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Original Research Article

Awareness regarding COVID-19 preventive measures and reasons for non-adherence among people in an urban area of mid-Kerala

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ABSTRACT

Background: COVID-19 pandemic is a major challenge to the entire world. Since it is droplet borne preventive measures can reduce the transmission effectively. So, assessing awareness regarding COVID-19 preventive measures and reason for non-adherence to them will be really helpful.
Methods: Data has been collected from 502 patients attending an urban centre of mid-Kerala after obtaining informed written consent.
Results: Mean age of study population was 52.96±SD 14.52 years ranging from 18 to 89. Males were 52%. Majority of the participants 467(93%) were aware about COVID-19 preventive measures. The main source of information was television and newspaper. Awareness was less among those with low educational status (90.9%) and among house wives (90.2%). Main reasons for non-adherence were constraints of space for social distancing, 18 (3.6%) forgetting to adhere 28 (5.6%) for avoiding unnecessary touching and not feeling the importance of adherence 10 (2%).
Conclusions: Majority of study participants were aware about COVID-19 preventive measures even if a small proportion were not practicing it and were not aware about it. Therefore, along with the measures to tackle the reasons for non-adherence, programmes on health education regarding COVID-19 preventive measures should be planned and implemented focusing on these vulnerable groups for successful prevention of the disease.

Keywords: COVID-19, Prevention, Awareness, Urban, Kerala

INTRODUCTION

Stay at home, stay safe, maintain physical distance and boost-up your immune system, this is the utmost task for implementing every country in the world. Before 2019 December, the earth was freely running on their own way, especially all humans were roaming free. However, in late December 2019, a small virus namely Corona virus (COVID-19) has been identified at Wuhan city of China, causing the COVID-19 infection which was later declared as a pandemic by the World Health Organization (WHO).[1] The small virus has bought out of the best and the worst of humanity, particularly, this threat pushing lot of families into scarcity and swelling existing disparities. All countries including, high-income countries, middle-income countries and low-middle income countries have affected by this threat and the situation has been harassed. Almost all countries have announced the lockdown and taken very strict restrictions such as stay at home, wear face mask, clean your hand with sanitizer frequently, maintain physical distance, avoiding contact with other people, work from home, closed local and international transportation, schools, colleges, industries and quarantine for containment zone having high number of

positive cases to reduce the COVID-19 outbreak. Moreover, these protective measures have affected all types of economic activities and organisations globally. This pandemic situation has created a lot of misery for workers around the world. This has caused them serious problems, especially economically. Many workers have lost their jobs and travel restrictions have made it difficult to return home. Also, money laundering offices were closed so they were not able to send money to their families. Further, countries around the world were taking individual responses for this pandemic situation and these uncoordinated governmental responses have led to a disruption in the global supply chain and capital market sector has also been affected. In India the GDP dropping to 4.2% for the financial year 2020, which was previously estimated at 4.8%, due to lockdown, it has reduced the economic activity on environment and the global supply chain. [2] Overall, not only a government sector, all human being are finding the alternate for every routine work and fighting with deadly virus to save them lives. India has taken serious concern about COVID-19 over the last six months and has been implementing various precautionary and protective measures to reduce the burden of COVID-19. However, it couldn't escape COVID-19, and it was one among the most affected countries during second wave. In India it has been reported less than 15,000 newly infected COVID-19 cases per day between late-January and February 2021. Unfortunately, there occurred a huge surge, and on 7 April 2021, the number of daily infections stretched to126,260 with the seven-day daily average crossing 100,000.[3] Apart from the COVID-19 crisis, people were also severely affected by changes economy, employment, education and life style due to the precautionary and protective measures taken by the government. On January 31 2020 the first case in India was diagnosed in Thrissur district, Kerala.[4] It has led Kerala to the phase of limited community transmission and the preventive measures are going well. Since the disease is droplet borne preventive measures has got a main role in reducing the transmission. That is why the WHO and government of India has put forward several preventive measures for the public like social distancing, restricting public gathering, usage of mask in public places, practice of hand hygiene, cough etiquette etc. In this background assessing how far the knowledge regarding COVID-19 preventive measures has reached to public and finding out the reason for non-adherence to these measures will be helpful in giving an insight into the disease spread into the community and tackling these reasons may increase the effectiveness of COVID-19 preventive measures among common public.

