

Research Article

Knowledge, Attitude, and Practice on COVID 19 among Urban Slum Communities in Chennai, Tamilnadu, India–A Cross Sectional Study

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Citation: Williams JD, Vijayaraman A, Priya K, Dinakaran A (2021) Knowledge, Attitude, and Practice on COVID 19 among Urban Slum Communities in Chennai, Tamilnadu, India–A Cross Sectional Study. *Sci Academique* 2(2): 1-13.

Received: 15 July, 2021; **Accepted:** 12 August 2021; **Publication:** 26 August 2021

Abstract

A cross-sectional study was implemented from September 26th-6th October 2020 among the residents of Kannagi Nagar, Chennai through a multi-stage random sampling of 1000 participants (446 – male, 554 – female). This study examines the knowledge, attitude, and practice among the urban slum communities, during COVID-19. This study is part of COVID-19 slum intervention project funded by Bill and Melinda Gates Foundation. The study revealed that one-fourth of the participants are illiterate. By gender, plurality of the participants is aware about COVID-19 (M 93.2%, F 94.2%). Literate male and female participants rely upon television as a source of acquiring knowledge on COVID-19 (M 92.6%, F 96.9%; $p = 0.007$). In the name of disease, people have been discriminated and it has vividly come out in our study with a significant difference between literate, illiterate and literate male-female (M vs F 38.4%, 28.2% $p=0.0035$). The practice of washing hands is high among literate male, female (52.1%, 66.4% $p = <0.001$) compared to illiterates. Practice of wearing a mask is high among both illiterate (91.8%, 93.8%) and literate (91.1%, 94.1%) male-female participants. Practicing social distancing is high among literates (63.1%, 62.1%) compared to illiterate. The study highlights that knowledge levels of the participants are adequate, while the practice of COVID appropriate behaviours may need improvements. Meticulous behavioural change communication programs through standardized messaging would be beneficial.

Keywords: COVID19; Kannagi Nagar; Knowledge; Attitude; Practice

Introduction

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by a new type of virus. The disease originated in Wuhan, China and has since spread globally. On March 11, 2020, the World Health Organisation declared the COVID-19 to be a global pandemic. The WHO emphasized to its member countries the best ways to slow down the transmission is by persistently sharing the knowledge on the causes of COVID 19 and how it spreads so

that one can protect themselves and others from getting infected through following appropriate behaviors [1]

There are very less studies available in India on knowledge, attitude, and practice among public on COVID 19, transmission and individual healthy behaviours in prevention and control of transmitting COVID 19. Poor knowledge level led to risky behaviors and in a pandemic situation like COVID19, it is more essential that everyone has a correct

knowledge and information to protect themselves from getting affected.

Hence, we conducted a study among urban slum communities in Kannagi Nagar, Chennai, and the aim of our study was to assess the knowledge, attitude, and practice of COVID 19. The resettlement slum areas have nearly 23000 household with more than one lakh population.

Objective

The overarching objective is to assess the knowledge, attitude, and practice levels of people in the urban slum communities.

Method

A cross-sectional quantitative survey was conducted among the major urban slum areas (Kannagi Nagar, Ezhil Nagar and Tsunami Quarters) in Chennai, Tamilnadu. Multi-stage random sampling was used to select the study participants. Total area was divided into 40 sampling units based on the number of households. A total of 25 households in each sampling unit was selected using systematic random sampling and ensured 49.1% of

participation in the age group < 35 years and 50.9% of participation in the age group > 35 years. A total of 677 (Kannagi Nagar), 223 (Ezhil Nagar) and 100 (Tsunami Nagar) were participated in the study. Chi-square test was used to compare the categorical variables such as gender, age and education in this study.

