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Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic

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ABSTRACT

Novel Corona Virus Disease (COVID-19) originating from China has rapidly crossed borders, infecting people throughout the whole world. This phenomenon has led to a massive public reaction; the media has been reporting continuously across borders to keep all informed about the pandemic situation. All these things are creating a lot of concern for people leading to heightened levels of anxiety. Pandemics can lead to heightened levels of stress; Anxiety is a common response to any stressful situation. This study attempted to assess the knowledge, attitude, anxiety experience, and perceived mental healthcare need among adult Indian population during the COVID-19 pandemic. An online survey was conducted using a semi-structured questionnaire using a non-probability snowball sampling technique. A total of 662 responses were received.

The responders had a moderate level of knowledge about the COVID-19 infection and adequate knowledge about its preventive aspects. The attitude towards COVID-19 showed peoples' willingness to follow government guidelines on quarantine and social distancing. The anxiety levels identified in the study were high. More than 80 % of the people were preoccupied with the thoughts of COVID-19 and 72 % reported the need to use gloves, and sanitizers. In this study, sleep difficulties, paranoia about acquiring COVID-19 infection and distress related social media were reported in 12.5 %, 37.8 %, and 36.4 % participants respectively. The perceived mental healthcare need was seen in more than 80 % of participants. There is a need to intensify the awareness and address the mental health issues of people during this COVID-19 pandemic.

1. Introduction

COVID-19 started in December 2019, like a viral outbreak in Wuhan city of central Hubei province of China (Holshue et al., 2020). A cluster of about 40 cases of pneumonia of unknown etiology was reported, some of the patients being vendors and dealers in the Huanan Seafood market there. World Health Organization (WHO) along with Chinese authorities started working together and the etiological agent was soon established to be a new virus and was named Novel Corona Virus (2019-nCoV). Meanwhile, on 11th January China announced its first COVID-19 related death of a 61-year-old man, exposed to the seafood market (WHO, 2020a). Over a period of few weeks, the infection spread across the globe in rapid pace (WHO, 2020b). Looking at the stretch of countries this outbreak spread to, WHO declared it a Public Health Emergency of International Concern on 30th January 2020 (WHO, 2020b, 2020c). Amidst the increasing deaths in China, the first death outside China was (of a Chinese man from Wuhan) reported in the Philippines on 2nd February. On 11th February, WHO announced a name for the new coronavirus disease: COVID-19 (WHO, 2020c). On the 11th of March, WHO declared COVID-19 - a pandemic as by then about 114 countries were affected (WHO, 2020c).

Coronaviruses, so named due to the outer fringe of envelope proteins resembling crown ('*corona*' in Latin), are a family of enveloped RNA viruses (Burrell et al., 2017). They are generally pathogenic to mammals and birds and cause mild upper respiratory tract infections in humans. They occasionally can be transmitted to a larger human population and can cause severe respiratory illnesses exemplified by Severe Acute Respiratory Syndrome (SARS) and Middle-East Respiratory Syndrome (MERS) in 2003 and 2012 respectively.

Due to the similarity between COVID-19 and SARS Coronavirus, and because the virus was posing to be a global threat, online courses for awareness of healthcare workers around the world were initiated (WHO, 2020c). Funds were raised globally and Strategic Preparedness and Response Plan (SPRP) was set up aimed to protect the states with

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weaker health systems. The targets were to limit transmission, provide early care, communicate key information and minimize social and economic impacts. Also, WHO focused on developing easy-to-apply diagnostics, accelerating existing vaccine candidates and preventing infection (WHO, 2020c).

The state of lock-down in many parts of the world, which are contributing largely to the global economy has led to the halting of services and products. This has led to a break in the global supply chains and thus, affected the global economy brutally (Ebrahim et al., 2020). Transport has been affected globally. Import of steel, iron, inorganic chemicals, etc. from China and other countries has been grossly affected. Transport business even at national levels has ceased due to lock-down in different countries. Most company employees are working from home, which has its financial disadvantages. Educational institutions have been shut down. The uncertainty and postponement of examinations is also a stressor for young minds.