METHODS

This descriptive study was conducted from May 2020 to September 2020 in urban family health centre Paravattani, which is the field practice area of Community medicine department of Government medical college, Thrissur, situated 2.7 km from Thrissur town, Kerala, the same district where the first case of COVID-19 was reported in India. As community-based survey couldn't be done due to Pandemic it was done among patients attending out patient department of UFHC Paravattani. Participants with age more than 18 years who gave consent were included in the study. Those who participated in the study once and came for review in the data collection period were excluded. Using prevalence of 16.9% from a previous study[5] sample size was calculated and 502 participants were studied. A semi structured questionnaire consisting of questions related to socio-demographic characteristics and COVID-19 preventive measures – awareness, practice and reasons for non adherence to practice was prepared and data have been obtained by interviewing the patients after taking informed written consent. The data collection form comprised of four main parts: socio-demographic information, including gender, age, state of residence, employment status, and household income; COVID-19 knowledge; attitudes about COVID-19; and practices relevant to COVID-19 and awareness. The survey was offered in the local (Malayalam) and English languages. Data have been coded and entered into MS Excel. And then was analyzed using the statistical package for the social sciences (SPSS), version 23. Descriptive analysis focused on frequencies and percentages while chi-square tests & independent samples t-tests were used to find out association. The qualitative data have been expressed in proportions and the quantitative data have been expressed in means, median and standard deviation. The significance level was set at p value less than 0.05. Data have been obtained after getting IEC approval and informed written consent from all participants. Information obtained was dealt with strict confidentiality.

RESULTS

Total 502 participants were studied with their age ranging from 18 to 89 with a mean of 52.96 and SD 14.52 years (Table 1). Gender ratio was almost the same with slightly higher number of females 260 (48%). Regarding education status highest number was for those with high school education 212 (42.2) and house wives were the group with highest number (204-40.6%) among different categories of occupation. All 502 participants had heard about the disease COVID-19. The major source of general information related to COVID-19 was television (TV) followed by combination of newspaper and TV (Table 2). Other sources included Newspaper, radio, social media, health care workers, friends and different combinations of all these sources. About 467 out of 505 (93%) study participants were aware about COVID-19 preventive measures (Table 3). 470 (93.6%) were aware about mode of transmission of COVID-19; majority (93%) responded droplet as a mode of transmission and only 9 participants knew that the disease can spread via both droplet and by direct contact. 491 (97.8%) participants were aware about social distancing as a preventive measure.

Table 1: Sociodemographic characteristics of the study population (n=502).

Parameters	Study population N (%)
Gender	
Male	242 (52)
Female	260 (48)
Educational status	
None	11 (2.2)
Lower Primary	60 (12)
Upper Primary	72 (14.3)
High School	212 (42.2)
Higher Secondary	64 (12.7)
Degree	52 (10.4)
Post Graduate	11 (2.2)
Professional	20 (4)
Occupational status	
Unemployed	30 (6)
House wife	204 (40.6)
Student	17 (3.4)
Unskilled	55 (11)
Semi-skilled	33 (6.6)
Skilled	138 (27.5)
Professional	25 (5)

Table 2: Source of general information about COVID-19 (n=502).

Source	N (%)
TV	181 (36.1)
Newspaper & TV	159 (31.7)
Other combination	115 (22.9)
News paper	26 (5.2)
Social media	10 (2)
Radio	5 (1)
Health care workers	4 (0.8)
Friends	2 (0.4)

*Other combination include different combinations of TV, Newspaper, radio, social media, health care workers, friends other than TV+ Newspaper

