## **Original Research Article**

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# A community based cross-sectional study: perception of adults about corona virus disease (COVID-19) in North India

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#### **ABSTRACT**

**Background:** Coronavirus disease (COVID-19) is caused by a novel virus SARS Coronavirus- 2 (SARS-CoV-2). First case of this infection was reported in December 2019 in Wuhan city of China and after that it spread globally. WHO declared it as a pandemic when the infection was reported from all six WHO regions.

**Methods:** The study was community based cross-sectional designed and was carried out in an urban slum of Rohtak before the first lockdown was announced in India. The study recruited 400 adults of age 18-50 years.

**Results:** In the study, 90% of subjects had heard of corona virus infection and majority of source of information was television and peer group. The association between socio-demographic characteristics like literacy and caste with knowledge about corona virus infection was found statistically highly significant but this association in gender and age was not found no statistically significant.

**Conclusions:** The study concluded that majority of subjects had heard about COVID-19 and majority knew the correct mode of transmission. Most of the study subjects knew that wearing face mask and frequently hand washing are the only preventive measures available against COVID-19.

Keywords: COVID-19, Death, Prevention, Hand wash, Literacy

## **INTRODUCTION**

Coronavirus disease (COVID-19) is caused by a novel virus belonging to the family of corona viruses similar to severe acute respiratory syndrome (SARS) and given the name SARS Coronavirus- 2 (SARS-CoV-2) and the disease was named as COVID-19 on 11th February 2020 by World Health Organization (WHO). First case of this infection was reported in December 2019 in Wuhan city of China and after that it spread globally. On 30th January 2020, WHO declared this disease as Public Health Emergency of International Concern (PHEIC) and

on 11th March 2020, WHO declared it as a pandemic when the infection was reported from all six WHO regions. The COVID-19 shows common symptoms like fever, malaise, dry cough, running nose, sneezing, sore throat, loss of smell, diarrhea as in other viral infections. The mean incubation period is 5.8 days (range 2-14 days). Majority (80%) of infections result in mild symptoms while 15% patients show moderate symptoms like shortness of breath and need admission but 5% patients progress to viral pneumonia and multi-organ failure. COVID-19 spreads from one person to another through small droplets or fomites produced when an

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infected person coughs, sneezes or even talks.<sup>6,7</sup> COVID-19 is highly contagious disease and till now, all over the world, more than 11.0 million are infected with case fatality rate (CFR) reported as 6.67 % while in India 0.67 million cases have been reported with 2.86% CFR.<sup>8,9</sup> Till now, there is no vaccine or specific antiviral treatment available in the world and the patients are being managed by giving symptomatic treatment, supportive care like oxygen and fluid therapy, and isolation or quarantine of the patients.<sup>10</sup>

Researchers recommended the only way to contain and control this contagious infection is prevention and the prevention in term of social distance of 2 meters, frequent hand wash with simple soap or with 70% alcohol hand sanitizer for 20 seconds and wearing of face mask. So the correct perception in community about corona virus infection should be there about prevention, control and management of the disease. The Government of India tries to disseminate correct information about COVID-19 using all social media. There is no data regarding community perception about COVID-19 in India that's why the study was planned to assess the community perception about COVID-19 among adults in an urban slum of District Rohtak (Haryana).

## **METHODS**

The study was carried out in an urban slum of Rohtak district which is the field practice area of the Department of Community Medicine, Pt. B.D. Sharma PGIMS, Rohtak, Haryana. The urban slum is a field practice area and all health services are being provided by department of Community Medicine Pt. B. D. Sharma PGIMS Rohtak (Haryana). This was community based crosssectional study and was carried out from 15th February 2020 to 15th March 2020 by visiting house to house before the first lockdown was announced in India. The study recruited 400 adults of age 18-50 years and sample size of the study calculated by 4pq/L<sup>2</sup>. Considering the 50% knowledge about COVID-19, allowable error 5% (L), and 95% confidence interval, the sampling universe came out to be 400 adults and subjects were selected randomly from six anganwadis of this urban slum.

The selected subjects were contacted in their house by investigators. Study subjects of 18-50 years who are willing to give consent were included. Study subjects who are bed ridden or suffering from neuropsychiatric illness were excluded from the study. Data were collected in their vernacular language on pre-designed, pre tested, semi-structured schedule. The questionnaire consists of socio-demographic variables (age, sex, literacy, occupation, caste etc), knowledge about COVID -19 like nature, mode of spread/transmission, symptoms, laboratory tests and knowledge about preventive measures. All the study participants were fully informed about the purpose of the study and verbal consent was taken from the individuals before starting the interview.

The data were collected and analyzed using the Statistical Package for Social Sciences Version 12.

#### RESULTS

The study included 400 subjects and found that 240 (60%) were male and rest were female. Majority (40%) subjects were in 18-25 years and nearly one third (30%) subjects were in 25-35 years. Majority (70%) of adults were educated upto matric, 15% and 5% subjects were literate upto middle and primary class while 10% subjects were higher secondary. Two third (65%) subject belonged to general caste and 20% subjects were other backward class while 15% subjects were schedule caste. Occupation wise distribution, one third (35%) subjects were laborers, 25% subjects were in private job while 10% subjects were unemployed. The socio-economic status was assessed by Modified Kuppuswami socio-economic Scale and it was found that 40% and 30% subjects were upper lower and lower middle class while rest 20% subjects were lower class (Table 1).