Along with the economic impacts, the ever-increasing morbidity and mortality due to COVID-19 is the biggest setback. The WHO report revealed the mortality rate to be between 3–4 % (WHO, 2020b); however, it seems that the morality statistics are underestimated (Baud et al., 2020).

Yet, because COVID-19 infection is a highly contagious disease and has affected a large population, the total number of deaths caused due to this virus has exceeded that caused by any of its predecessors. As on the morning of 30th March 2020, a total of 693,224 confirmed cases has been reported from 204 countries of the world; also, there are 33,106 confirmed deaths across the globe, as reported by the WHO (WHO, 2020d).

As COVID19 is a new disease and is having the most devastating effects globally, its emergence and spread, causes confusion, anxiety and fear among the general public. Fear is the breeding ground for hatred and stigma. Social stigma has arisen as certain populations (Indian north-east people) are targeted as being the reason for this outbreak (WHO, 2020c). It is vital to avoid this stigma as it can make people hide their illness and not seek health care immediately. WHO is providing expert guidance and answers to public questions, to help people manage fear, stigma, and discrimination during COVID-19 (WHO, 2020c). As research into COVID-19 continues, a lot of the facts keep on changing and many myths are also prevalent in the general population regarding the prevention and management of the infection. In the time of widespread use of social media, these myths along with fake news around corona are also spreading rapidly. These are sometimes very disturbing for certain individuals. Several sites including WHO are thus providing myth busters and authentic information (WHO, 2020c). Governments are also urging people to not sharing these messages without checking their authenticity.

Since the onset of the coronavirus pandemic there has been an increased use of masks (Feng et al., 2020) and sanitizers resulting in exhaustion of resources in the market. A shortage of personal protective equipment endangers health workers worldwide (WHO, 2020c). The absence of appropriate protective measures is a major cause of concern among medical personnel. Especially in a country like India which is a densely populated country without a robust healthcare infrastructure, it is a cause of worry. Some degree of panic also resides in public due to the unavailability of basic protection measures. As of 30th March 2020, Indian Govt. has registered a total of 1250 cases (1117 active cases, 101 cured or discharged and 32 deaths) due to COVID-19 infection (MoHFW, 2020). The governments, media, doctors, researchers, celebrities, police and other stakeholders of the society appealed to the public to avoid public gatherings including sports, religious ceremonies, family functions, meetings as well as classes in school, to prevent the global spread of coronavirus infection (McCloskey et al., 2020). Despite these efforts, many people ignore the importance of social distancing due to attitudinal issues.

The anxiety and concerns in society are globally affecting every individual to variable extents. Recent evidence suggests that individuals who are kept in isolation and quarantine experience significant distress in the form of anxiety, anger, confusion and post-traumatic stress symptoms (Brooks et al., 2020). The knowledge and attitudes of the public are expected to largely influence the degree of adherence to the personal protective measures and ultimately the clinical outcome. Hence, it is important to study these domains in the Indian population. The mental health issues are other major health concerns, which are expected to increase day by day during this epidemic. There is a paucity of research that evaluated the mental health concerns during this pandemic. Considering the relevance of all the above factors, it was aimed to evaluate knowledge, attitude, anxiety and perceived mental healthcare needs in the community during the coronavirus pandemic in India.

2. Materials and methods

This was a cross-sectional, observational study carried out in India. A Snowball sampling technique was used. An online semi-structured questionnaire was developed by using google forms, with a consent form appended to it. The link of the questionnaire was sent through e-mails, WhatsApp and other social media to the contacts of the investigators. The participants were encouraged to roll out the survey to as many people as possible. Thus, the link was forwarded to people apart from the first point of contact and so on. On receiving and clicking the link the participants got auto directed to the information about the study and informed consent. After they accepted to take the survey they filled up the demographic details. Then a set of several questions appeared sequentially, which the participants were to answer.

