Research Article

Perceptions and Practices of the Adult Population in Response to SARS-CoV-2 Pandemic in India

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I N F O

A B S T R A C T

Study Objective: To find the perceptions and behaviours of the general public in response to the novel coronavirus pandemic in India.

Design: An online survey was conducted during lockdown period of coronavirus pandemic.

Participants: 304 respondents participated in the survey during the lockdown period of 21 days.

Main Outcome Measures: Perceptions and behaviours of adult population to coronavirus infections and its prevention.

Result: The mean age of the respondents was 38.38±12.34 years. Most of the respondents believed that coronavirus was a contagious infection could be transmitted via direct body contact and droplets and majority 285 (93.8%) of the respondents were aware that coronavirus is a contagious infection. Nonetheless, perceived chance of infection was found by 284 (93.4%) respondents due to public transport, mass gatherings or crowds and through contaminated food or takeaways in only 94 (30.9%). Perceived efficacy of preventive measures was social distancing (77.3%), hand washing (75.3%) and wearing a mask (48%). It is interesting to note that some people were taking multivitamin, Unani immune modulator, homoeopathic and Hydroxychloroquine medicines as prophylaxis.

Conclusion: Coronavirus related perceptions and behaviours are crucial for designing preventive measures. Knowledge about the pandemic was high but misconceptions were also existed in the study group which need further improvement of appropriate IEC activities among Indian population.

Keywords: Corona Virus, Covid 19, Pandemic, KAP, Mask, Social Distancing

11

Nazli T et al.
Epidem. Int. 2020; 5(2)

Introduction

SARS-CoV-2 is the seventh coronavirus known to infect humans, and the third zoonotic virus after SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV). The virus however spreads faster than its two ancestors; SARS-CoV and (MERS-CoV), but has lower fatality of 2-3%. The outbreak of the novel coronavirus (SARS-CoV-2) in China occurred in the city of Wuhan on December 2019 when cluster of pneumonia cases were detected with previously unknown viruses now named novel coronavirus disease 2019 (COVID-19). Rapidly spreading outbreak of COVID-19 when involved 26 countries then WHO declared a public health emergency of international concern on 30 Jan, 2020.

According to Worldometer, the global tally was nearly at 1.85 million, the worldwide death toll was at 114,253. The first case of the novel coronavirus pandemic in India was reported on 30 January 2020 and as on April 13, 2020 morning, India has had 9,205 cases positive and 331 deaths to the coronavirus.[1]

The disease is mild in most people; in some (usually the elderly and those with comorbid conditions, it may progress to pneumonia, Acute Respiratory Distress Syndrome (ARDS) and multi organ dysfunction. Extensive comprehensive measures were put in place and enforced, both at hospital and community level to contain the diseases.

Knowledge, attitudes, behaviours and practice studies are used to investigate patterns of community responses to the development and prevention of a disease epidemic. Coronavirus is a new disease and the interaction of public attitudes, belief, and behaviours would determine the effectiveness of the prevention of the disease.

Methods

The study aims to report the findings on attitudes, knowledge, and behaviours of Indian population in response to the public health crisis during the corona pandemic. The study population includes adults from different parts of the country. An online survey was conducted during lockdown period from March 2020 to April 2020 using a structured questionnaire with both open and closed ended items having 3 sections. In the first section the consent was obtained from all respondents when they choose option 'yes' to proceed for taking the survey. Second section having eight questions related with important demographic details of the respondents such as age, gender, native place, monthly family income, work, educational level, and marital status, were sought from the respondents and the third section related with attitude, perception and behaviours about coronavirus consisting of 14 questions.

After data collection it was double entered in Microsoft excel sheet and validated. A clean database was generated and analysed in SPSS (version 23). Data were presented by using frequency tables. Distribution of study population according to age, gender, income, education, profession, socioeconomic status and awareness about coronavirus were analysed.

