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Health Information Seeking among General Public in India during COVID 19 Outbreak: Exploring Healthcare Practices, Information Needs, Preferred Information Sources and Problems

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ABSTRACT

Background: As of October 1, 2020, World Health Organization (WHO) reports that COVID-19 has spread in 216 countries or territories or areas which results into throwing billions of lives under lockdown as healthcare services struggle to cope. Therefore, timely access to healthcare information during COVID-19 crisis is mandatory to restrain its spread.

Objectives: To comprehend the information needs and seeking behaviour of general public during COVID-19 outbreak in India.

Methods: A national survey through an online questionnaire was conducted in India and 1310 respondents participated in the study through snowball sampling technique.

Results: The most decisive information needs of majority of respondents were COVID-19 signs and symptoms, causes and treatments of illness, prevention and control of COVID-19. Conspicuously, news websites, dedicated websites of coronavirus and medical staff were the most preferred and trustworthy sources of information related to COVID-19. Furthermore, credibility or authenticity of information was identified as the major problem in seeking COVID-19 information.

Conclusion: The study's findings provide insight into the spectrum of health information seeking among general public in India during COVID-19 outbreak. This study may be useful to social welfare and government health departments, hospitals, and health-information communicators engaged in public safety and well-being in India.

Keywords: Information Needs, Information Sources, Information Seeking, Information Seeking Behaviour, COVID-19, Coronavirus, India

1. INTRODUCTION

The contemporary world is encountering the most terrible health catastrophe since 1918, caused by a novel virus named “severe acute respiratory syndrome coronavirus-2” (SARS-CoV-2) (Moreno, Fuentes-Lara & Navarro, 2020). COVID-19 initially showed up in Wuhan, China, on December 31, 2019, and has reached expeditiously into other nations (Zhu et al., 2020). The

news of the virus, commonly known as “Coronavirus” induced anxiety among the general public as COVID-19 was declared as a global pandemic by the World Health Organization (WHO) on March 11, 2020 (WHO, 2020). As of September 30, 2020, there have been at least 1,016,080 confirmed deaths and more than 34,061,139 confirmed cases in the COVID-19 pandemic across the world (John Hopkins University, 2020). Notably, India is the second worst-affected country by the coronavirus pandemic with more than 6,305,643 confirmed cases and at least 98,616 confirmed deaths as reported on September 30, 2020 (Ministry of Health and Family Welfare, 2020). After seeing the enormity of the COVID-19 crisis, the Indian government began evaluating their degree of preparedness and started adopting suitable methods to restrain the spread of the coronavirus. The fundamental step to boost these preparedness endeavours is to provide the latest information and generate awareness amongst the general public regarding the disease symptoms, precautions, potential risks, and possible treatments and interventions. Notably, government departments and other healthcare agencies in India are encouraging the general public to enhance personal hygiene precautions through social distancing, hand washing, wearing mask, cleaning household surfaces, and staying away from public places or work after developing flu-like symptoms to limit the spread of the virus.

It is worth mentioning that the information which is being broadcasted has utmost importance during this pandemic time because a huge amount of medical disinformation, rumour and half-backed conspiracy theories from unfiltered sources, frequently circulated via social media and other platforms that can cause great distress among the general public (Naeem & Bhatti, 2020; Van-der-Meer, 2018). Hollowood and Mostrous (2020) found that every day in Italy during March 2020, there was an average of 46000 new posts on Twitter associated with disinformation regarding the COVID-19 pandemic. Similarly, Ofcom’s survey (2020) reported that forty-six percent of adults residing in the United Kingdom encountered false information regarding the coronavirus on various online platforms. Pratchett (2013) in his book rightly stated that

"A lie can run around the world before the truth has got its boots on."

Regarding communication and information, UNESCO's Director for Policies and Strategies Guy Berger elaborated that falsifications linked to all the facets of coronavirus have become prevalent and fake news is placing individuals’ lives in danger. He further stated that

> *"in a time of high fears, uncertainties and unknowns, there is fertile ground for fabrications to flourish and grow. The big risk is that any single falsehood that gains traction can negate the significance of a body of true facts. When disinformation is repeated and amplified, including by influential people, the grave danger is that information which is based on truth, ends up having only marginal impact*" (UN News, 2020).