Results

Socio-demographic characteristics of the study participants

The socio-demographic details of the study participants are given in Table 1. The median age of the population is 36 years in the range of minimum of 13 years and a maximum of 83 years. Female participation is higher compared to male population (55.4%F: 44.6%M). Around 30% of them were unemployed followed with 29.4% were found be unskilled workers. One fourth of them were found to be illiterate followed with some having high school education (17.9%) and middle school education (17.7%) respectively. More than one-third (87.6%) of the population were found to have monthly income of $\leq 10,000$ rupees per month.

Variables	No. of participants (%)
Age (in years)	
≤ 20	82 (8.2)
20 – 35	409 (40.9)
36 – 50	346 (34.6)
51 – 65	126 (12.6)
≥ 66	37 (3.7)
M:F	446 (44.6): 554 (55.4)
Education	
Illiterate	258 (25.8)
Primary level	152 (15.2)
Middle level	179 (17.9)
High School	177 (17.7)
Higher Secondary	118 (11.8)
Diploma and Degree	116 (11.6)
Occupation	
unemployed	322(32.2)
Unskilled workers	294(29.4)
Skilled workers	204(20.5)
Company	22(2.2)
Professional	3(0.3)

Public service	16(1.6)
Self-employed	20(2.0)
Students	119(12.0)
Income	
Nil	228 (22.8)
<5000	139 (13.9)
5000 – 10000	509 (50.9)
>10000	124 (12.4)

Table 1: Socio-demographic characteristics of the study participants

Knowledge about COVID 19 among the study participants by Gender

Table 2 represents the knowledge about COVID 19 among the study participants according to gender. It was observed that equal proportions of male and female were responded that one could contract COVID 19 through droplet infection and in direct contact with infected people. A plurality of participants has responded that they know what COVID19 is that it’s a virus that can cause disease. Irrespective of gender both male and female (93.2%, 94.2%) have equal knowledge on this. A varied proportion of responses was observed among male and female for varied answers for the question on “who are at risk for COVID 19 infection?” expect the responses for “Pregnant mothers” (M vs. F;42.4 vs. 48.9%, $p = 0.040$) and “people with diabetes or other chronic condition” (M vs. F;48.6 vs. 56.8%, $p = 0.009$) with statistically significant difference. About 43.7 % and 40.85 of male and female participants were found to be aware that the persons with COVID19 can infect the virus to

others even in the absence of fever, but equal proportion of the participants (M vs. F; 42.6 vs. 45.7%) mentioned that “Persons with COVID19 cannot infect the virus to others when fever is not present”. A sizeable number of participants (M 31.8%, F 37.7% $p = 0.052$) have also stated that people who don’t follow any preventive measures for COVID are also at risk.

However, it was noted that more than 80% of both male and female participants responded “yes” to “People who have contact with someone infected with the COVID19 virus should be immediately isolated in a proper place”. Around 64.1% of male and 66.1% of female participants mentioned that COVID 19 is very dangerous and around 32% of both had mentioned COVID 19 is mild dangerous. More than one-third of the participants mentioned that they would go to hospital if they or their family member experience symptoms of this disease.

Of all the key questions of the survey, female participants have more knowledge compared to male participants.

Variables		Male (n = 446) (%)	Female (n = 554) (%)	p-value
What do you know about COVID 19?	I don’t know	3.4	4.3	0.4651
	It’s a virus that can cause disease	93.7	94.2	0.7409
	It’s a government program	1.3	1.1	0.7719
	It’s a TV/Radio campaign	1.3	1.1	0.7719
	Other	0.2	0.2	1.0000
How COVID 19 spreads?	Droplets from infected Person	66.4	68.9	0.4006
	Direct contact with infected person	57.8	57.5	0.9240

