Original Research Article

Assessment of knowledge, attitude and practice towards COVID-19 infection among residents of an urban slum in a metropolitan city

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ABSTRACT

Background: COVID-19 is an infectious disease caused by a newly discovered coronavirus named SARS COV 2. By 26th August 2021, India added a record 37,593 cases of coronavirus infection, pushing the country's COVID-19 tally to 32.5 million, while the death toll climbed to 4.35 million. This was declared as the second wave. The ICMR has calculated that compared to rural areas, the risk of spread was 1.09 times higher in urban areas and 1.89 times higher in urban slums. With all its elms, the urban slum can be a testing ground for appropriate awareness about the cause, prevention of COVID-19.

Methods: The study was conducted in the field practice area of the Urban Health Centre of T. N. Medical College and B. Y. L. Nair Hospital situated in Mumbai. Approval for the conduction of the study was obtained from the Institutional Ethics Committee. The study was conducted over 1 month; i.e. from March 2021 to April 2021. The subjects were interviewed using a pre-designed interview schedule, information regarding education, occupation, marital status, and various information about knowledge, attitude and practice to prevent and protect against COVID-19 were obtained.

Results: Majority of the study subjects were aged less than 50 years, with mean age of 44.92±16.16 years. With female predominance (56.0%), majority of subjects were literate (72.5%) with 55% of subjects educated till class 10 and 53.5% were employed. Seventy-seven percent subjects had elderly family members residing with them. Non-communicable diseases was observed in 75.5% subjects.

Conclusions: The study highlighted the importance of effective and tailored health education programs aimed at improving COVID-19 knowledge, thereby leading to more favourable attitudes and implementation and maintenance of safe practices.

Keywords: COVID-19, India, Pandemic, Slums

INTRODUCTION

COVID-19 is an infectious disease caused by a newly discovered coronavirus named SARS-COV-2. To date, evidence suggests that the COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.

By 26th August 2021, India added a record 37,593 cases of coronavirus infection, pushing the country's COVID-19 tally to 32.5 million, while the death toll climbed to 4.35 million.[1] Maharashtra, Kerala and Karnataka are the states which are reporting the highest number of cases. Maharashtra had a total number of 64,32,649 and 1,36,355 deaths on 26th August with Mumbai case count

being 7,35,505 along with 15,968 fatalities. The city and state are the topmost affected areas in the country.[2]

The ICMR has calculated that compared to rural areas, the risk of spread was 1.09 times higher in urban areas and 1.89 times higher in urban slums.[3] About 45 per cent of active cases were reported from three cities: Chennai, Delhi and Mumbai which contributed around 10, 17 and 18 per cent respectively to the active case burden of the country.[4] Residents of urban slums are at significant risk of contracting the SARS-CoV-2 virus that causes the COVID-19 disease. Fundamental environmental conditions that foment the contraction and transmission of COVID-19 include dearth of good quality, unshared drinking water and sanitation facilities, inadequate attention to personal hygiene, poor living conditions, food and income insecurity and lack of access to quality healthcare. To add fuel to the fire, overcrowding in slums makes social-distancing and self-quarantine unrealistic.

A well-informed citizen is the best asset in corona prevention. And with all its elms, the urban slum can be testing ground for appropriate awareness about the cause, prevention, and management of COVID-19. The present study was planned to assess this very fact- i.e. knowledge, attitude and practice towards the cause, spread, prevention and treatment of COVID-19 infection among residents of an urban slum in a metropolitan city, to fill up the lacunae if any, in the fight against COVID-19.

Objectives

The objectives of the study were to assess the sociodemographic profile of residents of an urban slum enrolled for the study, to study the level of knowledge, attitude and practice towards the cause, spread, prevention and treatment of COVID-19 infection among the enrolled residents, to recommend appropriate health promotional measures based on the study findings.

METHODS

The study was conducted in the field practice area of the urban health centre of T. N. Medical College and B. Y. L. Nair Hospital situated in Mumbai. Approval for the conduction of the study was obtained from the Institutional Ethics Committee. The study area consists of 92596 populations (2011 census) distributed among 11 sectors from A-K. Two hundred subjects fitting into inclusion/exclusion criteria residing in the study area were enrolled for the present study by systematic sampling with random start with sampling interval of 70 houses (13975 households ÷ 200). The study was conducted over 1 month that is from March 2021 to April 2021. Verification of member/s in the house were done to see the fulfilment of inclusion criteria. If fulfilling the criteria, then the youngest eligible subject, irrespective of gender and marital status, in the house was included after taking written informed consent. The subjects were interviewed using a pre-designed interview schedule,

information regarding education, occupation, marital status, and various information about knowledge, attitude and practice to prevent and protect against COVID-19 were obtained. The above process was continued till the desired sample size was reached. Statistical analysis of the data was done using PSPP open-source software. Analysis of the data was done using an appropriate statistical test.