Result

Socio-Demographic Details

Of the 304 adult population who participated in the surveys, there were slightly more men 162 (53.3%) than women 142 (46.7%). The mean age of the respondents 38.38±12.34 years ranged from 15-83 years. Respondents of age less than 30, 31-45, 46-60 and above 60 years of age accounted for 30.3%, 41.8%, 23.4% respectively and only a few 4.6% of respondents were aged above 60 years. Most of the respondents (213; 70.1%) were married, while single and divorced/separated/widowed accounted for 85(28%) and 6 (2%), respectively.

The education level of the respondents was good, most of them 188 (61.8%) had received education upto post graduate degree level, 54 (17.8%) were educated upto UG (bachelor's degree) level, 22 (7.2%) completed senior secondary school level followed 19 (6.3%) who were educated upto high school level only 5 (1.6%) respondents have education level less than primary school level. Occupation status of the respondents revealed that government employees accounted for 119 (39.1%), non-government employee 68 (22.4%), students 44(14.5%), self employed 36 (11.8%), homemakers 12 (3.9%), unemployed able to work 11 (3.6%), retired 9 (3%), unemployed unable to work 1 (0.3%), and 3 (1%) respondents refused to give answer to this question. The means of socio-economic status of the respondents was 19.98±11.77, which revealed that upper middle class accounted for 234 (77.7%), lower middle class for 49 (16.3%), upper class for 11 (3.7%) and only 7 (2.3%) belonged to upper lower class (Table 1).

Table 1.Socio-Demographic Table

Variables	Frequency	Percentage %
Gender		
Female	142	46.7
Male	162	53.3
Age		
<=30	92	30.3
31-45	127	41.8
46-60	71	23.4
>60	14	4.6
Marital Status		
Divorced, Separated or Widowed	6	2.0

Nazli T et al.
Epidem. Int. 2020; 5(2)

12

Married	213	70.1
Never married	85	28.0
Socio-economic status		
Lower middle	49	16.3
Upper	11	3.7
Upper lower	7	2.3
Upper middle	234	77.7
Education		
No formal schooling	1	0.3
Less than primary school	4	1.3
Primary school completed	8	2.6
Secondary school completed	7	2.3
High school completed	19	6.3
Senior secondary school completed	22	7.2
Under graduate completed	54	17.8
Post graduate degree	188	61.8
Refused	1	0.3
Occupation		
Government employee	119	39.1
Non-government employee	68	22.4
Self-employed	36	11.8
Non-paid	1	0.3
Student	44	14.5
Homemaker	12	3.9
Retired	9	3.0
Unemployed (able to work)	11	3.6
Unemployed (unable to work)	1	0.3
Refused	3	1.0

Attitudes related to Wearing a Mask

The respondents were asked whether face mask would be useful for preventing coronavirus infection, majority (n=242; 79.6%) of respondents said "yes" and fewer respondents (n=21; 6.9%) had the view that wearing a face mask is not useful in preventing coronavirus infection, however, (n=40; 13.2%) respondents answered 'may be' and only (n=1; 0.3%) respondent said 'don't know' to this question. In this study, (n=231; 76%) respondents were using facemask and (n=73; 24%) respondents were not using the facemask during the survey.

When asked about the expenses the respondents spent so far to buy face masks, the mean cost of face mask came out to be 616.7±869.7 INR. However, (n=67; 22%) respondents replied that they are using but did not spend a single penny as it's a government supply.

Other responses elicited from the survey included type or variety of face mask and out of 231 respondents, (n=84; 36.4%) were using disposable surgical face mask, (n=73; 31.6%) N-95 respirators, (n=46; 19.9%) simple cloth mask, and (n=28; 12.1%) black anti-smoke face mask on their face. Next question was about how frequently the respondents are changing their facemask, (n=64; 27.7%) respondents changed mask every day, (n=29; 12.6%) changed face mask every 6 hourly, (n=37; 16.0%) changed every week, (n=6; 2.6%) every 2 week, (n=64; 27.7%) reuse after washing, (n=1; 0.4%) use face mask daily for one hour, (n=4; 1.7%) use occasionally, (n=7; 3.0%) dispose off face mask when it gets smelly or dirty, and there are (n=19; 8.2 %) respondents which chooses option 'don't know' to answer this question. When asked about the disposal of their face mask after use, (n=82; 41.6%) respondents disposed of their facemask after use in medical waste bins, (n=79; 40.1%) in regular bins, (n=32; 16.2%) were still using and not discarded the face mask at the time of survey, (n=2; 1.0%) respondents incinerate it and (n=2; 1.0%) respondents threw it openly on the road (Table 2).