	Touching contaminated objects/surface	17.9	16.06	0.4403
Who are at risk?	Elder Adults	65.2	66.4	0.6909
	Pregnant Mothers	42.4	48.9	0.0405
	Health Care Workers	13.9	15.3	0.4764
	People with diabetes/ Chronic Conditions	48.6	56.8	0.0098
	People who don't follow any preventive measures for COVID	31.8	37.7	0.0521
Persons with COVID19 cannot infect the virus to others when fever is not present	Yes	42.6	45.7	0.3269
	No	43.7	40.8	0.3561
	Don't Know	13.7	13.5	0.9269
People who have contact with someone infected with the COVID19 virus should be immediately isolated in a proper place	Yes	87.4	90.3	0.1452
	No	10.3	7.2	0.0821
	Don't Know	2.2	2.5	0.7565
How dangerous do you think the new COVID19 risk is?	Very dangerous	64.1	66.1	0.7565
	Mild dangerous	31.8	31.4	0.8925
	Not dangerous	4.0	2.5	0.1785
What to do if you or someone from your family has symptoms of this disease?	Approach an experienced relative	20.0	17.5	0.3129
	Go to hospital	76.2	78.0	0.5003
	See a nurse	6.3	9.0	0.1136
	Get medicines	7.2	7.2	1.0000
	Look for Traditional healer	6.7	7.2	0.7578
	Will isolate myself	26.9	26.4	0.8589

Table 2: Knowledge about COVID 19 among the study participants by Gender.

Knowledge about COVID 19 among the study participants by Education and Gender

Table 3 shows the knowledge about COVID 19 among the study participants according to education and gender. The similar proportion of illiterate male and female participants was found to aware about the spread of COVID 19. But less than 20% of both illiterate and literate participants responded that COVID spreads through “Touching contaminated objects / surface”. About 72.8% of the literate females responded that COVID would spread through droplets from infected people compared to 65.9% of literate male participants. The difference was statistically significant. Similar

proportion of literate male (59.5%) and female (62.5%) responded that COVID 19 would

spread through “direct contact with infected people”.

More than 60% of the participants were found to know that older persons are at risk of contracting COVID 19 infections followed by 60% of illiterate male and literate females responded that people with diabetes/chronic illness are at risk. The gender difference was significant among the literate male and females (M vs. F; 45.3vs.59.8; $p < 0.001$). About 51.7% of literate females were found to be aware that pregnant mothers are at risk compared to 40% of illiterate females, 41.2%

of illiterate males and 42.7% of literate males and the difference was statistically significant.

It was observed that 90% and 92% of literate males and females knew that “people who have contact with someone infected with the COVID19 virus should be immediately isolated in a proper place” compared to 79.4% and 86.3% of illiterate males and females, respectively. The gender difference was not statistically significant. Majority of the literate participants (70%) mentioned that risk of

COVID 19 is very dangerous. A majority (79 %) of the literate participants mentioned that they would prefer to going to hospital if they would get infected with COVID 19.

In common, literate participants found to be more knowledgeable compared to the illiterates, however illiterates have also found to be almost equally responded in few of the responses to the key questions, how COVID spread, immediate isolation of people contracted with COVID, approach hospital when family members have symptoms.