Conspicuously, international healthcare agencies such as WHO is adopting suitable measures to reduce the spread of the virus and the fight against misleading information. WHO (2011) stated that

> "*The capacity to relay information quickly and clearly on different media platforms (television, radio, print, and web) is essential to the effective management of a public health emergency*."

The preceding discussion reveals that the coronavirus outbreak's effect may be significantly decreased by disseminating the right information to the right person at the right time and in the right format (Majid & Rahmat, 2013). Therefore, to accomplish this aim, an exploration into the information needs and seeking behaviour of the general public during the coronavirus outbreak is mandatory. Notably, India is ranked as the third-worst affected country by coronavirus outbreak and so far, no research is conducted in India on the information seeking behaviour of the general public during this outbreak. Therefore, a national survey was conducted from May 7 to July 23, 2020, when consternations regarding coronavirus's menace peaked in India. The present study has theoretical as well as practical implications. It is anticipated that the findings of this study could help social welfare departments, government health departments, hospitals, health information communicators, and other organizations engaged in public safety and well-being in India. They may utilize this study as a reference guide for developing suitable information strategies to keep the general public updated during the coronavirus outbreak without causing excessive information overload. Through its findings, the present research is expected to contribute to the existing spectrum of information seeking pattern in general and healthcare information seeking in specific.

2. OBJECTIVES

The present study aims to explore the information seeking pattern of the general public in India during COVID-19 crisis. To accomplish the aim, the following objectives are developed and addressed in this study:

i. To examine the healthcare habits and practices of the general public during COVID-19 outbreak;
ii. To ascertain the information needs of the general public during COVID-19 outbreak;
iii. To identify the most preferred information sources among the general public for seeking COVID-19 related information;
iv. To investigate the purposes of the general public for seeking information related to COVID-19;
v. To ascertain the problems faced by the general public in seeking information pertaining to COVID-19.

3. METHODOLOGY

The present study adopted a quantitative research technique by utilizing a questionnaire for data collection. The items utilized in the questionnaire to operationalize the constructs were taken from earlier researches (Moreno, Fuentes-Lara & Navarro, 2020; Majid & Rahmat, 2013; Majid *et al*., 2019; Wong & Sam, 2010). In addition to this, investigators have done the content analysis of coronavirus related brochures, posters, pamphlets, guidelines released by international and national agencies to comprehend the information types generally propagated among the general public. Notably, some of the changes were made in the questionnaire based on information gathered through the content analysis. It is worth mentioning that the delegate populace was the general public; therefore, these attempts were made by the investigators to make the questionnaire clearer, unambiguous, exhaustive, and to fit the present study in context. The questionnaire was validated on 29 respondents to decide whether the questions' language and their estimations were suitable and straightforward to comprehend. On the basis of their feedback, some of the jargon and technical words were removed.

The final questionnaire is divided into five sections by keeping in mind the objectives of the study. Section A of the questionnaire attempts to disclose the respondents' healthcare habits

and practices. Section B deals with the respondents' information need related to coronavirus. Section C deals with the information sources preferred by the respondents for seeking information related to coronavirus. Section D deals with the respondents' purpose of seeking coronavirus related information. Finally, section E deals with the problems encountered by the respondents while exploring and understanding the information related to coronavirus.

The cross-sectional survey was conducted through an online questionnaire from May 7 to July 23, 2020. A snowball sampling method was utilized to convey invitations describing the inspiration for the survey with a self-guided hyperlink to the server through Facebook, LinkedIn, Instagram, Twitter, Telegram, and WhatsApp. The invitation urged individuals to distribute the questionnaire to their contacts. The distribution of the questionnaire among the individuals was exclusively founded on the criteria of interest and motivation for the study. Overall, 1367 responses were received after many follow-ups. Out of 1367 questionnaires, 57 questionnaires were incomplete, hence discarded. The remaining 1310 complete questionnaires were used for the analysis of the data. The gathered data was then coded and feeded in SPSS version 23.0 and analyzed through descriptive statistics.