Attitude about Containment Measures

As summarised in table 3, most of the respondents were aware that coronavirus is a contagious infection and it is transmitted via direct body contact with coronavirus positive patients or through respiratory droplets (n=285; 93.8%). Majority of the respondents (n=284; 93.4%) believed that the disease spread could be stopped if they follow social distancing and avoid public transport, mass gatherings, festivals, concerts or any crowded places. However, (n=10; 3.3%) respondents disagree with this, (n=6; 2%) were doubtful and only (n=4; 1.3%) respondents opted option 'don't know' to this question. When the respondents were also asked about the thought of doing mandatory screening of passengers on airports to stop the spread of corona virus, (n=196; 64.5%) respondents believe that they are satisfied with the idea of doing it, (n=65; 21.4%) thought it not satisfactory, (n=22; 7.2%) were doubtful and (n=21; 6.9%) respondents don't know about this answer.

Perceived Efficacy of Various Measures of Prevention

Majority of respondents (n=298; 98.03%) have brought change in their lifestyle. Respondents perceiving 'wearing a mask' (n=146; 48%); 'frequent hand washing' (n=229;75.3%); 'Social distancing' (n=235;77.3); 'increase use of citrus fruits' (n=77; 25.3%); 'eating more ginger and garlic' (n=63; 20.7%); 'avoid consuming meats or eggs' (n=62; 20.4%); and 'taking immune boosters' (n=44; 14.5%) as effective means of preventive measure. Some respondents on the other hand believe that hand sanitizers (n=18; 5.9%) and

13

Nazli T et al.
Epidem. Int. 2020; 5(2)

yoga/exercise (n=4; 1.3%) were also some of the measures that could be efficacious in preventing coronavirus. The results are shown in table 4.

Table 2.Knowledge and practices of face mask during Covid 19 pandemic in India

	Frequency	Percentage %
Are you using any face mask? (n=304)		
No	73	24.0
Yes	231	76.0
Are face mask useful for preventing coronavirus infection? (n=304)		
Don't know	1	0.3
May be	40	13.2
No	21	6.9
Yes	242	79.6
What kind of face mask do you use on your face? (n=231)		
Surgical face mask (disposable)	84	36.4
N-95	73	31.6
Black anti-smoke face mask	28	12.1
Cloth face mask	46	19.9
How frequently you are changing the facemask? (n=231)		
Change every day	64	27.7
Change every 6 hourly	29	12.6
Change every week	37	16
Use every 2 week	6	2.6
Wash and reuse	64	27.7
Don't Know	19	8.2
Others		
Still using occasionally	4	1.7
Used only once for one hour and not dispose	1	0.4
When they get smelly or dirty, I throw them	7	3.0
Where do you dispose of your face mask after use? (n=197)		
Openly	2	1.0
Regular bin	79	40.1
Medical waste bins (yellow bins in hospitals)	82	41.6
Not disposed yet	32	16.2
Burn with fire	2	1.0

Table 3.Containment Measures

	Frequency	Percentage %
Do you know that coronavirus is a contagious infection?		
Don't know	5	1.6
May be	8	2.6
No	6	2.0
Yes	285	93.8
Do you need to avoid public transport, mass gatherings, festivals, concerts or places with crowds?		
Don't know	4	1.3
May be	6	2.0
No	10	3.3
Yes	284	93.4
Are you satisfied with mandatory screening of passengers on airports to stop the spread of corona virus?		
Don't know	21	6.9
May be	22	7.2
No	65	21.4
Yes	196	64.5

Table 4.Have you done any change in your lifestyle?