Education	M (%)	F (%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
How does it spread?									
	Droplets from infected people			Direct contact with infected people			Touching contaminated objects / surface		
Illiterate(n=258)	68.0	59.6	0.177	41.2	52.8	0.066	15.5	12.4	0.490
Literate (n= 742)	65.9	72.8	0.038	62.5	59.5	0.404	18.6	17.6	0.705
Who are at risk?									
	Adults			Pregnant Mothers			Health Care workers		
Illiterate(n=258)	22.7	25.5	0.615	41.2	39.8	0.814	7.2	8.7	0.674
Literate (n= 742)	28.4	27.0	0.672	42.7	51.7	0.006	15.5	18.1	0.347
	People with diabetes / other chronic illness			People who don't follow preventive measures			Older Persons		
Illiterate(n=258)	60.8	49.7	0.082	29.9	36.0	0.240	66.0	62.7	0.600
Literate (n= 742)	45.3	59.8	<0.001	32.4	38.4	0.086	65.0	67.9	0.405
Persons with COVID19 cannot infect the virus to others when fever is not present									
	Yes			No			Don't know		
Illiterate(n=258)	40.2	44.7	0.478	44.3	37.3	0.263	15.5	18.0	0.598
Literate (n= 742)	43.3	46.1	0.445	43.6	42.2	0.717	13.2	11.7	0.541
People who have contact with someone infected with the COVID19 virus should be immediately isolated in a proper place									
	Yes			No			Don't know		
Illiterate(n=258)	79.4	86.3	0.143	15.5	8.7	0.399	5.2	5.0	0.943
Literate (n= 742)	89.7	91.9	0.307	8.9	6.6	0.182	1.4	1.5	0.919
How dangerous do you think the new COVID19 risk is?									
	Very Dangerous			Mild dangerous			Not Dangerous		
Illiterate(n=258)	48.5	51.6	0.630	47.4	42.9	0.475	4.1	5.6	0.601
Literate (n= 742)	68.2	72.0	0.256	27.5	26.7	0.809	4.0	1.3	0.018
What to do if you or someone from your family has symptoms of this disease?									
	Approach an experienced relative			Go to hospital			See a nurse		
Illiterate(n=258)	13.4	14.9	0.739	74.2	75.2	0.867	3.1	7.5	0.147

Education	M (%)	F (%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
Literate (n= 742)	21.7	18.57	0.277	76.8	79.1	0.442	7.2	9.7	0.222
	Get medicines			Look for Traditional healer			Will isolate myself		
Illiterate(n=258)	10.3	6.2	0.222	5.2	6.8	0.588	25.8	25.5	0.956
Literate (n= 742)	6.3	7.6	0.478	7.2	7.4	0.912	27.2	26.7	0.875

Male (M) =446: Female (F) =554

Table 3: Knowledge about COVID 19 among the study participants by Education and Gender

Attitude about COVID 19 among the study participants by Education and Gender

The results of attitude about COVID 19 among the study participants according to Education and Gender are presented in Table 4. Around 94.8% of the illiterate males responded that Television was the reliable source of getting information about COVID 19 followed by 75% believed that friends/relatives and Corporation and radio (45.4%). Whereas lesser proportion of the illiterate females responded that Television (90.7%) followed by Family/friends (63.3) and Corporation (62.1%) would be the reliable sources, respectively. The difference between male and female groups was statistically significant at $p < 0.05$ for family/friends and corporation. Whereas the proportion of literate males and females

was found to be significantly different in mentioning Television as a reliable source (Mvs.F;92.6 vs,96.9%; $p = 0.007$). The responses for other reliable sources such as Radio, Social Media, Family /friends, corporation, medical shops, posters were found to be similar among literate males and females.

It is found that almost half (50.9%) of the study respondents have said that COVID19 creates stigma, and moreover the study reveals that people who are affected by COVID19 are discriminated and it is significantly showing difference between Illiterate and Literate male female (M vs F 38.4%, 28.2% $p=0.0035$) respectively, while it is observed that the illiterate male and female participants have recorded in high number (41.2%, 32.3%).

	M (%)	F (%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
Source of getting reliable information on COVID19									
	Radio			Television			Social Media		
Illiterate	45.4	60.2	0.0201	94.8	90.7	0.254	43.3	41.0	0.642
Literate	60.7	62.1	0.7345	92.6	96.9	0.007	51.3	52.9	0.643
	Family/Friends			Corporation			Medical shop		
Illiterate	75.3	63.4	0.048	75.3	62.1	0.030	56.7	56.5	0.975
Literate	71.6	77.6	0.060	70.8	75.8	0.116	58.2	59.3	0.761
	Posters			Google					
	45.4	43.5	0.766	39.2	40.4	0.849			
	51.6	49.4	0.55	51.9	49.4	0.496			
Is COVID19 disease is generating stigma against specific people?									
	Yes			No					
Illiterate	51.5	50.9	0.9257	48.5	49.1	0.9257			

