

## Original Article

# Attitude and Practices of Indian Population in Response to Information Shared on Social Media during COVID-19 Pandemic: How Social Media Literate are We?

Aman Sharma<sup>1</sup>, Priyanka Rathi<sup>2</sup>, Rahul Yadav<sup>3</sup>

<sup>1</sup>M Sc (Medicine) Final Year Student, <sup>3</sup>M Sc (Medicine) Second Year Student, Department of Pharmacology, RUHS College of Medical Sciences; <sup>2</sup>Associate Professor, Department of Pharmacology, Mahatma Gandhi Medical College and Associated Hospitals, Jaipur, Rajasthan, India

DOI:10.37821/ruhsjhs.6.2.2021.362

### ABSTRACT

**Introduction:** In the prevailing COVID-19 pandemic, while the entire healthcare sector is combating the pandemic on the frontline, it is imperative for the consumers to become social media literate in their management of social media contents and platforms and handle them wisely and prudently. This study aimed to analyze the current practices of Indian population in response to COVID-19 related information shared on social media during COVID-19 pandemic and analyze their perception on its impact in spreading awareness.

**Methodology:** A cross-sectional web-based online survey consisting of 26 questions on attitude, practices, and perception of the study participants on COVID-19 related messages shared on various social media platforms was conducted for a period of two months. The survey link was sent through email and various social network channels to the study participants.

**Results:** Social media had influenced 33.4% of the study participants positively, 41% both positively and negatively, and 18.4% negatively; and 57% have recommended that the sharing of COVID-19 related information on social media during this pandemic should be allowed, but with regulatory supervision of the government.

**Conclusion:** There is a reasonable awareness and sense of responsibility among the study participants in their attitude and practices of handling COVID-19 related information on social media. However, there is still much scope for further improvement.

**Keywords:** Attitude, COVID-19 pandemic, COVID-19 related information, Social media, Social media literate.

### INTRODUCTION

Information and communication technology has changed rapidly in the last decade; with major development being the emergence of numerous social media platforms like twitter, instagram, facebook, and whatsapp. The term “social media” is broad and constantly evolving; can be defined as an internet-based tool that allows individuals and communities to gather, communicate, and share information, ideas, personal messages, images, and other content; and in some cases to collaborate with other users in real time.<sup>1</sup>

Albeit social media platforms have become the mainstream networking tools in the present era, they may however, impart a life changing influence on an individual, or on the society altogether. Furthermore, these social media platforms permit individuals to share uncontrolled, unsupervised, and unfiltered content irrespective of time and place<sup>2</sup> which is a major pitfall, especially during difficult testing times like the on going corona virus disease-19 (COVID-19) pandemic.

When the COVID-19 pandemic had just started to affect the global countries early in 2020, there was a monstrous gap in our existent knowledge of COVID-19 and its management; while concurrently, all mass media communications worldwide (including print media and broadcasting) were flooded with reports of deplorable events attributable largely to COVID-19. Hence, everyone, from scientists to public began their own quest of answers and information on the prevention and remedial solutions to avert this disease and its consequences; and social media, not surprisingly, became the platform of choice for the

search and dissemination of such information about COVID-19, the first pandemic of digital age.<sup>3</sup>

Such wide-ranging use of social media during this pandemic has however, offered some good, some bad, and some ugly pockets of COVID-19 related information. Although, social media has been providing abundant COVID-19 related information and directing people to various other links and sources for further information, but the content is lacking quality and reliability. Authors of such information are often unknown or are identified by limited information. In addition, this information may be unreferenced, incomplete, or informal.<sup>4</sup> Social media users may also be vulnerable to both hidden and overt conflicts of interest that they may be incapable of interpreting.<sup>4</sup> Such misinformation may therefore, cause much panic and fear amongst individuals and community and may adversely influence public health behavior and decision making.<sup>5</sup>

Therefore, while the entire healthcare sector is combating the COVID-19 pandemic on the frontline; due efforts should also be directed towards maneuvering its corollary, “the COVID-19 infodemics”.<sup>6</sup> Such online environments demand very specific literacy skills of the consumers. As described by UNESCO, a media and information literate person must not only be a consumer of information and media content but also a responsible information seeker, knowledge creator, and innovator, who is able to take advantage of a diverse range of information and communication tools and media.<sup>7</sup>

In the prevailing circumstances, it therefore becomes imperative that the consumers become social media literate while managing social media contents and platforms and handle them wisely and prudently. Thus, this online survey was conducted to analyze the current attitude and practices of Indian population in response to COVID-19 related information on social media during COVID-19 pandemic and analyze their perception on the impact of COVID-19 related information on social media in spreading awareness.

