

## Awareness about COVID-19 among Residents of an Urbanized Village of Delhi

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### Abstract

**Background:** There is an ongoing pandemic of COVID-19 associated with novel corona virus, the preventive measures are effective but can only be followed by community if they are well aware about it. **Objective:** The study was done with the aim to assess the awareness about COVID-19 and preventive measures being used by people in an urbanized village of Delhi. **Methods:** We used a pre-tested semi-open-ended questionnaire comprising questions of awareness and attitude toward spread and prevention of COVID-19 disease and preventive practices. **Results:** Majority of the participants belonged to low socio-economic class, were less educated, and lived with their family in single room dwellings. The main source of getting information about COVID-19 was Television (77.9%) followed by social media. No protective face cover was used by 14.2% participants, only 41.9% used mask as face cover measure and each one of these was reusing the mask. Knowledge about telephone helpline number (50.9%) and about government's mobile app for COVID-19 (39.8%) was low. Only 35.7% participants correctly knew the recommended minimum time for hand washing and only 54.9% knew the recommended social distance between two individuals. Education status of participants and their socio-economic status were found to be significantly associated with various facets of knowledge about COVID-19. **Conclusion:** Greater focus from the policy makers and health agencies is required for increasing the awareness among the community, especially the clusters of urban settlements with dense population.

**Keywords:** COVID-19; Urban Settlement; Awareness; Less Educated; Protective Measures.

### Introduction

In December 2019, a cluster of pneumonia cases, caused by a newly identified  $\beta$ -coronavirus, occurred in Wuhan, China.<sup>1</sup> As of March 2020, a total of 79,968 cases of COVID-19 have been confirmed in mainland China including 2873 deaths.<sup>2</sup> Studies estimated the basic reproduction number (R0) of SARS-CoV-2 to be around 2.2,<sup>3</sup> or even more (range from 1.4 to 6.5),<sup>4</sup> and familial clusters of pneumonia<sup>5</sup> outbreaks add to evidence of the epidemic COVID-19 steadily growing by human-to-human transmission.

Studies show that elderly and people with chronic disease conditions (hypertension, diabetes, cardiovascular disease and chronic respiratory disease) and health professionals are at greater risk of COVID-19.<sup>6,7</sup>

### Subjects and Methods

The union Health ministry of India has identified urban settlements within cities that may have mushroomed due to migration, and having inadequate housing and poor living conditions, as key challenge for COVID-19. This is owing to their key vulnerabilities including poor structural quality of housing, inadequate access to safe water, poor sanitation and insecure residential status. Guidelines for preparedness and response to COVID-19 in these urban settlements have been released by the ministry.<sup>8</sup> We thus purposefully identified one such urban settlement – an urbanized village. The study was conducted during April-May 2020. The inclusion criteria were people aged 18 years or above. Exclusion criteria set out for the study were people not able to

comprehend and answer the interviewer on their own, confirmed case of COVID-19, critically ill patient and pregnant females. A pre-tested, interviewer administered semi-open-ended questionnaire was used as the study tool. The Kuppuswamy's socioeconomic status scale was used.<sup>9</sup> We dichotomized into two categories-higher (top 3 categories) and lower SES (lower 2 categories).

## Results

Our study included a total of 112 adults. Among the participants, 34(30.4%) were illiterate having received no formal education at all, only 17(15.0%) had finished their schooling and only 6(5.3%) were college graduates. Majority 87(77%) participants were having only one room for whole family and overcrowding was present in 69(61.6%) families. Most of the families (79; 69.9%) were nuclear families. Their main sources of information about COVID-19. Television (88; 77.9%) was the most common source, and 56(49.6%) participants were getting information from various 'Social media', while Radio was a source of information for 11(9.7%).

**Table 1:** Symptoms of COVID-19 as mentioned by the participants (n=112).

Symptoms	Number of participants who answered (n=112)
Cough	80 (70.8)
Fever	66 (58.4)
Running Nose	55 (48.7)
Aches, Pain	38 (33.6)
Difficulty in Breathing	27 (23.9)
Others symptoms	9 (8.0)
Nausea	3 (2.7)
Tiredness	2 (1.8)
Diarrhea	2 (1.8)

### COVID-19 Knowledge

The majority 89(79.4%) of the participants gave a wrong response about incubation period of COVID-19. Most participants (80; 70.8%) mentioned cough as a symptom (Table 1), fever was answered by 58.4% participants, running nose by 48.7%, Aches or pain by 33.6%, and difficulty of breathing by 23.9%. Only two (1.8%) mentioned diarrhea (multiple responses were allowed). The participants were asked about their intended action in the hypothetical case that if they develop symptoms of COVID -19, multiple responses were allowed. Maximum participants (54.0%) replied that they would call the Helpline Number, 51(45.1%) participants would consult a doctor directly, 11(9.7%) would isolate and 2(1.8%) said they would take medication directly from a chemist shop.

