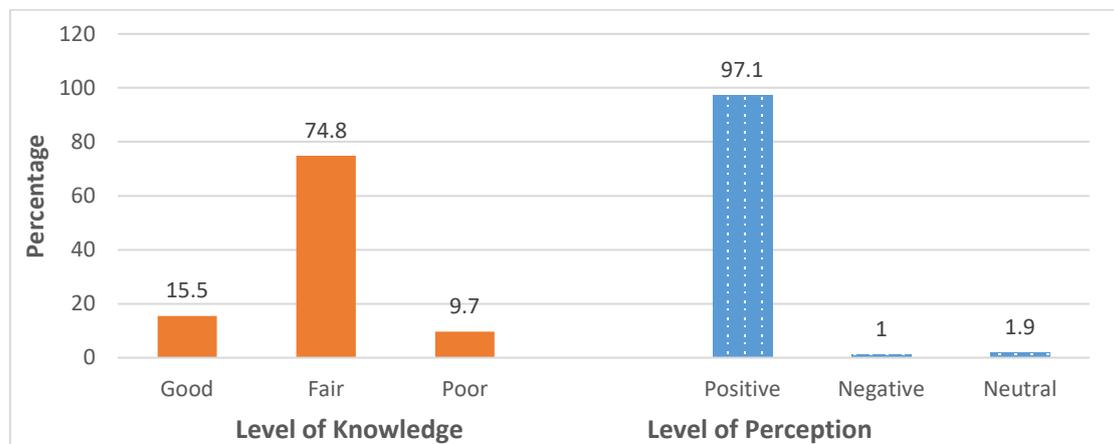
Fig. 2: Respondents' level of knowledge and level of perception

Table 6: Association between Respondent's most Preferable Mass Media and Respondent's Level of Knowledge (n =103)

Variables	Good	Fair	Poor	Total	Chi- square	P-value
Internet						
least used	0	0	0	0	0	0
Sometimes	1(6.3%)	1(1.3%)	0(0.0%)	2	4.498	0.343
more often	2(12.5%)	11(14.3%)	0 (0.0%)	13		
most used	13(81.3%)	65(85.4%)	10(100.0%)	88		
Social media						
least used	1(6.3%)	2(2.6%)	0(0.0%)	3	12.769	0.047*
Sometimes	2(12.5%)	1(1.3%)	0(0.0%)	3		
more often	7(43.8%)	13(16.9%)	2(20.0%)	22		
most used	6(37.5%)	61(79.2%)	8(80.0%)	75		

*Significance p value=<0.05

The association between the preferable mass media (social media) and level of knowledge regarding COVID-19, where social media (p=0.047) were significantly associated with the level of knowledge (Table 6) whereas, that preferable mass media, internet (p=0.916) and social media (0.925) did not significantly associate with the level of perception.

Discussion

In the havoc created by the Covid pandemic and the lockdown imposed by the government, mass media has become the only friend of the people. In this study, 88.8% used Medias for obtaining the information where 67.3% used it daily, 22.4% used it weekly, and 7.1% used it monthly. Finding contrast to the study, the other study which was done among the pharmacists, where 34.0% used it daily, 54.3% used it on weekly basis and 11.7% used it monthly. Social media (70.4%) was the most preferable source for obtaining information about COVID-19 in this study, which is supported by the study conducted among the pharmacists (58.2%) and another study conducted among health care workers (61%) that also demonstrated social media to be the most preferable one (Bhagavathula *et al*., 2020; Ladiwala *et al.,* 2021).

During this pandemic situation where the cases are mounting every other day, having a proper knowledge regarding the disease is very vital, so to testify the level of knowledge among the students their knowledge were assessed. Amid which, 38.8% thought COVID-19 to be originated from animals. About 70.9% answered contact and droplets to be the transmission route which is almost similar to the study conducted in Pakistan where 70.5% answered saying the same (Ladiwala *et al.,* 2021).

Only 12.6% recognized that it takes 2-14 days for symptoms to appear after getting infected with COVID-19, which is lower regarding the study done among the health care workers where about 36.5% answered correctly (Bhagavathula *et al*., 2020). The difference in the results might be due to the two groups being non-medical and medical group. While more than half of the people (63%) answered skin rash to the exceptional one among other major symptoms of COVID-19 which is supported by the study carried out in Malaysia which shows other symptoms to be the major one (86.4%) (Azlan, 2020) .Regarding the risk group for the higher fatality, 92.2% answered it to be older adults with underlying conditions which is consistent with the finding of the study conducted among the Nepalese residents (84%) (Paudel *et al*., 2020).

As for the test measure, all of them (100%) respondent it to be RT-PCR testing. As for the number of negative confirmed tests to be done by the positive tested person to get out of isolation, 48.5% respondent, it to be two tests. As regard to the isolation period, 39.8% answered that a contact of the confirmed case needs to be monitored for 2 weeks if they have no symptoms. The finding is comparatively less than found in the study carried among the Nepalese resident where 99% answered similarly (Paudel *et al*., 2020). The deviation in the study results may be due to the variance of the population group involved. Concerning about the treatment of COVID-19, 78.6% answered supportive care, 65% said vaccination, and while 43.7% believed it to be antiviral therapy, and 47.6% also answered antibiotic therapy.

Regarding the prevention measures for the disease, 92.2% answered maintaining hand hygiene and wearing mask, whereas 85.4% said covering the nose and mouth when coughing, 71.8% said avoiding sick contacts while 70% also said having well-cooked and healthy foods which is consistent with the study held in Bangladesh where 97.7% and 91.8% answered maintaining hand hygiene and wearing mask respectively whereas 93.8% said covering the nose and mouth when coughing, 87.2% said avoiding sick contacts while 74.4% also said having well-cooked and healthy foods (Wadood *et al*., 2020).

While asking about the proper hand washing technique duration, 60.2% answered it to be 20 seconds. On the other hand, only 7.8% answered that at least 6ft distance should be kept avoiding close contact with the other people. In the context regarding who should be wearing the mask, 93.2% said infected/ sick people, 88.3% said non-infected person, while 83.5% also said health care workers and 82.5% said elderly. On the overall context, the respondent displayed fair knowledge regarding the COVID-19.

Likewise, the pandemic has brought forward many changes in the living of a person. Therefore how people perceived COVID-19 was assessed during the research which demonstrates the majority (97.1%) of the respondents had positive perception regarding Covid-19.The findings of this study were quite alike to the findings of the study in Egypt where more than half of the respondents had positive perception and 16.3/23 (71.26%) had good knowledge regarding COVID-19 (Abdelhafiz *et al.*, 2020).

The most preferable media (social media) and level of knowledge were significantly associated (p=0.047), whereas no association among the most preferable media and the level of perception (p=0.925) was noted.

Conclusion

In conclusion, this result demonstrates that for obtaining information, people mostly tend to use social media. Most of the respondents had fair knowledge and good attitude. As a person's most preferred media seems to be social media which has as much factual information as does the misinformation, directly influence the knowledge of a person. Therefore, the government should focus on curtailing the misinformation through creating awareness campaigns, preventive protocols through the correct outlets.

Acknowledgement

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