## **METHODS**

A cross-sectional web-based online survey was conducted for a period of two months, at the onset of COVID-19 pandemic in India. We chose this time period because during this period definitive, reliable, and official infor-

mation was limited and kept changing very frequently, causing much confusion and panic and resulting in widespread use of social media for finding updates. Google documents were used as a platform to create an online questionnaire that was automatically hosted via a unique URL: <https://forms.gle/E49L43iGV1sqGEpE8>. All Indian citizens above the age of 18 years were included while NRI and foreign citizens were excluded. Participants were recruited by sending the survey link through email and various social network channels such as whatsapp, linkedIn, instagram, and facebook. An informed consent document comprising of the participant information sheet and informed consent form was included in the beginning of the questionnaire and only those participants who gave consent were allowed further access to the questionnaire. The final sample was obtained through existing study subjects who recruited future subjects from among their acquaintances.

The structured questionnaire consisted of 26 questions including six questions on socio-demographic data and 20 questions on attitude, practices, and perception of the study participants on COVID-19 related messages shared on various social media platforms. The questionnaire was then validated by conducting a pilot test on eight participants meeting the same eligibility criteria as the study sample.

Strict confidentiality of data was maintained throughout the study and the distribution of responses was presented as frequency and percentages.

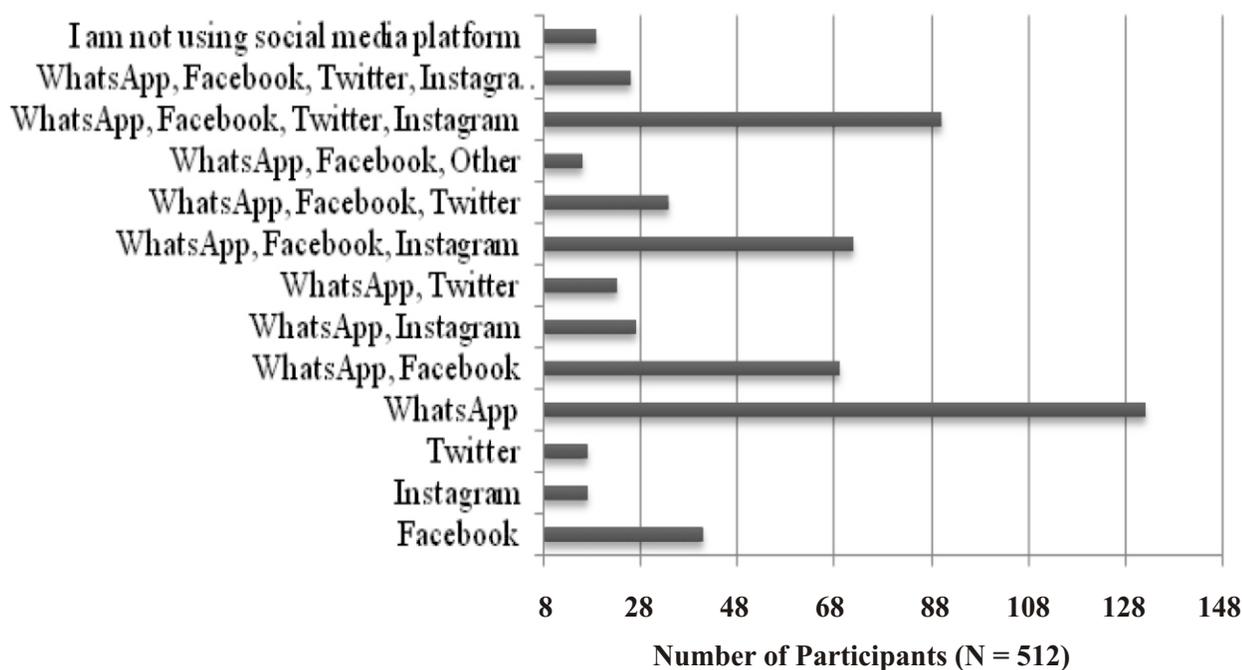
## **RESULTS**

A total of 512 participants responded to the questionnaire. The socio-demographic details of the respondents are depicted in table 1 and the distribution of different types of social media platforms used by the respondents is shown in figure 1. Whatsapp was used by 24.21% of the respondents as their major social media platform while multiple social media platforms including whatsapp, facebook, twitter, and instagram were used by 16.01%.

Nearly all the study participants responded to have received messages related to COVID-19 on social media. The description of various practices followed by the study participants and change in their behavior, in response to COVID-19 related information on social media are shown in table 2 and 3, respectively.

**Table 1: Socio-demographic details of the study participants (N=512)**

Variables		N (%)