It was an online study. Participants with access to the internet could participate in the study. Participants with age more than 18 years, able to understand English and willing to give informed consent were included. The data collection was initiated on 22nd March 2020 at 4 PM IST and closed on 24th March 2020 at 4 PM IST. We were able to collect data from across various states of India. The socio-demographic variables included age, gender, occupation, education, domicile, area of residence and religion.

The online self-reported questionnaire developed by the investigators contained the following six sections related to awareness (knowledge), attitude, anxiety and perceived mental health care needs during the pandemic of the novel coronavirus.

There were 6 multiple choice questions in the awareness section. The attitude section contained 7 items that were to be rated in the 5-point Likert scale format. Anxiety related to novel coronavirus infection had 18 items that were supposed to be rated on a 5-point Likert scale ranging from never, occasionally, sometimes, often and always. The perceived mental healthcare need was assessed by 4 items on a 3-point Likert scale. Descriptive statistics have been used in the study to analyse the findings. Mean and standard deviation and proportions have been used to estimate the results of the study.

3. Result

An online survey, related to awareness, attitude, anxiety experience, and perceived mental health care needs in the community during the corona pandemic, was conducted in the Indian population. A total of 662 responses were recorded. All the participants were above 18 years of age and Indian origin. The study included only those participants who understood English and had access to the internet. Hence, by default individuals with a higher level of education were included in the study. The lowest educational level in this study was observed to be standard 10th. The highest qualification of more than 90 % of the population was graduation and above. Approximately, half of the population were healthcare professionals. The mean age of the participants was 29.09 ± 8.83 years. Among the participants, 51.2 % were females and 48.6 % were males. More than 80 % of participants were from urban areas. The participants belong to 25 states or union territories of

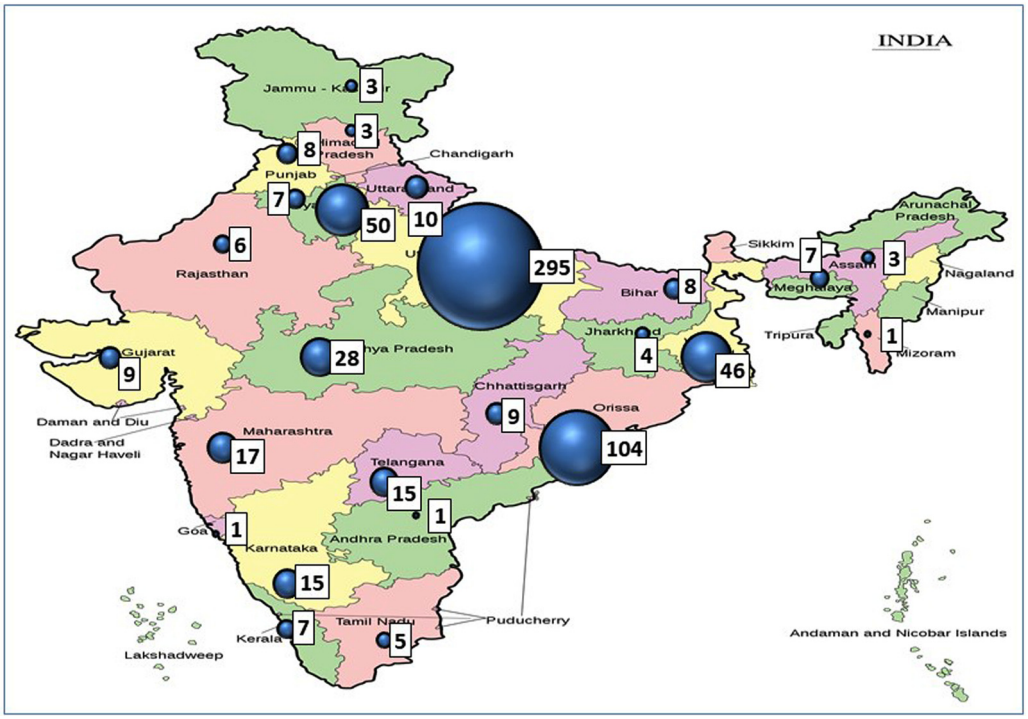

Fig. 1. Distribution of study sample across various states of India].

the country with maximum representation from Uttar Pradesh, followed by Odisha, Haryana, and West Bengal (Fig. 1). Approximately 87 % of the participants were Hindus.