Majority (89.6%) knew that at least one meter distance should be kept from others in public places and majority (86.1%) of the participants follow this method always. Awareness on avoiding unnecessary touching of face, eyes and lips with hand was 96.2% (483), majority 443 (88.2%) follow this method always. Majority 497 (99%) of the participants were aware about covering of mouth and nose while coughing and sneezing in public places. 498 (99.2%) participants know that usage of mask in public places is a preventive measure and 497 (99%) follow this method always. The method of avoiding public gathering to prevent the spread were known to 494 (98.4%) of the participants. 480 (95.6%) participants responded that they are aware of home quarantine as preventive measure and 383 (76.35) of the total participants were able to correctly say the situations of home quarantine. Regarding the duration of home quarantine 468 (93.2%) of the participants responded that they are aware but only 39.2 (78.1%) know the correct duration. For clearing doubts regarding COVID-19 main single source of information was health centers for 123 (24.5%) participants and 137 (27.3%) use different combinations of Government Call Centre, District Medical Office, health centre, Health care worker and medical college help line number (Table 4).

For easy analysis participants were grouped into two based on awareness of COVID-19, aware (know & know a little categories together) and not aware (doesn't know). Aware participants were 242 (99.2%). On comparing awareness level in both gender results were almost the same (Table 5). About 100% males and 99.2 % females, 4 participants were not aware about preventive measures and all were all females. Participants were classified into those fully aware about preventive measures and not fully aware (doesn't know or knows a little). On comparing awareness based on education, with increase in education percentage awareness of participants on COVID-19 preventive measures was also increasing. Among the "doesn't know" category highest were among those with education up to 10th- 29 (8.4%). On comparing awareness based on occupation lowest percentage of aware participants were among house wives-90.2%.

Table 3: Awareness and knowledge on preventive measures.

Characteristics	Frequency (%)
Awareness on COVID-19 preventive measures(n=502)	
Know	467 (93)
Know a little	31 (6.2)
Don't know	4 (0.8)
Modes of transmission	
Awareness	
Aware	470 (93.6)
Not aware	32 (6.4)
Knowledge	
Via droplet	366 (72.9)
By contact	95 (18.9)
By both	9 (1.8)
Not aware	32 (6.4)

Continued.

Characteristics	Frequency (%)
Social distancing as preventive measure	
Awareness	
Aware	491 (97.8)
Not aware	11 (2.2)
Knowledge on distance	
Minimum 1 meter	450 (89.6)
Less than 1 meter	6 (1.2)
Don't know the distance precisely	35 (7)
Not aware of social distancing	11 (2.2)
Practice of social distancing with minimum 1 meter	
Always	432 (86.1)
Sometimes	13 (2.6)
Never	5 (1)
Not aware of social distancing with minimum 1 meter	52 (10.4)
Avoiding unnecessary touching of face, eyes and lips with hand	
Understanding as a preventive measure	
True	483 (96.2)
False	4 (0.8)
Don't know about this measure	11 (2.2)
Not aware of any measures	4 (0.8)
Practice of this measure	
Always	443 (88.2)
Sometimes	21 (4.2)
Never	18 (3.6)
Not aware	20 (4)
Need of covering of mouth and nose while coughing and sneezing in public places	
Needed	497 (99)
Not needed	1 (0.2)
Don't know	4 (0.8)
Usage of mask in public places	
Awareness on its importance	
Aware	498 (99.2)
Not aware	4 (0.8)
Practice of this measure	
Always	497 (99)
Sometimes	1 (0.2)
Not aware	4 (0.8)
Hand hygiene as a preventive measure	
Understanding on its importance	
Aware	498 (99.2)
Not aware	4 (0.8)
Awareness and practice of hand hygiene in different situations	
Before having food	
Awareness	495 (98.6)
Aware	7 (1.4)
Not aware	
Practice	
Practice	492 (98)
Do not practice	3 (0.6)
Not aware	7 (1.4)
After coughing or sneezing	
Awareness	
Aware	494 (98.4)
Not aware	8 (1.6)
Practice	
Practice	487 (97)
Do not practice	7 (1.4)

Continued.

