



## RESEARCH ARTICLE

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## Awareness Regarding COVID -19 among General Public – Known and Unknown: A Population- Based Survey

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### ARTICLE HISTORY

Received Jan 02, 2021

Accepted Jan 27, 2021

Published Feb 27, 2021

COVID 19 is a respiratory disease which is caused by Novel corona virus. This virus has been reported to be originated in China in Dec 2019. In India the first case was reported on 30th Jan 2020. Since then the number of cases has been growing drastically all over the country. WHO has declared COVID 19 as a global pandemic on 11th March 2020 [1]. The number of cases infected with COVID -19 has reached approximately 15,666,840 and 6,36,789 have died because of the infection (24th July 2020). The transmission of this virus was thought to be through droplet infection and contact earlier [2]. But now WHO has declared it as an airborne infection wherein the virus remains suspended in air for longer time making the scenario even worse. COVID 19 is a threat as it can kill healthy adults and is transmitted efficiently. It can also be transmitted by people who are mildly ill or even asymptomatic. Therefore, it is very important to prevent transmission from one person to another. Older adults and those with underlying conditions are at increased risk for severe infection and account for death due to COVID 19 [3,4]. Other factors that make people more vulnerable to the disease is inability to understand the health information, make well-informed decisions, and take optimal health-promoting actions.

Strict guidelines have been developed by Ministry of Health and Family welfare and WHO for the disease control and prevention with particular emphasis on protective measures. These guidelines include frequent handwashing, use of mask, social distancing, cough etiquettes and home quarantine. Various programs have been released through WHO and Ministry of Health and family welfare through social media as well as TV programs. There has been lot of misunderstanding regarding how it can spread and the necessary precautions that should be taken to prevent infection because lot of incorrect information that is been provided to the general public by few unreliable sources like WhatsApp, Facebook etc.

A huge excitement surrounds the information regarding human

trial of COVID-19 vaccine in India which will take some time. Meanwhile, following preventive actions can help reduce the risk of viral infection and this is possible only when the general public is aware of the COVID -19 such as its spread, signs and symptoms and its management [5].

Knowledge regarding COVID 19 among Nepal people is satisfactory and among Chinese was good but to the best of the authors knowledge very little is known about the public awareness regarding the nature and prevention of COVID -19 in India [6]. If the general public are aware of the disease, they are more likely to take actions to prevent it or approach healthcare providers at the right time for checkup. Lack of awareness is not only dangerous in terms of worsening health outcomes, it also affects the quality of life. Therefore, it's important to assess the knowledge regarding COVID-19 among general public of India to identify the gaps in knowledge and provide information through mass media which will reach to the remotest place even. Hence, this study aims to explore the awareness regarding COVID-19 and to identify the gaps in knowledge among general public residing in India.

### Methods

A cross sectional survey was conducted in May 2020 using online platform as it was not feasible to do a community-based survey during this lockdown period when social distancing is to be followed. The institute ethics committee approved the study protocol vide letter no IEC-436/22.05.2020, RP-07/2020 before the formal survey. It was assumed that people have some knowledge regarding COVID-19 as lot of information is being provided through newspapers, TV channels, radio and social media. Study included all adults above 16 year of age using WhatsApp on their smart phone, desktop or laptop and can read and understand English. Snowball sampling was employed to recruit more participants from all over the country. Initially the link was shared with the

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acquittances of the researchers through WhatsApp messaging and then they were requested to further share the link with their colleagues, friends and welfare associations. An online structured questionnaire was made using google form which was based on the COVID -19 guidelines and information by WHO and Ministry of Health and family welfare. The consent form and participant information sheet were attached along with the google form which provided participants freedom to fill or not to fill as per their convenience and availability. The questionnaire was made in English only. It was reviewed by experts for relevance, simplicity and internal consistency. Reliability is 0.80. Sample size calculated was 345 considering 66% knowledge with 5% error but a total of 1178 participants responded within 2-3weeks period after which the researcher got very few responses [7,8]. Hence, link sharing was stopped after three weeks and response acceptance was stopped after four weeks.

The tool included demographics of the participants i.e. age, gender, educational status, occupation and place of stay. The knowledge questionnaire had three domains. Epidemiological domain which pertains to items related to knowledge of the nature of the disease, causative agent, mode of transmission, incubation period and vaccine availability. Clinical domain included items related to signs and symptoms, management, and consequences. Preventive practice domain included items related to social distancing, quarantine, hand washing, lockdown, use of masks and sanitization. For evaluation of the responses to these questions correct answer was allocated a value of one and wrong answer was marked zero. Maximum score was 25. Score  $\geq 15$  was good knowledge and below 15 was poor knowledge.

The final part of the tool includes a feedback of participants which included item related to overall coverage of content, if the survey was helpful to them and an open ended question to express anything related to survey.

### Data Analysis

Data were summarized as frequencies and percentages. Mean and median was calculated for knowledge scores, t test to compare knowledge between males and females. And chi square/ ANOVA to seek association between knowledge and select variables. Statistical analysis was performed using the statistical program for social science (IBM SPSS corp. SPSS statistics ver. 20) statistical significance was considered at p value of  $< 0.05$ .