3.1. Part I: awareness about COVID-19 pandemic

A considerable number of responders were passably aware of the basic elements of the disease, as shown in Fig. 2. Out of the total participants, 29.5 % answered that the virus spreads through multiple modes like touching, kissing, sneezing, and food; also 56 % negated the notion of pets transmitting the virus. Only 43 % of responders regarded COVID-19 as a highly contagious disease. Most participants (97 %) acknowledged that washing hands frequently could stop the spread of infection. Only 18.2 % regarded fever as a symptom of COVID-19, which is known to be a major symptom.

3.2. Part II: attitude towards COVID-19 pandemic

As shown in Fig. 3, more than 96 % of the participants agreed to quarantine/ isolate themselves if they had a fever and cough. Most (98 %) of the participants thought social distancing is essential to stop the virus from spreading. However, 88.7 % of them considered traveling within the country to be safe during the pandemic. Approximately 60 % of participants believed that patients recovered from COVID-19 infection, should not be allowed to stay within the community at this time.

3.3. Part III: anxiety towards the COVID-19 pandemic

Drawing from the data given in Table 1, more than 80 % of the participants were preoccupied with the COVID-19 pandemic over the past week. Approximately 40 % of the participants were paranoid with the thought of contracting the Novel Coronavirus infection over the past week. About 72 % of participants reported being worried for themselves and their close ones during the ongoing pandemic. Approximately, 12 % of the participants had sleeping difficulty due to being worried about the pandemic in the past week. Among the participants, 82 % had reduced social contact, and about 90 % avoided partying meetings, and gatherings. Around 3/4th of the participants avoided ordering food online last week. A total of 80 % of participants repeatedly discussed the pandemic with their friends during this period. In our study, 41 % of the people affirmed feeling scared when someone in their social circle became sick. About 1/3rd participants reported having inappropriate social behavior owing to the fear of contracting the virus. Almost 33 % of the people accepted that they felt obliged to buy and stock essentials at home. In this study, 37 % of participants admitted using a mask without the apparent signs and symptoms of the infection and more than 75 % felt the need to use sanitizers and gloves. Almost 85 % agreed that they frequently washed their hands. Nearly half the participants felt panic by the reports of COVID-19 pandemic on the electronic and print media over the past week.

3.4. Part IV: perceived mental healthcare needs

As shown in Table 2, for about 2/3rd of the participants an idea of someone being there to absolve their worries regarding the COVID-19 pandemic was welcoming. A total of 75 % agreed on the necessity of mental healthcare for individuals who panic amid the pandemic situation. More than 80 % of participants felt the need for the professional help from mental health experts to deal with emotional issues and other psychological issues during this pandemic.

4. Discussion

Epidemics and pandemics are a periodic phenomenon. People in the community face several challenges during such periods. Lack of awareness often leads to an unconcerned attitude, which may adversely affect the preparedness to meet these challenges. Impacts of these epidemics and pandemics are often intense, which may adversely affect the mental well-being of a given population. The fear and anxiety related to epidemics and pandemics also influence the behavior of people in the community. Hence, this study attempted to evaluate the awareness, attitude, anxiety and perceived mental healthcare needs in the society.