RESULTS

The study subjects were from the age group of 15 to 60 years. Maximum (22.0%) aged 45 to 54 years, while 46.0% aged less than 45 years, with a mean age of 44.92±16.16 years. Majority (56.0%) of the study participants were females, 68% subjects were Muslims, 75.5% were married and 27.5% subjects were illiterate. The educational qualification of the subjects is detailed in Table 1.

Table 1: Educational qualification of study subjects.

Educational status	No.	Percentage
Illiterate	55	27.5
Primary (1 to 4th std.)	14	7.0
Secondary (5th to 10th std.)	96	48.0
Higher secondary (11th, 12th)	24	12.0
Graduation/diploma	11	5.5
Total	200	100.0

Table 2: Distribution of knowledge of study participants regarding the causative organism.

Causative agent	No.	Percentage
Some virus	69	34.5
Corona virus	19	9.5
Air	2	1.0
Mosquito	2	1.0
Some microorganisms	2	1.0
Bacteria	1	0.5
Chinese chemicals	1	0.5
From Chinese gas	1	0.5
Human being	1	0.5
Poisonous germs from China	1	0.5
Uncleanliness	1	0.5
Don't know	100	50.0
Total	200	100.0

Overcrowding by per capita space requirement was present in 56.0% of the households. A high proportion of subjects (77.0%) had elderly family member residing with them and 75.5% subjects had some type of NCD, most common being diabetes. Almost all (99.0%) subjects were aware of COVID-19 infection although their knowledge about the mode of spread and causative organism was poor as detailed in Table 2. While 54.0% of the subjects felt that masks help in preventing the spread of infection, 41% felt masks stop infection and 4.5% were

not aware of its significance. The study subjects were using mask mainly while moving outside home though only a few were using it consistently while 10.5% were using it only inside hospitals and 6% were using while they were in their workplace. The main reasons for not using masks were discomfort and breathlessness while using them. 39.5% of subjects opined that social distancing prevents infection, 54% felt that it stops the spread of infection while 2% felt that it is not needed and 4.5% didn't know about it. Subjects who had an elderly (65+) member at their home and took special precaution for them are detailed in Table 3.

Table 3: Special precautions taken by the elderly.

Special precaution for elderly	No.	Percentage
Restriction of movement out of home	60	39.0
Using mask at home	5	3.2
visitors not allowed inside home	13	8.4
No special precautions taken	76	49.4
Total	154	100.0

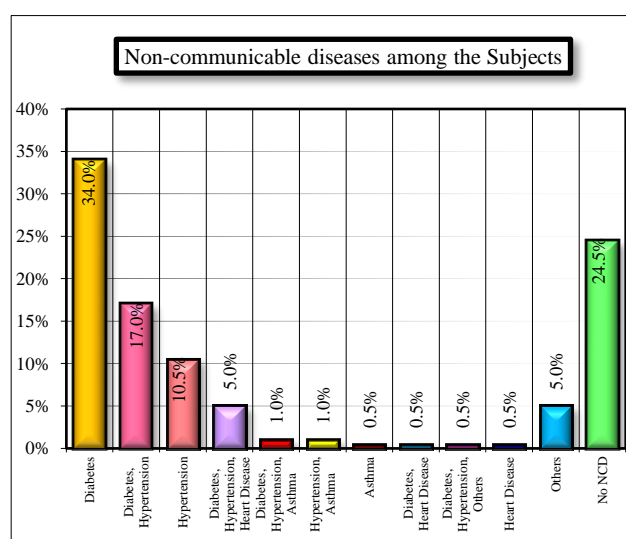(Note: Elderly person present in household of 154 Subjects)

Figure 1: Distribution of non-communicable disease among study subjects.

Table 4: Reason for not going to duty.

Reason for not going to duty	No.	Percentage
Lost Job/business	21	32.3
Scared of exposure	18	27.7
Work from home	15	23.1
Transport issue	11	16.9
Total	65	100.0

The distribution of non-communicable disease among study participants is enumerated in Figure 1 and 85% were under treatment for the same. Among the 200 subjects studied, 115 subjects had to travel for a job. However, 43% subjects were unable to go to their job due

to reasons cited in Table 4. Only 15.5% of subjects were using sanitizers while travelling and among them, only 4% were found to be of satisfactory quality i.e., containing at least 70% alcohol. A significant (77.5%) no. of study subjects felt that COVID-19 can cause death. Unfortunately, 78.5% subjects had misconception that COVID-19 can be cured with treatment, most by hospital admission. In addition, 45 subjects (22.5%) also quoted mosquitos as source of COVID transmission.