<b>Gender</b>	Male	320 (62.50%)
	Female	189 (36.92%)
	Prefer not to say	3 (0.58%)
<b>Age (in years)</b>	18- 40	416 (81.25%)
	41- 60	84 (16.40%)
	61- 80	8 (1.56%)
	> 80	4 (0.78%)
<b>Qualification</b>	Intermediate pass	77 (15.03%)
	High school pass	155 (30.27%)
	Graduate	153 (29.88%)
	Post-graduate	127 (24.80%)
<b>Occupation</b>	Medical student/ professional	223 (43.55%)
	Non-medical student/ professional	207 (40.44%)
	Other	82 (16.01%)
<b>Number of social media platforms used</b>	Any one of the options	119 (23.25%)
	Any two of the options	119 (23.25%)
	Any three of the options	116 (22.65%)
	All types	84 (16.40%)
	None	74 (14.45%)
<b>Current knowledge on COVID-19</b>	I am not at all informed	27 (5.28%)
	I am informed but not completely	191 (37.30%)
	I am well informed	294 (57.42%)



**Figure 1: Distribution of social media platforms used by study participants.**

**Perception on usefulness of COVID-19 related information:** When asked about the COVID-19 related information shared on social media that was found to be most useful, 22.85% participants responded that the information related to health and health care facilities was the most useful while information related to government orders and notifications, available emergency and social welfare services, and helpline numbers for various delivery services was most useful for 12.10%, 10.54%, and 3.12% participants, respectively.

**Perception on COVID-19 related demographic information:** 3.32% of the participants admitted that demographic information on COVID-19 pandemic like the total number of positive cases, deaths, active cases, recovered cases, etc. shared on various social media platforms had caused a sense of excessive fear in them because of which

they were always nervous and stressed. Among 13.08% of participants, this information had caused a sense of reasonable fear and made them a little nervous. On the contrary, this information had raised a sense of alarm in 34.18% of participants so that they became more careful and cautious and had made 45.70% of participants more confident and hopeful when they see the number of people recovering from COVID-19. However, such information had no influence on 3.72% of the participants.

**Perception on the impact of COVID-19 related information:** When asked to describe the impact of COVID-19 related information on social media on their perception of COVID-19 frontline professionals and COVID-19 affected people, 38.08% responded to have developed greater respect for COVID frontline professionals and tried to support them in every possible