Characteristics	Frequency (%)
Not aware	8 (1.6)
On returning from public places	
Awareness	
Aware	497 (99)
Not aware	5 (1)
Practice	
Practice	496 (98.8)
Do not practice	1 (0.2)
Not aware	5 (1)
After having contact with other people	
Awareness	
Aware	494 (98.4)
Not aware	8 (1.6)
Practice	
Practice	492 (98)
Do not practice	2 (0.4)
Not aware	8 (1.6)
Awareness on avoiding unnecessary public gatherings	
Aware	494 (98.4)
Not aware	8 (1.6)
Home quarantine	
Awareness on situations requiring home quarantine	
Aware	480 (95.6)
Not aware	32 (4.4)
Knowledge on situation	
Correct	383 (76.3)
Wrong	105 (20.9)
Don’t know	14 (2.8)
Awareness on duration	
Aware	468 (93.2)
Not aware	34 (6.8)
Knowledge on correct duration	
Correct	392 (78.1)
Approximately correct	10 (2)
Wrong	15 (3)
Unspecific	53 (10.6)
Don’t know	32 (6.4)

Table 4: Sources for clearing doubts related to COVID-19 (n=502).

Characteristics	Frequency (%)
Source for clearing doubts related to COVID-19	
Awareness	
Aware	459 (91.4)
Not aware	43 (8.6)
Known source	
Combinations	137 (27.3)
Health centre	123 (24.5)
Health care worker	106 (21.1)
DISHA	54 (10.8)
Medical college	21 (4.2)
DMO	18 (3.6)
Not aware	43 (8.6)

Table 5: Awareness on COVID-19 preventive measures based on gender, education and occupation.

Characteristics	Frequency (%)
Awareness based on gender	
Male	
Know	242 (100)
Don't know	0 (0)
Female	
Know	256 (98.5)
Don't know	4 (1.5)
Awareness based on education	
Not gone to school	
Knows fully	10 (90.9)
Doesn't know fully	1 (9.1)
Up to 10th	
Knows fully	315 (91.6)
Doesn't know fully	29 (8.4)
Pre degree, Degree and post-graduation	
Knows fully	123 (96.9)
Doesn't know fully	4 (3.1)
Professional	
Knows fully	19 (95)
Doesn't know fully	1 (5)
Awareness based on occupation	
Unemployed	
Knows fully	28 (93.3)
Doesn't know fully	2 (6.7)
House wife	
Knows fully	184 (90.2)
Doesn't know fully	20 (9.8)
Student	
Knows fully	16 (94.1)
Doesn't know fully	1 (5.9)
Non professional	
Knows fully	215 (95.1)
Doesn't know fully	11 (4.9)
Professional	
Knows fully	24 (96)
Doesn't know fully	1 (4)

Table 6: Reasons for non-adherence to COVID-19 preventive measures.

Characteristics	Frequency (%)
Social distancing	
Constraints of space	18(3.6)
Doesn't felt the importance	2(0.4)
Avoiding unnecessary touching of eyes, face and lips	
Forgets	28(5.6)
Doesn't felt the importance	10(2)
Difficulty during work	1(0.2)
Usage of mask in public places	
Difficulty during work	1(0.2)
Hand hygiene in appropriate situations	
Use towel instead of hand washing or sanitizing	1(0.2)
Hand hygiene with soap and water	
Lack of supply	1(0.2)
No response	5(1)

On enquiring about the reasons for non-adherence constraints of space was a major reason for not following social distancing (3.6%) (Table 6). About 28(5.6%) participants responded that they usually forget and unknowingly touch face, eyes and lips unnecessarily. Only one participant (0.2%) who do not wear mask regularly in public places had difficulty during work as a reason. One participant (0.2%) among 502 uses towel as a substitute for hand hygiene. Regarding usage of soap and water or sanitizer one participant was not able to follow due to lack of supply.