	M (%)	F(%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
Literate	60.7	54.7	0.0991	39.3	45.3	0.099			
Which group is being discriminated in your community because of COVID19?									
	No one			Affected People			Whole Family		
Illiterate	23.7	25.5	0.7597	41.2	32.3	0.1444	18.6	20.5	0.7106
Literate	25.8	32.6	0.0424	38.4	28.2	0.0035	22.6	20.4	0.446
	Whole street			Others					
	9.3	16.8	0.0921	7.2	5.0	0.4435			
	10.0	12.7	0.2489	3.2	6.1	0.0538			

Table 4: Attitude about COVID 19 among the study participants by Education and Gender.

Attitude about COVID 19 among the study participants by Age and Gender

Table 5 represents the attitude of participants by age and gender. In terms of getting reliable information on COVID19, it is observed that female participant ages >36 have more reliability on Television (97.2%) compared to ≤35 ages female (92.9%) which shows a significant difference. Secondly, male in the same ages (>36) are more reliable on radio

(60.3%) compared to the ≤35 ages male (55%) which shows a significant difference.

It is also observed that there is a significant difference among >36 ages male and female (35.8%, 26.8%) against ≤35 ages male and female (41.7%, 32.2% p=0.0265) stating that people affected with COVID19 are being discriminated in the community. A sizeable number of ≤35 ages male and female (61.6%, 54.7%) have stated that COVID19 has created stigma compared to the <36 age group male and female (55.4%, 52.6%).

Age (in Years)	M (%)	F(%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
Source of getting reliable information on COVID19									
	Radio			Television			Social Media		
>36 (n=)	60.3	63.4	0.471	94.6	97.2	0.141	56.9	57.1	0.947
≤35(n=)	55.0	59.6	0.254	91.7	92.9	0.642	43.4	41.2	0.616
	Family/Friends			Corporation			Medical shop		
>36 (n=)	74.5	77.4	0.473	71.1	76.0	0.223	60.8	60.3	0.911
≤35(n=)	70.7	69.3	0.731	72.3	67.4	0.260	55.4	56.6	0.785
	Posters			Google					
>36 (n=)	53.4	49.8	0.432	52.9	53.0	1.000			
≤35(n=)	47.5	45.3	0.619	41.7	37.1	0.278			
Is COVID19 disease is generating stigma against specific people?									
	Yes			No					
>36 (n=)	55.4	52.6	0.5547	44.6	47.4	0.5547			
≤35(n=)	61.6	54.7	0.1157	38.4	45.3	0.1156			
Which group is being discriminated in your community because of COVID19?									

Age (in Years)	M (%)	F (%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
	No one			Affected People			Whole Family		
>36 (n=)	27.9	33.1	0.2198	35.8	26.8	0.035	23.0	19.5	0.3482
≤35(n=)	23.1	27.7	0.2349	41.7	32.2	0.0265	20.7	21.3	0.9121
	Whole street			Others					
>36 (n=)	9.8	14.6	0.1147	3.4	5.9	0.2048			
≤35(n=)	9.9	13.1	0.2603	4.5	5.6	0.5728			

Table 5: Attitude about COVID 19 among the study participants by Age and Gender.

Practice about COVID 19 among the study participants by Gender and Education

Table 6 represents the participants practice towards COVID19 by gender and education. It is observed that literate male and female (52.1%, 66.4% $p = <0.001$) participants have more inclination towards washing hands regularly using alcohol-based sanitiser or soap/water as preventive step from getting infected of COVID19 and it has statistically significant difference. Similarly, the same group practice covering mouth and nose when coughing or sneezing as preventive steps from getting infected and this too has statistically significant difference as observed in the study (63.3%, 72.5% $p = 0.007$). It is worth to state that the practice of wearing a mask is high among both Illiterate (91.8%, 93.8%) and literate (91.1%, 94.1%) male, female participants of the study, and it is also observed that in plurality both Illiterate

(79.4%, 86.3) and literate (89.7%, 91.9%) male, female participants have the practice of washing their mask after every use. However, a fewer number of participants have also responded that they seldom wash their mask after use which has a significant difference among Illiterate male, female (5.2%, 5.0% $p = <0.0001$).