**Table 2: Practices of study participants in response to COVID-19 related information on social media (N=512)**

Practices		N (%)
<b>Do you verify the authenticity or credibility of COVID-19 related messages that you receive on social media?</b>	Always	255 (49.80%)
	Sometimes	218 (42.57%)
	Never	39 (7.61%)
<b>What sources do you mostly use for verification? (more than one option can be selected)</b>	Google	466 (55.88%)
	Official websites like PubMed/ Ministry of Health and Family Welfare, WHO etc.	322 (38.60%)
	Talk to a healthcare professional	44 (5.28%)
	Other	2 (0.24%)
<b>How often have you found that COVID-19 related information on social media is incorrect/ incomplete/ fake/ falsely provocative?</b>	Very often	173 (33.78%)
	Often	207 (40.44%)
	Rare	101 (19.72%)
	Never	31 (6.05%)
<b>Before sharing any COVID-19 related information on social media, do you verify its authenticity?</b>	Always	281 (54.88%)
	Sometimes	189 (36.91%)
	Never	42 (8.39%)
<b>What is the main reason that you check the authenticity of COVID-19 related information before sharing?</b>	As a responsible citizen, I am aware of the ill consequences of sharing wrong information	321 (68.30%)
	The government regulations have prohibited the sharing of COVID-19 related information without verification of its credibility	117 (24.90%)
	Out of curiosity	32 (6.80%)
<b>Have you ever received/ forwarded any message on COVID-19 that has such terms in it like "Wuhan Virus", "Chinese Virus" or "Asian Virus"?</b>	I have received and forwarded it to others	128 (25.00%)
	I have received but did not forward it to others	146 (28.52%)
	Not received	238 (46.48%)

**Table 3: Change in behavior of study participants in response to COVID-19 related information on social media (N=512)**

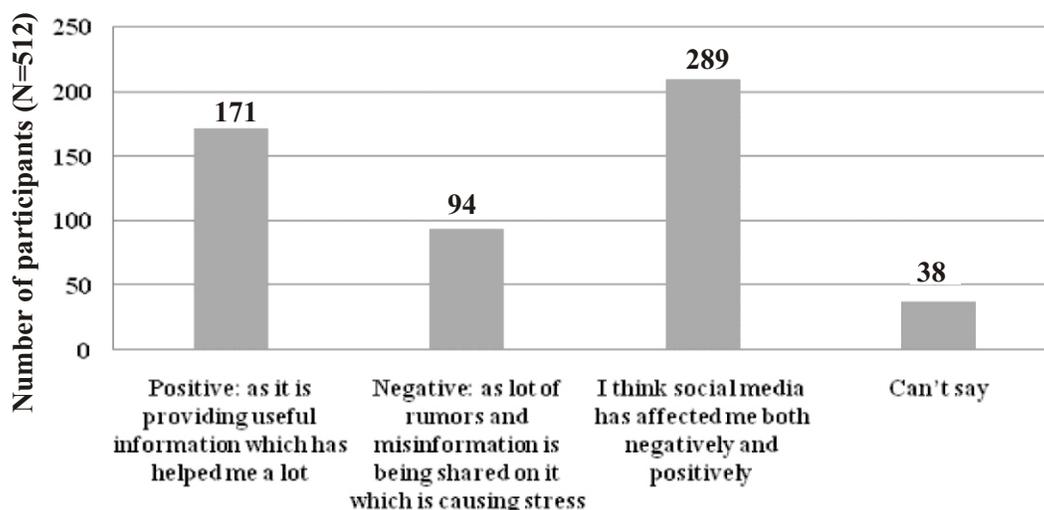
Change in behavior	N (%)
<b>Have COVID-19 related messages on social media platform ever influenced your decision related to the protection or treatment of you or your family member from COVID-19?</b>	
Always	207 (40.42%)
Never	77 (15.04%)
Sometimes	228 (44.54%)
<b>Have you ever started or stopped taking any medication for prevention or treatment of COVID-19 based upon information on social media, without asking your physician?</b>	
Yes	178 (34.76%)
No	334 (65.24%)
<b>The preventive measures which you are following in your daily routine in response to advise on social media (multiple options can be selected)</b>	
Wash your hands frequently	142 (11.96%)
Wear a mask at public places	276 (23.24%)
Cover your mouth and nose when you cough or sneeze	96 (8.08%)
Maintain at least 1-meter distance between yourself and anyone who is coughing or sneezing	102 (8.58%)
Avoid touching eyes, nose, and mouth	198 (16.66%)
Stay home if you feel unwell and self-isolate yourself from others	163 (13.72%)
If you develop fever, cough, and difficulty in breathing, seek medical advice	211 (17.76%)

way while 8.60% admitted to have stigmatized them as a possible threat and have kept distance from them in every possible way. Also, 15.62% admitted to have empathy for COVID-19 affected persons and families and have not stigmatized them while 5.08% responded to have stigmatized them. Figure 2 represents the perception of study participants on the overall impact of COVID-19 related information on social media on their life.