Only 57(50.9%) were aware about Helpline number, 45(39.8%) were aware about the specific mobile App, Only 19(17%) participants correctly identified the name of the mobile app ('Aarogya Setu'), while 11(9.8%) participants had been using this App.

### Face covering

For covering the face, 47(41.9%) were using a face mask, 38 (33.6%) were using some cloth, 11 (9.8%) used handkerchief and 16(14.2%) were not using any safety measure to cover face. Among those participants who were using some face mask, 35 (74.4% of 47) were using locally made cloth mask, surgical mask was used by 7 (14.8%), and N-95 mask used by only 5 (10.6%).

Participants were asked about appropriate time when one should use face cover, with multiple responses being allowed. Majority 61(54.4%) replied mask only to be worn while in crowded place, 27(23.9%) replied that throughout the day-time, 9(8.0%) responded that only during communicating with a suspect/confirmed case, another two (1.78%) persons replied 'all the time' while 18(16%) expressed 'do not know'. Among those who were using some face cover, the frequency of change of face cover was asked. Maximum 48(50%) participants reported not changing their mask at all, 41 (42.7%) persons reported changing it once a day or more, one participant (0.9%) changed within 6-12 hours, while 6 (6.25%) used to change face cover less every 6 hours or less.

Participants were asked about their opinion about mask handling. First question asked was whether it is fine to touch mask again and again when it is over face. Ninety one (81.3%) answered no, 6 (5.3%) answered yes while 15(13.3%) answered do not know about touching. Opinion about reuse of mask, 17(15.2%) answered no, 47(42%) answered yes while 48(42.9%) replied do not know. Regarding opinion about whether a mask can be re-used after washing, 7(6.2%) participants replied no, 57(50.9%) answered yes while 48(42.9%) replied do not know.

Among the participants who were using some face cover (n=47), one or more difficulties in wearing face cover were reported by 20(42.6%) participants. 'Suffocation' was reported by 9 participants, 'slips over face again and again' by three, 'difficulty in communication' by two participants. Other uncommon difficulties (mentioned by only one respondent each) included 'difficulty in spitting', 'difficulty in smoking', and 'itching over face' etc.

### Hand hygiene

Most of the participants (103; 92%) replied that hand washing is mandatory while 7 (6.3%) believed it is not mandatory, and two (1.8%) replied 'do not know'. Best method for hand cleaning was mentioned by 57 (51.4%) as hand wash with soap & water, while 15 (13.5%) answered that alcohol based sanitizer is best, 28 (25.2%) responded that any sanitizer (alcohol based or not) is best while 11 (9.9%) replied 'do not know'. As compared to the pre COVID-19 time, the frequency of hand washing had increased for 100(89.3%) respondents while 12 (10.7%) did not change their frequency of hand washing during the pandemic. The recommended time of hand washing was correctly known to 40(35.7%) participants only.

### Social distancing

The recommended social distance was correctly answered by 62(54.9%) participants only. Recommended social distance was maintained by only 58(51.3%). The respondents were asked a question whether social isolation will be possible for them in the hypothetical case of themselves or a family member becoming COVID-19 positive, Only 42 (37.2%) participants could separate themselves from other family members if in future it is required, primarily owing to lack of available space. Out of these 42 participants, 13 participants had overcrowding at home but they stated they could separate family member by taking another room on rent, by shifting to balcony, shifting to kitchen or send family member to another place etc.

Univariate statistical analysis was done to study the associates of knowledge about COVID-19 among the residents of the urbanized village. Education level of the participants had a strong association with knowledge about various facets of the disease. Significantly higher proportion of literate participants (28.1%) correctly knew incubation period of COVID-19, compared to only 12.7% among illiterate participants ( $p < 0.05$ ). The recommended time duration of hand washing was correctly answered by 52.6% literate participants while only 18.2% illiterate participants correctly knew right recommended hand washing duration ( $p < 0.001$ ). The literate participants were significantly more aware (54.4%) about mobile app for COVID-19 ('AarogyaSetu') released by the Indian government than the illiterate participants (27.3%),  $p = 0.004$ .

Socioeconomic status (SES) of participants also had significant association with awareness about app, with higher SES participants more likely to be aware about the app, compared to participants with lower SES (63.6% versus 34.9%),  $p = 0.015$ . Participants with higher SES also had higher awareness about the incubation period of the disease (31.8% versus 19.3%) and about the recommended hand washing duration (45.5% versus 34.9%), though the differences did not reach statistical significance.