	Frequency	Percentage %
Start Putting mask	146	48
Wash hands more frequently	229	75.3
Social distancing	235	77.3
Start taking immune booster medicines	44	14.5
Stopped eating meat/egg	62	20.4
Using more ginger and garlic	63	20.7
Using more citrus fruits	77	25.3
Hand sanitizer	18	5.9
Exercise/ Yoga	4	1.3
Nothing	6	2

Perceived Susceptibility of Contracting Coronavirus

Twenty one percentages of respondents believing that coronavirus could be transmitted via Chinese products, mails and parcels from China or other affected areas touched by patients, whereas majority of the respondents (n=146; 48%) believed that virus could not be transmitted

Nazli T et al.
Epidem. Int. 2020; 5(2)

14

through these means; (n=64; 21.1%) were doubtful about it and answered 'may be' and very few; (n=29; 9.5%) answered 'don't know' to this question. More respondents (n=148; 48.7%) were less likely to be concerned about contracting the virus via pets as compared to those who believed that pets can spread infection (n=66; 21.7%). Likewise, the number of respondents (n=94; 30.9%) who feared that they would contract the virus by consuming infected food or takeaway are slightly less than those (n=108; 35.5%) who believed converse to this question Table 5.

Table 5.Perception of people regarding spread of coronavirus infection

	Frequency	Percentage %
Do you get corona virus from Chinese products, mails and parcels from China or other affected areas?		
Don't know	29	9.5
May be	64	21.1
No	146	48.0
Yes	65	21.4
Do you think pets can spread corona virus?		
Don't know	23	7.6
May be	67	22.0
No	148	48.7
Yes	66	21.7
Do you get corona virus from food or takeaways?		
Don't know	15	4.9
May be	87	28.6
No	108	35.5
Yes	94	30.9

Attitudes related to Preventive Medication for Coronavirus Infection

Most of the respondents (n=238; 77%) were not taking any kind of medicines to protect themselves from coronavirus infection though, only a small percentage of the respondents were taking some medications as prophylaxis; (n=32; 10.4%) respondents were taking allopathic multivitamin, (n=5; 1.6%) on HCQs, (n=14; 4.5%) on Unani immune boosters, (n=10; 3.2%) on homeopathic immune boosters, (n=9; 2.9%) on ayurvedic immune boosters and only single respondent reported use of Cow urine as a preventive measure (Table 6).

Table 6.Are you taking any medicine for coronavirus infection as a preventive measure?

	Frequency	Percentage %
Not taking any medicine	238	77
Allopathic multi-vitamins	32	10.4
Unani immune booster	14	4.5
Ayurvedic immune booster	9	2.9
Homeopathic immune booster	10	3.2
HCQS 400	5	1.6
Cow urine	1	0.3

Discussion

This study addresses a major health problem now a SARS CoV 2 pandemic in India. The awareness campaign conducted by health ministry on health care providers is going on for effective education of different communities all over India which could have affected the people's perceptions. In this study majority of the respondents were aware that this disease is contagious and can be contracted when someone come in close contact with covid-19 patient or even by touching. The CDC also says that virus of COVID-19 is spread mainly from person to person, via respiratory droplets produced when an infected person coughs or sneezes, possibly be inhaled into the lungs of people who are nearby within about 6 feet.[2]

In an online survey conducted by news-18 across India on 40,700 people aimed to examine the KAP about coronavirus.[3] Around 76% of respondents from across India said that they maintained proper self-hygiene and ensure a clean environment, avoided crowded places and used a face mask while travelling which is quite similar to our study results in which 79.6% respondents were aware that facemask are useful for preventing coronavirus infection and 77.3% were practicing social distancing. Maintaining distance of at least 1 metre (3 feet) as per WHO or at least 6 feet (2 meters) as per CDC between yourself and anyone who is coughing or sneezing so that you can't breathe in the droplets, including the COVID-19 virus if the person coughing has the disease may be helpful.[4,5]