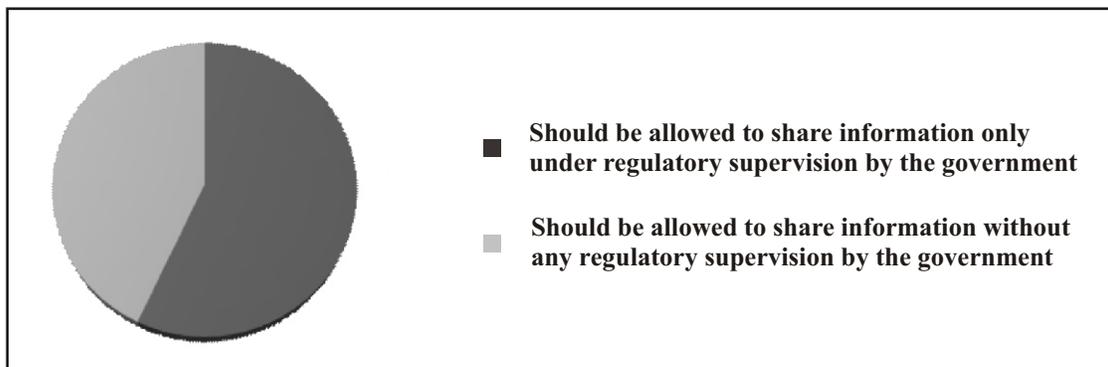
The recommendations of the study participants on the sharing of COVID-19 related information on social media during this pandemic have been depicted in figure 3.

## DISCUSSION

The prevailing COVID-19 pandemic has emerged as a challenging crisis for public health in the contemporary world. In addition to the soaring morbidity and mortality rates, nations across the globe are also suffering from a spike of excruciating psychological outcomes, i.e. fear, nervousness, anxiety, and depression among people of every socio-demographic profile.<sup>8-10</sup> A major contributing factor to this could be the intemperate use of social media for sharing of facts, information, and new updates on COVID-19. Coincident with the earlier pandemics, COVID-19 is also accompanied by a tsunami of



**Figure 2: Overall impact of COVID-19 related information shared on social media.**



**Figure 3: Recommendations of study participants on sharing of COVID-19 related information on social media.**

information; termed as an infodemic.<sup>6</sup> It is, therefore, imperative that the consumers must become social media literate in their management of social media contents and platforms and handle them wisely and prudently.

In the present study, 85.55% of the participants were found to be using either or all of the social media platforms namely, WhatsApp, facebook, twitter, and instagram during the pandemic; the most common being WhatsApp (24.21%). Almost all the study participants admitted to have received messages related to COVID-19 on any of the social media platforms. 57.42% of the study population believed that they are well informed while 37.30% believed that their information is incomplete and 5.28% were not informed at all about COVID-19.

For combating a novel disease like COVID-19, the availability of accurate information in a timely manner may significantly help the community to shape and change their responses in a rapid fashion.<sup>11-12</sup> Thorough and transparent dissemination of adequate COVID-19 preventive measures on social media may explain why preventive public health measures were picked up so rapidly during the initial phases of the pandemic in a developing country like India with world's second largest population to safeguard. Results of the present study also show that decisions related to protection from and treatment of COVID-19 were sometimes or always influenced by COVID-19 related information on social media among 44.54% and 40.42% of the participants, respectively. Further, consistent messages about the use of face masks, the need to wash hands frequently, observing respiratory hygiene, avoidance of crowded places, the need

to disinfect living places, isolation and quarantine protocols etc, were being spelled out on social media ever since the onset of the pandemic. Appertaining to these messages, nearly 100% of the study participants have admitted to adopting one or more of these practices (Table 3), reflecting a positive impact of social media in changing public behavior.