The practice of washing hands is observed among male, female participants who are literate on different occasions such as before preparing food (45.3%, 67.2% $p = <0.0001$), before eating (80.2%, 87.5% $p = 0.006$) which has statistically significant difference. However, it is also observed that among illiterate male, female participants, washing of hands after coughing and sneezing which has a significant difference (26.8%, 39.1% $p = 0.044$). Practicing of social distancing is high among literates (63.1%, 62.1%) compared to illiterate participants.

Education	M (%)	F (%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
Steps taken to prevent getting infected from COVID19									
	Washing hands regularly using alcohol-based cleaner or soap / water			Covering mouth and nose when coughing or sneezing			Avoid close contact with anyone who has a fever and cough		
Illiterate	51.5	55.9	0.492	67.0	62.7	0.487	55.7	59.6	0.534
Literate	52.1	66.4	<0.001	63.3	72.5	0.007	57.3	60.3	0.407
	Using homeopathic remedies			Eating garlic, ginger, lemon			Avoid unprotected direct contact with live animals and surfaces in contact with animals		
Illiterate	10.3	9.9	0.923	37.1	38.5	0.824	2.1	2.5	0.828

Literate	15.2	14.0	0.646	42.7	47.8	0.160	1.7	2.3	0.575
Wearing mask when going out of home									
	Yes			No					
Illiterate	91.8	93.8	0.536	8.2	6.2	0.536			
Literate	91.1	94.1	0.113	8.9	5.9	0.113			
What kind of mask are you using?									
	Reusable cloth masks			Dupatta/pallu/towel			Disposable medical mask		
Illiterate	85.6	80.1	0.269	3.1	2.5	0.770	15.5	18.0	0.598
Literate	76.8	79.6	0.347	1.4	1.0	0.601	13.2	11.7	0.541
	Medical surgical mask (N-95)			Others			Multiple mask (more than 2 options)		
Illiterate	1.0	0.6	0.717	1.0	2.5	0.023	4.1	5.6	0.601
Literate	6.3	4.1	0.169	0.9	0.8	0.891	8.9	9.2	0.894
How often do you wash masks									
	After every use			After 2-3 use			Seldom wash		
Illiterate	79.4	86.3	0.143	15.5	8.7	0.399	5.2	5.0	< 0.0001
Literate	89.7	91.9	0.307	8.9	6.6	0.182	1.4	1.5	0.919
	Never wash								
Illiterate	3.1	1.2	0.297						
Literate	1.7	1.5	0.837						
When to wash hands?									
	Before preparing food			Before eating			After using a toilet		
Illiterate	46.4	60.2	0.030	87.6	88.8	0.773	63.9	56.5	0.242
Literate	45.3	67.2	<0.0001	80.2	87.5	0.006	54.4	58.8	0.235
	After changing children's diaper or cleaning the baby's stool			After coming home from a public place			After using a toilet		
Illiterate	8.2	14.3	0.149	61.9	72.7	0.070	26.8	39.1	0.044
Literate	16.6	16.3	0.903	77.9	78.9	0.774	43.6	44.3	0.843
	Before and after caring the sick								
Illiterate	16.5	18.0							
Literate	21.2	22.4							
Practicing social distancing and limiting your movement outside your home									
	Yes, as much as possible			Partially			Not at all		
Illiterate	46.4	54.7	0.199	46.4	39.8	0.867	6.2	4.3	0.513
Literate	63.9	62.1	0.610	34.1	34.6	0.442	1.4	2.8	0.202

Male (M)=446: Female (F)=554

Table 6: Practice about COVID 19 among the study participants by Gender and Education.