Table 1: Socio-economic variables of subjects (n=400).

Socio-demographic characteristics	Subjects	%
Sex		
Male	240	60
Female	160	40
Age (years)		
18-25	160	40
25-35	140	35
35-50	100	25
Literacy		
Primary	20	5
Middle	60	15
Matric	280	70
Higher secondary and more	40	10
Caste		
General caste	260	65
Other backward caste	80	20
Schedule caste	60	15
Occupation		
Unemployed	40	10
Laborer	140	35
Private job	80	20
Govt job	20	5
House wife	120	30
Socioeconomic class		
Class I	8	2
Class II	160	40
Class III	120	30
Class IV	60	15
Class V	52	13

The present study found that the majority 360/400 (90%) of subjects had heard of corona virus infection and rest 40 (10%) had not heard of this infection. Regarding source of information about corona virus infection, it was

revealed that all 360(100%) subjects had source of information was television, second commonest source was peer group which accounted 80% followed by print media (60%) while the health functionaries (ASHA, AWWs or Health Workers) and relatives were 30% and 20% respectively.

Table 2: Knowledge about COVID -19 among adults (n=400).

Characteristics	Subjects	%	
Ever heard about corona virus			
Yes	360	90	
No	40	10	
Source of information*	N=360		
Television	360	100	
Peer group	288	80	
Print Media	216	60	
Health functionaries	108	30	
Relatives	72	20	
Causes of corona virus	N=360		
infection*			
Respiratory route (Droplets)	288	80	
Drinking dirty water	108	30	
Intake of unhygienic Food	180	50	
Mosquito bite	72	20	
Blood borne infection	108	30	
Don't Know	18	5	
Common modes of	N=360		
transmission*			
Coughing and sneezing	324	90	
Mass gathering	252	70	
Hand shaking	180	50	
Touching with infected person	144	40	
Sharing meals	0	0	
Sexual contact	36	10	
How the transmission of	N. 040		
Corona virus infection can be	N=360		
prevented?*	224	00	
Wearing face mask	324	90	
Regular hand Washing	180	50	
Avoiding crowded places	216	60	
Starting more nutritious diet	180	50	
Staying Home	288	80	
By receiving vaccine	108	30	
Most common symptom of corona virus infection*	N=360		
Fever	288	80	
Throat pain	180	50	
Running nose	216	60	
Cough	252 70		
Vomiting	36	10	
Difficulty in breathing	72	20	
Headache and weakness	36	10	
in 1.1.1	50	10	

<sup>\*</sup>multiple response

When asked about cause of corona virus infection, majority (80%) said that respiratory (droplets) route is the most common cause followed by 50% subjects said that it could be because intake of unhygienic food while 30% subjects thought that it spreads through drinking of dirty water and blood borne infection.

Table 3: Association between socio-demographic characteristics and those who heard of corona virus infection (n=400).

Socio- demographic variables	Heard of corona virus infection		Total	Chi- Square test
variables	Yes	No.		test
Sex	1 68	NU		$X^2 = 0.253$
Male	220	20	240	X = 0.233
Female	135	15	160	P = 0.171
	133	13	100	F = 0.1/1
Age (years) 18-25	152	8	160	$X^2 = 0.319$
25-35	124		160	X= 0.319
		16	140	D 0.001
35-50	94	6	100	P = 0.081
Education	1.0		20	XX2 44.20
Primary	18	2	20	$X^2 = 44.20$
Middle	46	14	60	
Matric	262	18	280	P = 0.001
Higher secondary and above	34	6	40	
Caste				
General caste	250	10	260	$X^2 = 32.18$
Other Backward caste	62	8	80	
Schedule caste	42	18	60	P = 0.001
Occupation				
Unemployed	28	12	40	$X^2 = 0.1701$
Laborer	124	16	140	
Private Job	76	4	80	P = 0.312
Govt Job	20	0	20	
House wife	112	8	120	
Socioeconomic				
Class				
Class I	8	0	8	$X^2 = 0.289$
Class II	154	6	160	
Class III	112	8	120	P = 0.072
Class IV	35	15	60	
Class V	40	12	52	

Awareness regarding common mode of transmission of corona virus infection, the study found that maximum (90%) subjects said that coughing and sneezing as most common mode of transmission while nearly three fourth (70%) considered that the mass gathering of peoples as a common mode of transmission. Half of subject (50%) thought that it could be transmitted through hand shaking while 40% and 10% said that common mode of

transmission is touching an infected person and on sexual contact.