Rubin et al. (2009) had conducted a similar study during the swine

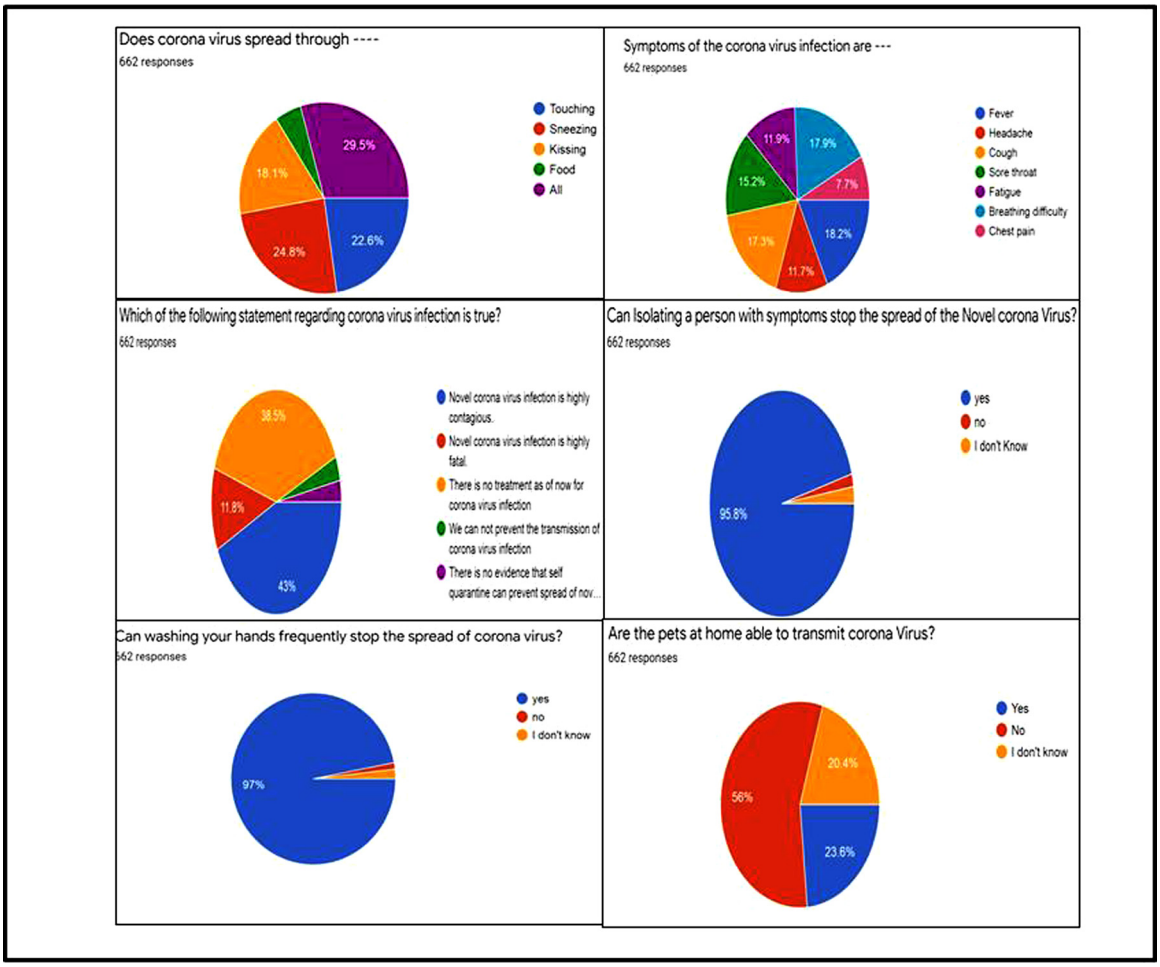

Fig. 2. Awareness of participants about COVID-19 pandemic].

flu outbreak in the United Kingdom (Rubin et al., 2009). They had conducted the survey telephonically over four days in the native population who heard the term "swine flu" and was able to speak English. There is much similarity like illness between swine flu and COVID-19 infection. Both illnesses are viral in origin involving the respiratory system and spreading by droplet infection. Similar precautions are often recommended for the prevention of swine flu and COVID-19 infection. Unfortunately, there is no specific treatment or vaccine available for COVID-19 infection, whereas both treatment and vaccines are present for swine flu.