### Discussion

Most of the participants belonged to low socioeconomic status, nearly one third 34(30.1%) were illiterate, most 87(77%) families were living in only one living room, overcrowding was present in 69(61.9%) of the families. The participants with at least one family member having chronic disease conditions were 22(19.6%) and also 13(11.5%) participants had a geriatric family member aged 60 year or above. Such participants need to be more aware about the disease if they have any family member suffering from chronic diseases or an elderly in the family, because the disease is more dangerous for the elderly, and those with chronic diseases. This has been proven from multiple studies published earlier about the disease.<sup>10-12</sup> The main source of getting information about COVID-19 was television for 88 (77.9%) of the participants, social media for 56 (49.6%) of

the participants while other participants were using radio and newspapers.

Awareness about various facets of the COVID-19 diseases was found to be lacking in many of the participants. The correct response about incubation period of the disease was given by only 20.5% participants. The incubation period has been reported to be 5.2 days (95% CI 4-7),<sup>13</sup> however the Centers for Disease Control and Prevention (CDC) suggests it can range from 2 to 14 days.<sup>14</sup> The most common symptoms of COVID-19 are fever, fatigue, and dry cough, with one-third of patients experiencing dyspnea.<sup>6,15</sup> In a study conducted in two Pakistani university populations, fever, cough, and shortness of breath are symptoms of COVID-19 were correctly answered by 93% of participants while Myalgia (muscle ache), sore throat, and diarrhea are also possible symptoms of COVID-19 were correctly answered by 54.35% participants.<sup>16</sup> In our study 70.8% participants answered cough as a symptom, fever mentioned by 58.4%, running nose by 48.7%, aches and pain by 33.6%, difficulty in breathing by (23.9% participants, other responses were also given. Most of the participants were aware of 2 or 3 most common symptoms of COVID-19. In the Pakistan study, socioeconomic status had been found to have a significant direct association with knowledge about COVID-19. The awareness in our study was comparatively less possibly because the study population belonged to lower SES status as compare to Pakistan university population.

The participants who were not using any safety measure for face cover were 14.2%, cloth was used by 33.6%, handkerchief by 9.8% while mask was used by only 41.9% of the participants. Recently, the CDC recommended putting cloth face coverings for the public, especially in areas where there is significant community-based transmission.<sup>17</sup> There is no consensus about the rationale of use of face masks in public places to prevent the spread of COVID-19.<sup>18</sup> The guidelines released by the state Government of the National Capital Territory of Delhi stipulate that wearing of mask by any person moving in public place is essential.<sup>19</sup>

Among the participants, 50.9% were aware of Government helpline telephone number, 39.8% were aware of mobile app ('Aarogya Setu') and 9.8% participants were using it. Only 64.3% participants knew the recommended time of hand washing while only 54.9% participants knew the recommended social distance between two persons. We found in our study that only 37.4% participants felt that they could isolate themselves from other family members in the hypothetical scenario of testing COVID-19 positive, rest of the participants 70(62.5%) were unable to do that. The main reason explained by participants for isolation not possible was lack of room. The revised guidelines given by the union Ministry of Health and Family Welfare, India for home isolation of very mild/pre-symptomatic COVID-19 cases is that he/she should undergo home isolation.<sup>20</sup> These instructions could not be followed by the majority of participants in present

study because of overcrowding. After intense advertisement on Television, Newspaper, social media etc. only 40 (35%) participants knew the recommended time of hand washing correctly.

In univariate analysis, education status of the participants and their socio-economic status (as assessed by the Kuppaswamy scale) were found to be significantly associated with various facets of knowledge about COVID-19. Similar findings were present in the study conducted by Salman et al in Pakistan<sup>16</sup> and Abdelhafiz et al in their study on knowledge, perceptions, and attitude of Egyptians towards COVID-19, too similarly found that knowledge scores were significantly related to the level of education as well as to the monthly income ( $p < 0.001$ ).<sup>12</sup>

## Conclusion

During the ongoing pandemic of COVID-19, there is still lack of awareness at the community level, and social distancing is not easy task. Still there are so many people in the overcrowded and tightly packed urban settlements who are aware of precautionary measures but they are not following it. Greater focus from the policy makers and health agencies is required for increasing the awareness among the community, especially the clusters of urban settlements with dense population, and for bridging the awareness-practice gap.

### Strengths and Limitations of the Study

All questions being directly asked to the participants in their language. We provided separate room for participants with use of all protective measures during the data collection which were required.

The present study also has some limitations. The study area has residents most of whom are migratory population of lower socioeconomic status, so our results may not be representative or generalizable to all areas.

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**Conflict of Interest:** The authors declare that they have no conflict of interest.

**Informed consent:** Informed consent was obtained from all individual participants included in the study.

**Ethical approval:** All procedures performed in the study were in accordance with the ethical standards of the institutional ethics committee (Institutional Ethics Committee - Human Research of University College of Medical Sciences, Delhi, ref no. IEC-HR/2020/44/1R) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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