Practice about COVID 19 among the study participants by Age

Table 7 represents the participants practice towards COVID19 by age. It is observed that there is lower significance level when compared to education and age on few of the variables. Washing hands regularly using alcohol-based cleaner or soap/water is commonly seen in both the age groups >36 and <35, it is 53.9%, 66.6% $p = 0.004$ and 50.4%, 59.9% $p = 0.031$ respectively. Practice of wearing mask when leaving home is equally seen in both the variable groups. It is observed that using of reusable cloth mask is slightly higher among participant who are in the ages ≤ 35 (80% male and female) compared to literate male and female scores (76.8%,

79.6%). The practice of washing masks is significantly lower among the ages ≤ 35 (66.1%, 70.4%) when compared to literate male and female (89.7%, 91.9%). It was also observed that practice of washing hands before preparing food is almost at similar levels of difference found among the two different age groups and both illiterate and literate participants with a statistically significant difference (>36 , 47.1%, 66.6% $p = < 0.0001$ and ≤ 35 , 44.2%, 63.7% $p = < 0.0001$) and (46.4%, 60.2% $p = 0.030$ and 45.3%, 67.2% $p = < 0.0001$) respectively. Practicing of social distancing is widely observed among >36 age groups (64.7%, 59.9%) compared to illiterate male female participants (46.4%, 54.7%).

Age (in years)	M (%)	F (%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
Steps taken to prevent getting infected from COVID19									
	Washing hands regularly using alcohol-based cleaner or soap / water			Covering mouth and nose when coughing or sneezing			Avoid close contact with anyone who has a fever and cough		
>36	53.9	66.6	0.004	69.1	72.8	0.371	61.3	62.0	0.866
≤ 35	50.4	59.9	0.031	59.9	66.3	0.136	53.3	58.1	0.281
	Using homeopathic remedies			Eating garlic, ginger, lemon			Eliminate standing water		
	19.6	15.0	0.178	40.7	46.0	0.243	2.0	2.8	0.562
	9.5	10.5	0.713	42.1	44.2	0.641	2.5	1.5	0.425
	Cook meat and eggs well			Avoid unprotected direct contact with live animals and surfaces in contact with animals			Did nothing		
>36	4.9	9.1	0.082	1.5	1.7	0.816	2.9	2.4	0.728
≤ 35	5.0	4.1	0.648	2.1	4.9	0.087	8.3	3.4	0.017
Wearing mask when leave home									
	Yes			No					
>36	90.7	93.7	0.209	9.3	6.3	0.208			
≤ 35	91.7	94.4	0.238	8.3	5.6	0.238			
What kind of mask are you using?									
	Reusable cloth masks			Dupatta/pallu/towel			Disposable medical mask		
>36	85.3	87.8	0.419	5.4	4.5	0.659	15.2	12.9	0.467
≤ 35	86.0	86.1	0.950	2.5	2.6	0.914	10.3	11.2	0.744
	Medical surgical mask (N-95)			Others			Multiple mask(more than 2 options)		
	6.9	5.9	0.673	1.0	0.3	0.368	9.8	10.5	0.814