All epidemics and pandemics have their unique characteristics in terms of causality, progression and control measures. It is crucial to provide health education and create awareness during such situations for effective prevention of disease spread (Johnson and Hariharan, 2017). It has been seen in a previous study that health professionals often have better awareness, positive attitudes towards epidemics/pandemics and they often experience low levels of anxiety (Mishra et al., 2016). But, a study from Ethiopia reported, poor knowledge and erroneous believes of healthcare professionals, during the Ebola virus outbreak in 2015 and it urged for intense training of the healthcare professionals (Abebe et al., 2016). In a study conducted in Trinidad and Tobago in 2016, following the H1N1 epidemic, it was seen that a significant proportion of the general public was unaware of the seriousness and measures of prevention of the epidemic (Johnson and Hariharan, 2017). A similar study, evaluating the knowledge, attitude, and perception of Ebola virus infection among secondary school children of Nigeria, found that most of the participants had inadequate knowledge and carried a negative attitude towards the outbreak (Ilesanmi and Alele, 2016).

Most of the participants in our study were educated - either graduate or post-graduate and (%) were healthcare professionals. The participants had a moderate level of awareness regarding the mode of spread, symptoms, and yet adequate awareness about the preventive measures. It was possibly due to the government and media emphasizing more on the preventive measures. Educated and especially healthcare people get more sensitized by these information's.

The study participants reported frequent use of sanitizers, hand wash, and masks during the past one week. This indicates the increasing concern of participants towards personal hygienic measures to avoid COVID-19 infection. Sensitization and awareness about COVID-19 are reflected in their behavior and attitude significantly as most of the participants (more than 4/5th) agreed with – social distancing, avoiding travel, self-quarantine and adequate hygienic measures. However, their fear, apprehension and possibly stigma is reflected when they were asked about the inclusion of recovered COVID-19 patients to the mainstream of society. Stigma is associated with many such health conditions. Adequate awareness may minimize the stigma and facilitate acceptance in the general population.

When anxiety affects a larger population, it may result in panic buying, leading to exhaustion of resources. It also can lead to limitations in daily activities, avoidance behavior causing limited socialization, self-medication. Because of anxiety, people adopt various unwanted lifestyle and dietary modifications under the influence of rumors. These may affect mental health adversely. Hence, it is important to deal with the mental health difficulties in situations of the pandemic. Similarly, additional changes like – isolation, social