As far as the change in eating habits of the study respondents are concerned, 20.7% of the them stopped eating meat and its product including eggs. However, in another study as many as 6.1 % of the respondents thought eating eggs or chicken made people more vulnerable to COVID-19.[3] WHO says that coronaviruses are thermolabile, which means that they are susceptible to normal cooking temperatures (70°C);

15

Nazli T et al.
Epidem. Int. 2020; 5(2)

raw meat, raw milk or raw animal organs should be handled with care to avoid cross-contamination with uncooked foods. Therefore, as a general rule, the consumption of raw or undercooked animal products should be avoided.[6] In our study, 20.7% respondents started including more than usual ginger and garlic with their daily meals however, there is no evidence from the current outbreak that eating garlic has protected people from the new coronavirus.[7] Only one of the respondents reported use of cow urine as a preventive measure in our study however, 5.7% thought that the disease could be cured by consuming cow urine (goumutra) in a survey.[3]

Currently there is no evidence to support transmission of COVID-19 associated with imported goods but 21.4% of the study respondents thought that it can spread through parcels coming from China. According to WHO coronaviruses is thought to be spread most often by respiratory droplets although it can survive for a short period on some surfaces, it is unlikely to be spread from products or packaging that are shipped over a period of days or weeks at ambient temperatures.[7]

People are following the government instructions by avoiding public transport, mass gathering and festivals but 21% of people observed that government efforts in relation to strict screening of passengers at port was not satisfactory. Seventy six percent of the participants reported use of face mask and 79.6% reported using face mask is one of the best measures to control spread of coronavirus infection. There were various practices of frequency and disposal of face mask which could be lack of understanding of clear-cut guidelines issued by the government. WHO recommended that a healthy person only need to wear a mask if he is taking care of a person with suspected 2019-nCoV infection or if he is coughing or sneezing.[8] In light of the new data CDC recommends that people wear a cloth face covering in the community setting in addition to social distancing, frequent hand cleaning and other everyday preventive actions. A cloth face covering is not intended to protect the wearer, but may prevent the spread of virus from the wearer to others. This would be especially important in the event that someone is infected but does not have symptoms.[9] Large number of people spent more than Rs. 600 per mask which had increased their financial burden of prevention.

Likewise, the study respondents were taking mostly allopathic multi-vitamins (9.8%), immune-boosters; Unani (4.6%), Ayurvedic (3.3%) and homeopathic (3.3%) and very few were taking Hydroxychloroquine (1.6%). To date, there is currently no specific medicine recommended or approved to prevent or treat the new coronavirus (2019-nCoV), although some have been tried.[7] One such drug is Hydroxychloroquine (HCQS) used in malaria and certain inflammatory conditions,

which now reported that it can inhibit the growth of severe acute respiratory syndrome coronavirus (SARS-CoV-2). HCQS was recommended by the Indian Council of Medical Research for high-risk healthcare workers dealing with Covid-19 patients.[10] Hydroxy-chloroquine is found to be effective against coronavirus in laboratory studies and in-vivo studies. Its use in prophylaxis is derived from the available evidence of benefit as treatment and supported by preclinical data," the advisory said.[11] But a Chinese in vitro study has demonstrated that HCQS is more potent than Chloroquine (CQ) in inhibiting SARS-CoV-2 in vitro.[12] The only viral disease where chloroquine was effective so far before COVID-19 era was chronic hepatitis C. Therefore, the results of chloroquine and HCQ so far done against COVID-19, more promising than previous trial in other viral diseases. Moreover, these drugs are of low cost, reasonably safe, and widely available in countries where malaria is endemic.[13]

When we searched with key terms 'COVID 19' and 'coronavirus' on CTRI we found only 2 studies one on "Knowledge, attitude and fear of COVID-19 in Bangladesh" and another entitled "Study of the effect of Chloroquine in addition to standard therapy in COVID-19 patients".[14] However, at database ClinicalTrial.gov we found 120 studies on corona virus and 188 trials with covid 19 key terms having status recruiting in which we found only one study from India, entitled "A Prospective, Longitudinal, Observational Study of Healthcare Workers and the General Population to Watch for Flu-like Symptoms in Suspicion of COVID 19" and not a single study on HQCs.[15]

Although evidence of chloroquine and HCQ is limited (based on the experimental data and only two small human trials), considering the potentially favourable benefit-risk balance of chloroquine and HCQ in absence of any other valid treatment option, we believe that such treatment could be useful in the current context of pandemic COVID-19 outbreak.