4. RESULTS AND DISCUSSION

4.1. Demographic Profile of the Respondents

The respondents' demographic characteristics were grouped into four categories: gender, age, educational qualification, and occupation. The demographic summary of the participants is demonstrated in table 1. A total of 1310 individuals participated in the study. A large majority of the respondents were female (58.85%) compared with female respondents (41.15%). Furthermore, most of the respondents were in the age group of 31-40 years (32.67%), followed by age group of 41-50 years (31.07%), 21-30 years (26.18%), and older than 50 years (10.08%). In terms of educational qualifications, the majority of the respondents have bachelor's degree (44.96%) followed by master's degree (26.03%), senior secondary (16.26%), and secondary (12.75%). While coming to the occupation of respondents, majority of the respondents were employed (34.89%), followed by the housekeeper (29.16%), student (25.87%), unemployed (8.17%), and other (1.91%).

Table 1. Demographic Profile of the Respondents (N=1310)

Characteristic	Category	Frequency	Percent
Gender	Male	539	41.15
	Female	771	58.85
Age	21-30	343	26.18
	31-40	428	32.67
	41-50	407	31.07
	Older than 50	132	10.08
Educational Qualification	Secondary	167	12.75
	Senior Secondary	213	16.26
	Bachelor's degree	589	44.96
	Master's degree	341	26.03
Occupation	Student	339	25.87
	Employed	457	34.89
	Unemployed	107	8.17
	Housekeeper	382	29.16
	Other	25	1.91

4.2. Healthcare Habits and Practices

Respondents were asked about their healthcare habits and practices during COVID-19 pandemic. They were allowed to choose more than one statement from the list provided. As shown in table 2, a vast majority (92.90%) of the respondents reported covering their mouths while coughing and sneezing, and almost half of the respondents (49.39%) were monitoring their body temperature when they feel unwell. Notably, 86.95 and 65.04 percent of the respondents reported that they used to wash their hands several times a day and used hand sanitizer quite frequently, respectively. A good number of respondents were also eating balanced meals (75.04%) and maintaining social distancing while going outside (82.21%). However, very few (34.05%) of the respondents reported that they were exercising regularly. It can be noted here that respondents were maintaining proper personal hygiene and taking good measures to prevent the viral infection from spreading. However, adding exercise in their daily routine may also help to maintain health and immunity which is crucial to reduce the chances of getting infected with the novel coronavirus.

Table 2. Respondents' Healthcare Habits and Practices (multiple responses accepted)

Healthcare Measures	Frequency (N=1310)	Percent
I usually cover my mouth and nose while coughing or sneezing	1217	92.90
I wash my hands several times in a day	1139	86.95
I follow social distancing whenever I go outside	1077	82.21
I eat balanced meals with plenty of fruits and vegetables	983	75.04
I use hand sanitizer quite frequently	852	65.04
I monitor my body temperature when I feel unwell	647	49.39
I exercise regularly	446	34.05

4.3. Importance of Novel Corona Virus Related Information Needs

Participants were asked to indicate the importance of various information needs related to COVID-19, by utilizing a five-point semantic differential scale, where 1 is coded as "least important" and 5 is coded as "most important". The weighted arithmetic mean (WAM) scores and standard deviation (SD) were computed for each information need and they were ranked in descending order, placing the information need with the highest WAM score value at the top. From the table 3, it can be seen that the top five most crucial novel coronavirus related information needs were: coronavirus signs and symptoms (WAM=4.74); causes and treatment of illness (WAM= 4.55); prevention and control of coronavirus (WAM=4.45); updated information about coronavirus hot-spot areas in India (WAM=4.39) and procedure for seeking treatment of suspected coronavirus patients at pandemic preparedness clinics (PPCs) or hospitals (WAM= 4.36). Information related to the vulnerable groups, level of risk, and coronavirus protection products and their availability at major retail outlets (e.g., masks, sanitizers, etc.) were also indicated as essential information needs by the respondents. These findings are consistent with previous studies, though on the dengue epidemic and H1N1 virus epidemic (Majid et al., 2019; Li et al., 2014; Majid & Rahmat, 2013), that these are the major information needs indicated by the respondents during the pandemic.

However, the least important information need related to novel coronavirus as indicated by respondents were facts about eating bats concerning the spread of the novel coronavirus (WAM=3.11), controversies about the hidden agenda of novel coronavirus outbreak (WAM= 3.34) and updated number of coronavirus infected cases across the world (WAM= 3.94).

Therefore, it can be concluded that the general public in India had diverse information needs during the outbreak of novel coronavirus.