DISCUSSION

As COVID-19 infection progressed different vaccination or treatment strategies has been approved country wise; but taking prevention is an utmost essential option to control the infection. For better avoidance of COVID-19 infection, people should have a well understanding about the COVID-19 infection along with greatest attitudes towards the preventive measures. Hence, the current study was done to assess the level of knowledge and attitudes and practices of COVID-19 preventive measures among patients attending Out Patient department of UFHC Paravattani, situated 2.7 km from Thrissur town, Kerala, India. All the countries including, high-income countries, middle-income countries and low-middle income countries have affected by this threat and the situation has been harassed. The new era of this disease, along with its uncertainties, makes it critical for health authorities to plan appropriate strategies to prepare and manage the public. Hence, the population-based study is utmost important in knowing their knowledge, attitudes and practices towards COVID-19 evaluation. At the time of conducting this study, very few reports were published from Asian countries and they showed high levels of COVID-19 knowledge among the general drawlers and healthcare employers.[6,7] Variations in methodology and infection measurement do not make it possible for exact evaluations of knowledge levels across these reports. The present study reported that 100% of the individuals were well aware of the existing pandemic situation of COVID-19. The awareness status of the participants was assessed based on awareness on signs and symptoms, mode of spread, prevention of COVID-19 etc. A recent study, completed among Healthcare Students and Professionals at Mumbai, says that 62% of the respondents were aware regarding COVID-19, its route of transmission, signs and symptoms of the infection. In another study, most participants stated that they are taking precautions such as avoiding crowded places and practicing proper physical hygiene. This shows a general awareness and willingness for participants to make behavioral changes in the face of the COVID-19 pandemic. About 52.5% of them were well aware of the preventive measures to safeguard themselves against COVID-19. The perception of the study visualizes the psychosocial as well as the economic stresses due to COVID-19 pandemic in India.[8] This study also shows that 79 % of the participants had undergone the psychosocial impact due the pandemic of corona virus. The suffered population has faced problems like, staying away from family members, hunger or no food, missing important social gatherings, failure to seek health care facilities, delay in treatment, etc. On the other hand, existing published reports by Jacobson et al, Gupta et al, Singh et al has quoted, people has faced psychosocial problems during the lockdown period.[9-12] The study also reports, 20% of the study population has undergone difficulties like verbal or physical abuse by their family members during this pandemic. Similar results were observed in many studies which were conducted to assess various levels of knowledge and practice of other respiratory infections, whereas only limited studies have been done on the awareness level of COVID-19 among rural and urban population. The present questionnaire-based study, in fact, exposes the need for more comprehensive education programmes with focus on consistency of information from the government and related authorities. The pandemic situation of COVID-19 has initiated the need for timely attention to the population, to prevent long-lasting adverse health outcomes.[13] Till now, many of the KAP studies have assessed the associations of knowledge with attitudes or practices beyond understanding the prevalence of each. The results of these previous studies revealed that a higher level of knowledge is positively related to the practice of preventive measures, and attitudes also associate positively with preventive behaviors.[14-19] However, most of these studies examined the direct effects of knowledge on practicing preventive behaviors or attitudes without exploring the indirect effects of knowledge on practices mediated via attitudes to elucidate the complete psychological condition behind how participants perform behaviors based on their health awareness. Particularly, how knowledge affects practices indirectly via attitudes in the context of COVID-19 is still less known.

Limitations

There are certain important limitations that should be considered while interpreting the outcomes of the present study. The current study sample size was relatively small due to strict lockdown implementation, thus limiting its generalization. The government enforcement of COVID-19 guidelines at the time of the study might have influenced some participants to give socially acceptable responses. A huge systematic data, with inclusive sampling method is warranted to improve representativeness and generalizability of the findings. The present study used self-reported data; it is conceivable that participants may have answered awareness and practice questions positively based on what they perceive to be expected of them.

CONCLUSION

The present study was able to provide a wide-ranging investigation of the knowledge, attitudes and practices of Indians against deadly virus of COVID-19. The outcomes

recommend that Indians have an adequate level of knowledge on COVID-19 and are generally positive in their outlook on overcoming the pandemic. Majority of study participants were aware about COVID-19 preventive measures even if a small proportion were not practicing it and were not aware about it. Therefore, along with the measures to tackle the reasons for non-adherence, programmes on health education regarding COVID-19 preventive measures should be planned and implemented focusing on these vulnerable groups so that prevention of this disease will be more successful.

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