The study also evaluated that how transmission of this infection can be prevented and revealed that majority (90%) of participants said that wearing of face mask can prevent transmission of corona virus infection while for 80% of subjects, staying at home was the only way to prevent this infection. However, 60% subjects said that avoid going into the crowded places can be helpful in prevention of transmission. Half of subjects thought maintaining personal hygiene and good nutritious diet could prevent this infection. About knowledge of most common symptom of the corona virus infection, 80% of subjects knew fever as most common symptom whereas cough as the second commonest symptom in 70% while 60% and 50% subjects said that running nose and throat pain respectively are the common symptoms (Table 2).

The present study studied the association between socioeconomic characteristic with knowledge of corona virus infection by using chi- square statistical test and found out that gender wise and age wise there is no statistically significant difference but literacy wise (p=0.001) and caste wise (p=0.001), difference in awareness of corona virus infection was found statistically highly significant i.e as education of subjects increases the level of knowledge also increases and also the subjects who belong to higher caste had higher knowledge as compared to backward class and scheduled caste while socio economic status had no impact on knowledge of subject and also found to be statistically non-significant (Table 3).

## **DISCUSSION**

There is currently no vaccine or treatment for COVID-19. Only way to contain this infection is by taking few preventive measures like social distancing, covering mouth, avoid touching your mouth, nose, or eyes.and covering nose with cloth and washing your hands often with soap and water for at least 20 seconds, especially before eating, and after blowing your nose, coughing, or sneezing and after using bathroom. A 70% alcohol-based hand sanitizer can be used when soap and water are not available.

The study included 400 subjects and found that 240 (60%) were male and rest were females. Majority (40%) subjects were in 18-25 years and nearly one third (30%) subjects were in 25-35 years. Majority (70%) of adults were educated upto matric, 15% and 5% subjects were literate upto middle and primary class. Two third (65%) subject belonged to general caste and 20% subjects were other backward class while 15% subjects were schedule caste. One third (35%) subjects were laborers. According to Modified Kuppuswami Socio-economic Scale, 40% and 30% subjects were upperlower and lower middle while 28% subjects were in lower class.

The association between socio-demographic characteristics with knowledge about corona virus infection was studied using chi- square statistical test was studied and found out that gender wise and age wise, there was no statistically significant difference in the knowledge about corona infection but literacy wise (p= 0.001) and caste wise (p=0.001), awareness of corona virus infection was found statistically highly significant. However, socio economic status had no effect on knowledge of subjects and also statistically no significant difference. Literacy definitely affects the knowledge about infection, so in the study area there in an urgent need of imparting awareness about COVID-19 by health care workers again and again so that they get appropriate knowledge. Other backward class and schedule caste had lower knowledge than higher caste. Primary health care workers, ASHA and Anganawdi workers should visit these areas and take responsibility to provide knowledge using information education communication (IEC) materials. Also, the local government should plan a programme for primary health workers where they get trained, update their knowledge and develop capacity building about COVID-19.

The present study found that the majority 360/400 (90%) of subjects had heard of corona virus infection. Regarding source of information, 100% and 80% subjects, the source of information was television and peer group respectively followed by print media (60%) Table2. When asked about cause of corona virus infection, majority (80%) considered respiratory (droplets) route as the most common cause. The electronic media is commonly used, so this media can be used to spread the message regarding the awareness and ways of prevention of corona virus infection.

COVID-19 is very a contagious disease among humans and it spreads through coughing or sneezing by infected person. Awareness regarding common mode of transmission of corona virus infection, 90% subjects said that coughing and sneezing is the most common mode of transmission while nearly three fourth (70%) said that mass gathering of people is an important common mode of transmission.

Prevention of transmission of this infection was also studied and the study revealed that majority (90%) of participants said that wearing of face mask can prevent transmission of corona virus infection while 80% of subjects said that staying at home is the only way to prevent this infection. However, 60% subjects said that avoiding crowded place can be helpful in the prevention of transmission. Singh et al studied that use of face mask can prevent the infection in 56% subjects.<sup>11</sup>

Seale et al reported that regular hand washing, cough etiquette (covering mouth and nose when coughing or sneezing), and avoiding the sick are the good strategies to prevent becoming infected with pandemic influenza. <sup>12</sup> About knowledge of most common symptom, 80% and

70% subjects said that fever and cough are most common symptoms while 60% and 50% subjects said that running nose and throat pain respectively are the common symptoms. Prevention is considered as the most appropriate measure to contain the COVID-19 pandemic. The central or state governments should provide each and every correct information about COVID-19 infection to the community.

#### Limitation

Due to limitation of time, the study was carried out in urban slum, for wider representation it can be conducted in rural area too.

### **CONCLUSION**

The study concluded that majority of subjects had heard about COVID-19 and majority knew the correct mode of transmission. Most of the study subjects knew that wearing face mask and frequently hand washing are the only preventive measures available against COVID-19. Since COVID-19 is considered as an emerging disease and it spreads very fast, so the simple preventive measures at an early stage will be very useful in containment of the disease which can only be achieved by raising the level of awareness and knowledge among community. The study recommends that Government of India should use the electronic media like social media, twitter account, Whats App, television, radio etc. and make24x7 helpline number more effectively for generating the knowledge about COVID-19 among the public.

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