### Results

**Demographics:** The mean age of the participants was  $25.01 \pm 8.2$  (14-80 years), 614 (52.2%) were females, 976 (83%) were graduates or above. Almost equal number of the participants were residing in cosmopolitan cities, capital cities or small towns 30.1%, 20.9% and 21.1% respectively. Majority were students (63.9%) followed by working in private or govt jobs (30.1%)

**Source of Information:** Mostly participants reported that information about COVID -19 was received from TV, newspaper (79.6%) followed by internet (72.3%). Only few received information from health care workers. Very few received information from family and friends and Health care professionals (6.6% and 5.9%) respectively.

### Knowledge Assessment

Shows the frequencies of correct responses to each question in epidemiological, clinical and preventive practice domains. Almost all participants were aware that corona virus is a respiratory infection (96.9%). Most of them were aware about the incubation period (86.4%), risk factors of COVID-19 infection (84.8%) and who should be screened (86.4%) but only 62.5% knew about the mode of transmission.

In the clinical domain, only few knew regarding the complications (43.8%) and treatment of COVID-19 (28.7%). Almost all participants were aware of symptoms of the disease (99.1%) and knew that medical help should be taken if symptoms develop (95.5%).

In the preventive practices domain, majority knew hand hygiene prevents spread of infection (96.6%), self-quarantine (95%) and how COVID-19 can be prevented (90.8%) respectively. Few participants knew the duration of handwashing (47.8%), sequence of activities to be performed when come from outside (47.4%).

The total mean knowledge score is  $18.48 \pm 3.31$  (0-25). Mean knowledge score in epidemiological, clinical and practice domain is shown in.

**Factors related to knowledge:** Overall knowledge varied across several characteristics of study participants. Younger participants ( $r = -0.08$ ), females ( $p < 0.001$ ) and participants working in private companies and students showed significantly higher knowledge about COVID 19. Participants who were professionals had lower knowledge compared to students and housewives.

Females had higher knowledge in preventive practice domain compared to males ( $p < 0.05$ ), students had higher knowledge in epidemiological domain and preventive practice domain ( $p < 0.00$ ,  $p < 0.03$ ) respectively.

### Discussion

To the best of our knowledge this is the first study in India to assess knowledge regarding COVID-19 among general public. Lot of information is available about COVID-19 on social media, ministry of Health and family welfare official website, TV programs, webinars, WHO website etc. All information is easily accessible as well as transmitted through TV and radio programs on regular basis which has proved effective in increasing the knowledge about COVID-19 among general public. Most of participants (87.7%) had good knowledge regarding COVID-19. There is no difference in the knowledge as per place of stay and education level which might be because this being a novel virus general public paid attention to the information provided and were knowing about all aspects of the new disease. Housewives and retired persons had poor knowledge compared to students and working participants ( $p = 0.04$ ) which may be because they had less access to information on internet or else were not active in browsing. Contrary to this among Health care professionals 89% demonstrated sufficient knowledge of COVID-19 [9].

Knowledge is a prerequisite for promoting positive behaviors, and individuals' cognition and positive behavior towards disease affect the effectiveness of their behaviors to a certain extent [10].

Thus, the knowledge gap assessed needs to be addressed through educational material in a simpler way which general public is able to access and comprehend.

We adopted a unique approach of separately analyzing the knowledge scores in epidemiological, clinical and preventive practice domains which are usually combined in other studies. Separate approach enables to identify the lack of knowledge areas. Younger participants and females were more knowledgeable about Preventive practice aspects and epidemiological aspect as they might have paid attention to epidemiological aspects and related to preventive measures. Among the clinical domain almost all were aware of the symptoms of the disease as this information is provided through videos, posters etc. and have been informed to report to any health care facility if any of those symptoms are there. Most participants in both the US and the UK recognized fever, cough, and shortness of breath as three common symptoms and signs of a Covid-19 infection [2]. Similarly 64.2% (95% CI: 62.4% – 65.9%) of US participants and 79.0% (95% CI: 77.5% – 80.5%) of UK participants responded with the recommended care-seeking option of staying home and contacting their health system [11].

Most of the participants were unaware of complications of COVID 19 as this information is not available in social media and there were several myths regarding this. Majority were not aware of treatment of the disease too as there is no vaccine and treatment of the disease. Clinical trials are still on its way. General public could not comprehend that symptomatic treatment is being provided. Most of the participants were aware of the protective measures like self-isolation, seeking medical help if required, washing hands etc. similarly 92.6% (95% CI: 91.6% – 93.4%) of US and 86.0% (95% CI: 84.7% – 87.2%) of UK participants selected each of the following three responses as being effective in preventing infection with SARS-CoV-2: washing your hands, avoiding close contact with people who are sick, and avoiding touching your eyes, nose, and mouth with unwashed hands. Only 40% participants were sure of the sequence of activities to be performed when they reached home from outside.

The limitation of this study is that we selected only educated group of public as the survey was feasible through google form only. Participants might have looked up for answers online and then must have answered which might have helped to score better but this also have increased their knowledge for future. The tool was only made in English which could have prevented maximum people from participating in the study as our country has maximum number of Hindi speak and reading people. Strength of the study is we could reach almost all corners of the country. We had equal representation from cosmopolitan cities, small cities and towns etc.

## Conclusion

Promotion of public knowledge regarding COVID 19 is important due to virulence, high fatality rate and risk of rapid transmission of the virus in the community. Participants need more information in simple language which is easily accessible to them. Participants have quite good knowledge still the number of cases is increasing day by day. There might be gaps in the practices for preventive aspects which can be assessed in future. Preventive practices need to be taught and practiced effectively to control transmission of the disease.

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