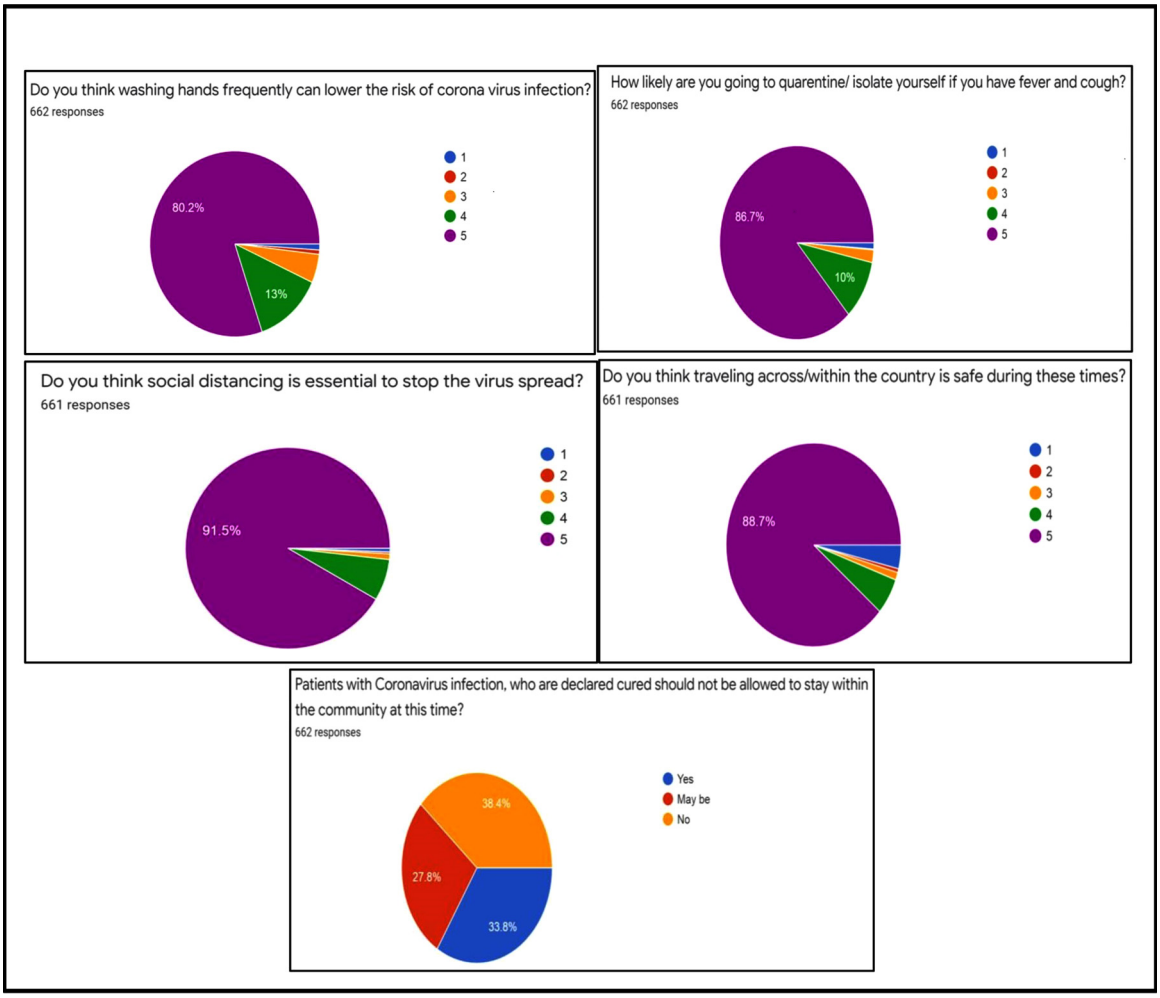

Fig. 3. Attitude of participants towards COVID-19 pandemic].

distancing, self-quarantine, restriction of travel and the ever-spreading rumors in social media are also likely to affect mental health adversely (Banerjee, 2020). In our study, we found approximately 28 % of people reporting sleep difficulties. More than two-thirds of participants reported themselves worried after seeing posts about COVID-19 pandemic in various social media platforms and approximately 46 % of

Table 1
Anxiety related to COVID-19 pandemic.

Sl.	Items	% of responses who feel anxious (often and always) (N = 662)
1	From the last week, how often do you think about Novel Coronavirus Pandemic?	82.2
2	From the last one week, how often you feel paranoid about contacting the novel Corona Virus infection?	37.8 %
3	From the last week, how often you avoid partying?	90.1
4	From the last week, how often you avoid social contact?	82.1
5	From the last week, how often you avoid large meetings and gatherings?	89.1
6	From the last week, how often you avoid ordering food online?	76.7
7	From the last week, how often you have talked to your friends about the corona Pandemic?	80.7
8	From the last one week, how often you have had difficulty sleeping by being worried about the Coronavirus pandemic?	12.5
9	From the last week, how often you feel affected by the posts on social media about corona Virus infection?	36.4
10	From the last week, how often do you feel affected by the talks of Novel Corona Virus Pandemic on the newspaper and news channels?	46.1
11	From the last week, how often do you feel the need to buy and stock all essentials at home?	31.7
12	From the last week, how often do you get afraid if anyone in your social circle reports of being sick?	41.3
13	From the last week, how often do you feel the need to use the sanitizer/gloves?	77.4
14	From the last week, how often do feel the need to constantly wash your hands?	84.5
15	From the last one week, how often do you feel worried about yourself, and close ones regarding the spread of Novel COVID19 Viral Infection?	72
16	From the last week, how often do you use a mask without any apparent signs and symptoms of the infection?	36.6
17	From the last week, how often does the Idea of Novel Corona Viral Infection freak you out leading to inappropriate behaviours with anyone?	30.5 %
18	From the last week, how often does the Idea of Novel Corona Viral Infection freak you out post on social media?	44.7 %