Table 3. Importance of Corona Virus Related Information Needs (N=1310)

Ranking	Information Need	Importance Level	
		WAM	SD
1	Coronavirus signs and symptoms	4.74	0.713
2	Causes and treatments of illness	4.55	0.678
3	Prevention and control of coronavirus	4.45	0.974
4	Updated information about coronavirus hot-spot areas in India	4.39	0.962
5	Procedure for seeking treatment of suspected coronavirus patients at Pandemic Preparedness Clinics (PPCs) or hospitals	4.36	1.020
6	Coronavirus vulnerable groups and the level of risk	4.32	1.037
7	Updated list of coronavirus affected cities in India	4.25	1.058
8	Coronavirus protection products and their availability at major retail outlets (e.g. masks, sanitizers, etc.)	4.25	1.059
9	Information about the proper procedure for washing hand	4.17	1.162
10	Updated information about current and future Pandemic Plan of Government of India	4.16	1.153
11	Government's advice for individuals having corona virus like symptoms	4.09	1.171
12	Updated number of fatalities and recoveries from coronavirus in India	4.04	1.083
13	Availability of medicines and vaccination in India against coronavirus and their side effects	3.99	1.287
14	Updated number of coronavirus infected cases across the world	3.94	1.240
15	Controversies about the hidden agenda of coronavirus outbreak	3.34	1.481
16	Facts about eating bats concerning the spread of coronavirus	3.11	1.454

WAM= Weighted Arithmetic Mean, SD=Standard Deviation

4.4. Preferred Information Sources for Seeking Information related to Novel Coronavirus

Respondents were asked about the information sources used by them for seeking information related to the novel coronavirus. They were provided with an exhaustive list of various types of information sources (online sources, print sources, and human sources) to indicate their most preferred and trustworthy information source used by them for seeking coronavirus related

information. A five-point semantic differential scale was used to rate their preferences for the use of a particular information source, where 1 meant "least preferred" and 5 meant "most preferred". The weighted arithmetic mean (WAM) scores and standard deviation (SD) were computed for each information source and they were ranked in descending order, placing the information source with the highest WAM score value at the top.

Table 4. Preferred Information Sources for Seeking Corona Virus related Information (N=1310)

Ranking	Source	Preferredness level	
		WAM	SD
1	News websites (ANI , BBC, CNN, etc)	4.26	0.955
2	Dedicated websites of Corona Virus, Govt. of India	4.10	1.212
3	Medical Staff	3.73	1.407
4	Family Members/Friends/Colleagues	3.57	1.284
5	Social Media (WhatsApp, Facebook, Instagram, Youtube, Twitter, Telegram, LinkedIn)	3.55	1.398
6	Newspapers (online/print)	3.46	1.372
7	Television	3.26	1.517
8	Emails/ Circulars from Schools/Companies	3.12	1.421
9	Posters/Brochures	3.05	1.326
10	Radio	2.54	1.457

WAM= Weighted Arithmetic Mean, SD=Standard Deviation

As shown in table 4, News websites like ANI, BBC, CNN (WAM= 4.26), and Dedicated websites of Coronavirus, Govt. of India (WAM= 4.10) were found to be the two topmost sources of seeking information related to the virus. This may be because people always look for authentic and reliable information instead of going for other sources. Conspicuously, Govt. of India has launched different platforms and apps to prevent any panic among the masses because of the fake and unauthentic information and has urged people of India to refer to the information provided on the government websites, and apps suggested, hence, these can be considered as most trusted sources of getting virus-related information. After these two information sources, human sources (medical staff and family members/friends/colleagues) were found to be the third and fourth most preferred sources of seeking information (WAM= 3.73 and 3.57 respectively). Previous studies have also shown that during pandemic family members and healthcare

professionals proved to be an important source of information regarding virus outbreak (Majid & Rahmat, 2013; Wong & Sam, 2010). Furthermore, social networking media platforms such as WhatsApp, Facebook, Instagram, Youtube, Twitter, Telegram, LinkedIn were found to be the fifth most preferred source of information after human sources (WAM=3.55). This is consistent with the previous study by Majid et al. (2019), where they found social networking sites as one of the critical modes of seeking information regarding virus outbreak. The three least preferred sources of seeking information related to the coronavirus were emails/ circulars from schools/companies (WAM=3.12), posters/brochures (WAM=3.05), and radio (W=2.54). A previous study by Majid and Rahmat (2013) also found that emails/circulars from schools/companies and posters/brochures were the least preferred mode of seeking information and it might be because they fail to provide up-to-date information.