Additionally, social media may also offer diverse supportive roles when used prudently like, it may direct people to trusted reliable sources, counteract misinformation, enable connectivity, provide psychological first aid, and help as a diagnostic tool or a referral system. Further it may be used for advancing remote learning accelerating research and enabling the culture of preparedness.<sup>13</sup> In the present study, 22.85% of the participants found the information related to health and health care facilities as most useful to them while information related to government orders and notifications, available emergency and social welfare services, and helpline numbers for various delivery services was found to be most useful to 12.10%, 10.54%, and 3.12% of the participants, respectively.

However, concurrent to these promising roles, there has also been circulation of considerable amount of false information or misinformation on social media. Misinformation on corona virus might be the most contagious thing about it.<sup>14</sup> In the present study, 74.22% participants have often or very often found that COVID-19 related information on social media is incorrect/ incomplete/ fake/ falsely provocative. Such information should therefore, always be verified for identifying

misinformation and subsequently preventing their further transmission and alleviating concerns of communities. In the present study, 49.80% of the study population always verified the authenticity or credibility of the received COVID-19 related messages, 42.57% verified sometimes, and 7.61% never verified. Also, 54.88% always verified the authenticity of COVID-19 related information on social media before sharing it further and 36.91% verified sometimes while 8.39% never verified. Another welcoming observation was that the reason for verification by nearly 68.3% individuals was that they were aware of the ill consequences of sharing wrong information on social media while only 24.9% verified because of fear of government regulations. Also, 64.25% preferred consulting their physician over social media information for taking medications for prevention or treatment of COVID-19.

However, verifying and obtaining correct online information can itself be a strenuous task. The over-abundance of information makes it hard for people to find trustworthy sources and reliable guidance when they need it.<sup>3</sup> There are various trusted sources wherefrom content quality, accuracy, and reliability of COVID-19 related information can be verified like the official websites of various government organizations viz. the Center for Disease Control and Prevention, Ministry of Health and Family Welfare, Indian Council of Medical Research, World Health Organization, PubMed, etc. Talking to a healthcare professional may also be helpful. In the present study, 43.88% had used these sources for content verification. However, Google was also used by a majority (55.88%) for seeking information.

While social media dissemination of significant public health related information seems appropriate, excessive disease related information is likely to cause increased levels of stress, anxiety, and worry too.<sup>3,15</sup> Further, a novel and highly contagious disease is always scary in the first instance because it is unknown and unpredictable; and like other emotions, fear can be contagious and spread swirly as a social emotion which can shape our reactions to ongoing events. In the early stages of the spread of the disease, widespread social media coverage of panic buying and stock piling of consumer items like grocery, hand sanitizers, medicines etc, had resulted in a significant increase in demand and corresponding price inflation.<sup>16</sup>

Similarly, a study in the aftermath of the Boston marathon bombing had found that repeated bombing-related media exposure was associated with higher acute stress than direct exposure to the event itself.<sup>17</sup> Likewise, in the present study, demographic information on COVID-19 pandemic caused excessive or reasonable fear among 3.32% and 13.08% of the study participants, respectively. Contrary to this, 34.18% of the study participants became more careful and cautious and 45.70% became more confident and hopeful when they saw the number of people recovering.

Lastly but notably, the current COVID-19 outbreak has provoked, to a great extent, social stigma and discriminatory behaviors against certain subsets of population. During this outbreak, people have been labeled, stereotyped, discriminated against, treated separately, and/or experienced loss of status because of a perceived link with the disease. Such treatment can negatively affect those with the disease, as well as their care givers, family, friends, and communities.<sup>18</sup> While dealing with this sensitive concern, social media can be utilized as a game-changer in creating situational awareness and influencing human behavior. Observations of the present study showed that messages on social media influenced 38.08% participants in developing greater respect for COVID front line professionals and 15.62% in developing empathy towards COVID-19 affected persons and families.

Overall, social media had influenced 33.4% of the study participants positively, 41% both positively and negatively, and 18.4% negatively; and 57% recommend that the sharing of COVID-19 related information on social media during this pandemic should be allowed, but with regulatory supervision of the government.