Table 2
Perceived mental healthcare needs among participants during COVID-19 pandemic.

Sl.	Items	Percentage of people who perceive there is a mental health need. (N = 662)
1	Do you think it would be nice to talk to someone about your worries for the COVID 19 viral epidemic?	66.5
2	Do you think it is necessary to get mental health help if one panics in lieu of the Pandemic situation?	75.1
3	Do you think it would be beneficial if mental health professionals help people in dealing with the current COVID19 pandemic situation?	83.5
4	Will you suggest people for obtaining mental health help to people who are highly affected by the COVID19 pandemic?	82.9

participants reported their worries related to the discussion of COVID-19 pandemic in news channels and print media. This indicates that a significant proportion of participants in the survey, despite having adequate awareness about coronavirus infection, are largely influenced by media information. Media influences the mental well-being and add to the level of anxiety. The swine flu pandemic of 2009–2010, which resulted in high mortality worldwide also caught global media attention and evoked anxiety among the public significantly (Everts, 2013).

Approximately, one-third of participants had the urge to buy and stock things at home during the past week. Panic buying is often seen during pandemics/epidemics, which leads to the exhaustion of resources. Media reporting about the shortage of resources and essential things of daily living further increases the panic buying. Sensible media reporting during such a crisis may be beneficial in tackling mental health challenges.

In our study, frequent inappropriate behaviors (anger, restlessness, worry) and pre-occupation about COVID-19 infection leading to posting on social media, was seen in 1/6th and 1/3rd of the participants respectively. Similarly, two-thirds of the participants felt the need to talk about their worries related to COVID-19 pandemic with someone. The opportunities to vent out their distress was limited in most places due to the lockdown state. At the same time, the electronic and print media, as well as social media, are constantly discussing the pandemic status. As a result, people are not able to cope with and feeling emotionally exhausted. More than three fourth of the participants felt the need for help for their mental well-being. Our study population was not infected with COVID-19 infection, still, there was an increased need for mental healthcare. Those individuals, who are infected with COVID-19 infection or suspected of having the infection and the health workers, who are dealing with COVID-19 infected patients are expected to have more compromised mental health and higher perceived mental healthcare needs.

Meeting the individual mental health needs in typical clinical settings that need face-to-face interviews for evaluation, is challenging in the current scenario considering the risk of the spread of COVID-19 infection. In this situation considering online mental health consultation might be more beneficial and it can deliver the consultation at the doorstep (Yao et al., 2020).

5. Limitations

The study is limited to the people who had smartphones, e-mail IDs and the ability to English. This represents the educated population of the country, so it should not be generalized to the whole population. The awareness, attitude, anxiety and perceived mental healthcare need in uneducated people may be different from the findings of our study.

6. Conclusion

During this coronavirus pandemic, most of the educated people and health professionals are aware of this infection, possible preventive measures, the importance of social distancing and government initiatives were taken to limit the spread of infection. However, there are increased worries and apprehensions among the public regarding acquiring the COVID-19 infection. People have higher perceived needs to deal with their mental health difficulties. There is a need to intensify the awareness program and address the mental health issues of people during this COVID-19 pandemic. There is no study to date that evaluated the mental health perspectives of people during the COVID-19 pandemic. It is important to study the mental health impacts in various populations (general populations, cases of COVID-19, close contacts of COVID-19 and healthcare workers) for planning effective intervention strategies for them.

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Declaration of Competing Interest

None.

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