Age (in years)	M (%)	F(%)	p value	M (%)	F (%)	p value	M (%)	F (%)	p value
	7.4	3.0	0.023	0.8	2.6	0.123	6.2	5.6	0.781
How often do you wash masks									
	After every use			After 2-3 use			Seldom wash		
>36	80.9	79.1	0.626	14.7	17.8	0.366	2.0	2.1	0.92
≤35	66.1	70.4	0.298	30.2	24.7	0.168	2.1	3.0	0.506
	Never wash								
	2.5	1.0	0.223						
	1.7	1.9	0.850						
When wash hands?									
	Before preparing food			Before eating			After using a toilet		
>36	47.1	66.6	< 0.0001	83.3	88.2	0.128	58.8	58.9	0.989
≤35	44.2	63.7	< 0.0001	80.6	87.6	0.028	54.5	57.3	0.531
	After changing children's diaper or cleaning the baby's stool			After coming home from a public place			After coughing and sneezing		
>36	18.1	18.5	0.925	74.5	79.8	0.166	41.2	47.4	0.173
<35	12.0	12.7	0.797	74.4	74.2	0.952	38.8	37.8	0.813
	Before and after caring the sick								
>36	23.0	21.6	0.707						
<35	17.8	20.6	0.419						
Practicing social distancing and limiting your movement outside your home									
	Yes, as much as possible			Partially			Not at all		
>36	64.7	59.9	0.283	33.3	37.6	0.328	2.0	2.1	0.916
<35	56.2	59.9	0.394	39.7	34.5	0.224	2.9	4.5	0.341
	Not aware of social distancing								
	0.0	0.3	0.405						
	1.2	1.1	0.908						

Table 7: Practice about COVID 19 among the study participants by Age.

Discussion

The purpose of the study was to assess the knowledge, attitude and practice towards COVID19 among the residents of Kannagi Nagar the largest slum resettlement colony, Chennai, Tamilnadu province. The information on knowledge includes basic awareness, risk, transmission, and prevention was assessed among the participants and

stratified according to gender, age and education. The information on attitude includes assessing participants attitude in sourcing the reliable information on COVID19, people's perception towards stigma associated with the disease and discrimination practices attached with it. The practice includes COVID appropriate behaviours such as preventive steps taken towards wearing of

mask, hand wash and maintaining social distancing.

A similar study has found that 55.6% of the study participants were knowledgeable of the symptoms exhibited by an infected individual [2], while our study shows that 68% of the study participants are knowledgeable of the symptoms.

The study participants have exhibited a good knowledge level (94%) towards COVID19, nearly, while another study conducted in China has also shown that overall knowledge levels on COVID is 90% [3].

In terms of the COVID transmission, participant knowledge on the three important aspects of spread i.e., droplet from the infected person, direct contact with infected person and touching of contaminated objects and surfaces is higher among the participant who are literate male and female (65.9%, 72.8%; 62.5%, 59.5%; 18.6%, 17.6%) respectively.

In plurality, 79% of the study participants visit a hospital when a member of the family has symptoms of the disease, in comparison this is not widely seen in any other studies.

Stigma being associated with COVID, our study shows that 55.9% of the study participants have expressed that disease create stigma, while a similar study conducted in Kashmir among COVID disease survivors' states that there are high levels of stigma associated with the disease [3]. In similarity our study also has revealed that 33.7% of the participants stated that the people infected with the disease are being discriminated due to stigma.

People's perception towards practice is very critical and in a pandemic situation, it is much more crucial. Our study has revealed that (58.3%) more than half of the participant does frequent handwash with alcohol based cleaner or soap/water, in similarity another study in Bangladesh [5] on behaviour records a higher number (87.5%) people does frequent handwashing during COVID times. This study also records that the practice of using masks (91.6%) is higher among the study population and our study also compliments equally (92%).

While practicing social distancing have become a norm across the globe due to the pandemic, it is critical that one should adhere to such norms. Our study revealed that 60% of the participant practice social distancing during the pandemic situation, in similarity a study in US also records that more social distancing is followed (65%) compared to before the COVID19 outbreak [6].

Conclusion

The study states that the knowledge levels are adequate in terms of the COVID19 pandemic among the study participants, however practicing COVID appropriate behaviours needs to be improved. It is suggested that behaviour change communication materials with customised messages, innovative social media campaigns, mid media, mass media awareness programs emphasizing the message on not to stigmatize people who are affected by COVID can be developed involving the local communities and non-governmental organisations.

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