## **CONCLUSION**

Social media can be a key influencer in communicating both useful and false information on COVID-19. Therefore, it is a collaborated duty of the Government and the citizens of India to harness their social media intelligence for strengthening the public health response to COVID-19. There is a reasonable awareness and sense of responsibility among the study participants in their attitude and practices of handling COVID-19 related information on social media. However, there is still much scope for further improvement.

## REFERENCES

1. Ventola CL. Social media and health care professionals: Benefits, risks, and best practices. *Pharmacy and Therapeutics*. 2014;39(7):491-99.
2. Iftikhar R, Abaalkhail B. Health-seeking influence reflected by online health-related messages received on social media: Cross-sectional survey. *Journal of Medical Internet Research*. 2017;19(11):1-13.
3. O'Brien M, Moore K, McNicholas F. Social media spread during COVID-19: The pros and cons of likes and shares. *Ir Med J*. 2020;113(4):52.
4. Pirraglia PA, Kravitz RL. Social media: New opportunities, new ethical concerns. *J Gen Intern Med*. 2012;28(2):165-66.
5. Hernández-García I, Giménez-Júlvez T. Assessment of health information about COVID-19 prevention on the internet: Infodemiological study. *JMIR Public Health Surveill*. 2020;6(2):e187-17.
6. Schillinger D, Chittamuru D, Ramírez AS. From "Infodemics" to health promotion: A novel framework for the role of social media in public health. *American Journal of Public Health*. 2020;110:1393-96.
7. United Nations Educational, Scientific and Cultural Organization (UNESCO). Media and Information Literacy. Available at: <https://en.unesco.org/themes/media-and-information-literacy>.
8. Islam MA, Barna SD, Raihan H, Khan MNA, Hossain MT. Depression and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. *PLoS One*. 2020;15(8):e0238162.
9. Vahia IV, Jeste DV, Reynolds CF. Older adults and the mental health effects of COVID-19. *JAMA*. 2020; 324 (22): 2253-54.
10. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry*. 2020;52:1020-66.
11. Lau JTF, Yang X, Tsui H, Kim JH. Monitoring community responses to the SARS epidemic in Hong Kong: From day 10 to day 62. *J Epidemiol Community Health*. 2003;57: 864-70.
12. Rubin GJ, Potts HW, Michie S. The impact of communications about swine flu (influenza A H1N1v) on public responses to the outbreak: Results from 36 national telephone surveys in the UK. *Health Technol Assess*. 2010; 14(34):183-266.
13. Merchant RM, Lurie N. Social media and emergency preparedness in response to novel coronavirus. *JAMA*. 2020;323(20):2011-12.
14. Depoux A, Martin S, Karafillakis E, Preet R, Wilder-Smith A, Larson H. The pandemic of social media panic travels faster than the COVID-19 outbreak. *J Travel Med*. 2020; 27 (3):taaa031.
15. Kadam AB, Atre SR. Negative impact of social media panic during the COVID-19 outbreak in India. *J Travel Med*. 2020; 27(3):taaa057.
16. UN News. Coronavirus: demand for face masks creates shortfall for those in real need [Internet]. USA: United Nations; 2020 [updated 2020 Feb 07]. Available at: <https://news.un.org/en/story/2020/02/1056942>.
17. Holman EA, Garfin DR, Silver RC. Media's role in broadcasting acute stress following the Boston Marathon bombings. *Proc Natl Acad Sci USA* [Internet]. 2013 Dec 09; 111(1):93-98.
18. Social Stigma associated with COVID-19. A guide to preventing and addressing social stigma. Available at [https://www.who.int/publications/i/item/socialstigma\\_associated\\_with\\_Covid\\_19](https://www.who.int/publications/i/item/socialstigma_associated_with_Covid_19).

### Corresponding Author

Dr Priyanka Rathi, Associate Professor, Department of Pharmacology, Mahatma Gandhi Medical College and Associated Hospitals, Jaipur, Rajasthan, India.

email id: [drpriyankarathi@mgumst.org](mailto:drpriyankarathi@mgumst.org)