DISCUSSION

In present study majority of the participants were married females. A similar finding was reported by Hanawi et al in their study that the majority i.e. 56% were females and 63.4% were married.[5] The mean age of study participants in our stud was 44 years which was similar to that reported by Cristy et al and Lee et al in their study.[6,7] Although the literacy rate among the participants was good, the majority were educated only till the 10th class. On the contrary Firdous et al reported 61% of study participants having a bachelor's degree and Lee et al reported 51.9% of participants having a high school degree in their studies on COVID-19.[7] The difference may be due to the current study being conducted in a slum area where education comes much down the priority list. Present study population was predominantly Muslim, and half of the households had overcrowding. Unger et al in their study on urban slums report that in Indian slums on an average 13.4 people live in 45 sq. meter of the area causing overcrowding a major problem.[8] According to a report published in Hindu, about 57% of the slum population in Mumbai has COVID-19 antibodies which may be due to overcrowding in urban slums.[9] It was noted that the majority of study subjects were not aware of the causative agent of COVID-19 which was in congruence with the study published by Habib et al in which 60% of study participants perceived the pandemic to be due to God's punishment.[10] Also, Roy et al in their study reported only 43% of study participants reported COVID-19 to be contagious and 23% agreed to be spreading from human to human.[11] No significant difference in knowledge among various age groups or educational levels was observed in the study. Thus a significant knowledge gap exists about the causative agent of COVID-19. Aerosol as a mode of spread of COVID-19 was reported by the study participants which is similar to the finding of Ferdous et al and Lee et al.[7,12] Although the study participants agreed to mask being protective to COVID-19 infection only a few were using it consistently while moving out of the home. Haischer et al reported 41.5% of people wearing a face mask while Lee et al reported very high knowledge and practice score about face mask in their study conducted in Hongkong.[13,14] This may be due to the humid climate in Mumbai which makes the prolonged wearing of a mask uncomfortable, even when it protects against the disease. That social distancing prevents COVID-19 infection was agreed by most of the subjects which are in congruence with the finding of William et al and lee et al.[7,15] Most of the

participants had an elderly member at home although half of them were not following any special precautions to prevent them from getting infected. This may be due to lower knowledge among the elderly population due to less access to a smartphone as reported by Cristy et al.[6] The study subjects were not able to get medical consultation for communicable diseases due to prevailing lockdown and fear among medical practitioners. Similar findings were reported by Ramirez et al who reported that minority and disadvantaged communities already have a technological barrier to access health care over and above during pandemic times not visiting a doctor personally is often not culturally accepted.[16] Significant proportions of study participants were not able to go to a job due to prevailing lockdown, transport issue and fear of exposure. Similar results were reported by Ganson et al who reported 59% job loss and Drake et al reported significant unemployment due to pandemic.[17,18] Also, Aneja et al in their analysis of the socioeconomic impact of COVID-19 reported service sector is the key driver of economic growth and the largest contributor of GDP has been hit hard due to various restrictions in India.[19] Only a small proportion of participants were using sanitizers in present study and very few sanitizers were containing 75-80% alcohol content as per standard guidelines published by WHO.[20] This may be due economic reasons or lack of awareness regarding the quality of sanitizers.

CONCLUSION

The current study was conducted in an urban slum area and the study participant had good knowledge about COVID-19 infection although certain knowledge gaps regarding the causative agent of SARS-COV-2 were identified. BCC activities can be undertaken by the urban health centre in collaboration with local NGOs to increase awareness about the disease. Such activities can also be conducted at RTPCR or rapid antigen testing camps. It was observed that very few people were taking special care for the high-risk elderly population and many of them were unable to get adequate medical advice for non-communicable diseases. The need for special care for the elderly population can be emphasized by the doctors at the urban health centre while consultation. Available option of telemedicine available locally can be sought and widely publicised in the community by the community development officers in association with the key stakeholders of the community. Health camps for detection and treatment of NCDs like diabetes, hypertension etc. can be conducted in collaboration with NGOs after taking proper protection against COVID-19. It was observed that several Subjects had lost their jobs during COVID pandemic. Such people can be linked to the national skill development mission under the Ministry of Skill Development and Entrepreneurship for various soft skill learning, up-gradation through online mode which would help in the betterment of their financial status. The practice of using substandard sanitizers should be strictly acted against and donation of good quality sanitizers can be conducted in association with NGOs and donors.

Recommendations

The study highlights the importance of effective and tailored health education programs aimed at improving COVID-19 knowledge, thereby leading to more favourable attitudes and implementation and maintenance of safe practices.

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