Hence, it can be reported that the general public in India uses various types of information sources (online sources, print sources, and human sources) for seeking coronavirus related information. Notably, the appropriateness of information source chosen by the general public is largely based on the richness of the information source (accessibility, personal warmness, convenience, minimum message distortion, and promptness) and its credibility (Khan & Ali, 2019; Majid et al., 2015).

4.5. Purpose of Seeking Novel Corona Virus related Information

Respondents were further asked to indicate their purpose of seeking COVID-19-related information. They were provided a list of statements representing several purposes for seeking information related to coronavirus and were allowed to select more than one statement. As shown in table 5, most respondents (89.92%) indicated that they needed coronavirus information to remain vigilant and to adjust their precautionary measures. The second topmost purpose for seeking corona virus-related information was to find out the latest information related to the coronavirus for personal use (76.49%). These findings are consistent with the previous study by Majid and Rahmat (2013) which reported that the most important purpose of seeking information related to the virus is to remain vigilant and adjust precautionary measures themselves. A good percentage of respondents (70.46%) indicated that they need information related to coronavirus so that they can help others in need of the information. Majid and Rahmat (2013) also reported

that this was one of the important purposes for seeking information and this may indicate their sense of responsibility towards the community members. However, only 59.92% and 46.79% of respondents indicated that the purpose of seeking information was related to preparing advisory and circular for organization and research and development purposes.

Table 5. Purpose of Seeking Corona Virus related Information (multiple responses)

Ranking	Purpose	Frequency (N=1310)	Percent
1	To remain vigilant and adjust my precautionary measures	1178	89.92
2	To find out the latest information related to coronavirus for my personal use	1002	76.49
3	To help someone who was looking for information	923	70.46
4	To prepare advisory and circular related to coronavirus for distribution within my organization and locality	785	59.92
5	To find out information about coronavirus for research and development	613	46.79

4.6. Problems in Seeking Novel Corona Virus related Information

After indicating the most preferred information sources and purposes of seeking information related to COVID-19, respondents were further asked to report the problems they generally face while seeking information about the virus. Respondents were allowed to give multiple answers. Table 6 demonstrates that a vast majority of the respondents (79.69%) showed their concerns over the credibility and authenticity of information on the subject of coronavirus. They faced problems while deciding whether the given information can be considered authentic or not. The second most important problem faced by the respondents was the availability of too much repetitive information throughout the internet. This problem can be attributed to the information overload regarding the coronavirus. There is an overwhelming amount of information available all over the internet and people find it difficult to get authentic and reliable information. Another significant problem faced by almost 51% of the respondents was too many updates and frequent content changes. Very few respondents (29.92%) indicated frequent email and difficulty in understanding coronavirus related information as problems in seeking information related to COVID-19.

Table 6. Problems in Seeking Corona Virus related Information (multiple responses)

Problem	Frequency (N=1310)	Percent
Credibility or authenticity of information on corona virus	1044	79.69
Too much repetitive information available through the Internet	849	64.81
Too many updates and frequent changes in content	667	50.91
Difficulty in adequately understanding corona virus information	504	38.47
Too frequent emails containing too much information	392	29.92

5. CONCLUSION

COVID-19 outbreak is having a global impact and turning out to be a significant stressor for most of humanity across the world. Apart from the grave concerns of COVID-19, there are other significant consequences that are arising out due to the spread of misinformation and fake news regarding COVID-19. An analysis by fact-checking website BOOM has found that 35 percent of false and misleading claims were made from January to May 2020 in India concerning coronavirus (Chowdhury, 2020). Notably, the government departments and healthcare agencies in India are striving hard to deliver accurate and authentic information about disease symptoms, precautions, potential risks, and possible treatments and interventions. However, the spread of misinformation regarding coronavirus is unstoppable. Therefore, this study has addressed the knowledge gap for it is probably the first study that provides an insight into the information needs and seeking behaviour of general public in India during the COVID-19 outbreak. It is worth mentioning that well-timed access to healthcare information during an outbreak plays a significant role in restraining its spread. This study's findings could help social welfare departments, government health departments, hospitals, health information communicators, and other organizations engaged in public safety and well-being in India. They may utilize this study as a reference guide for developing suitable information strategies to keep the general public updated during the coronavirus outbreak without causing excessive overload of information.

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