Recently, researchers in Australia at Monash University in Melbourne, found that a head lice drug 'Ivermectin' has successfully quickly prevented replication of SARS-CoV-2 and killed the novel coronavirus within 48 hours in just a single dose of Ivermectin in a petri dish which has also shown to be effective against other viruses including HIV, Dengue, influenza and Zika virus in vitro. Ivermectin therefore warrants further investigation for possible benefits in humans.[16]

Conclusion

Knowledge about corona pandemic and its infectivity is good in the study population. There are various suitable attitude and practices for prevention and control of corona infection but certain proportion have negative and wrong

Nazli T et al.
Epidem. Int. 2020; 5(2)

16

practices which can be removed through strategic IEC activities in general public.

Conflicts of Interest: None

References

1. Worldometer [cited 13 April 2020]. Available from: https://www.worldometers.info/coronavirus/.

2. 65% Indians Think Covid-19 Won't Affect India as it's a Warm Country, Survey Reveals [Internet]. News18. 2020 [cited 12 April 2020]. Available from: https://www.news18.com/news/buzz/65-indians-think-covid-19-wont-affect-india-as-its-a-warm-country-survey-reveals-2544649.html.

3. Advice for public [Internet]. Who.int. 2020 [cited 12 April 2020]. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public.

4. Coronavirus Disease 2019 (COVID-19) [Internet]. Centers for Disease Control and Prevention. 2020 [cited 12 April 2020]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html.

5. Who.int. 2020 [cited 12 April 2020]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200221-sitrep-32-covid-19.pdf?sfvrsn=4802d089_2.

6. Myth busters [Internet]. Who.int. 2020 [cited 12 April 2020]. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters.

7. Advice for public [Internet]. Who.int. 2020 [cited 12 April 2020]. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public.

8. Coronavirus Disease 2019 (COVID-19) [Internet]. Centers for Disease Control and Prevention. 2020 [cited 12 April 2020]. Available from: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html.

9. Rajagopal, D. 2020. Covid-19: Forget Healing Touch, Pharma Gets It Rough. [online] The Economic Times. Available at: <https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/covid-19-forget-healing-touch-pharma-gets-it-rough/articleshow/74820419.cms> [Accessed 12 April 2020].

10. The Economic Times. 2020. Coronavirus: ICMR Recommends Hydroxychloroquine For High-Risk Population. [online] Available at: <https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/indias-covid-task-force-recommends-hydroxychloroquine-for-high-risk-patients-with-strict-riders/articleshow/74774540.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst> [Accessed 12 April 2020].

11. Yao X, Ye F, Zhang M, Cui C, Huang B, Niu P et al. In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). *Clinical Infectious Diseases* 2020.

12. Singh A, Singh A, Shaikh A, Singh R, Misra A. Chloroquine and hydroxychloroquine in the treatment of COVID-19 with or without diabetes: A systematic search and a narrative review with a special reference to India and other developing countries. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2020; 14(3): 241-246.

13. Clinical Trials Registry - India (CTRI) [Internet]. Ctri.nic.in. 2020 [cited 12 April 2020]. Available from: http://ctri.nic.in/Clinicaltrials/login.php.

14. ClinicalTrials.gov [Internet]. Clinicaltrials.gov. 2020 [cited 12 April 2020]. Available from: https://clinicaltrials.gov/.

15. CDC Works 24/7 [Internet]. Centers for Disease Control and Prevention. 2020 [cited 12 April 2020]. Available from: https://www.cdc.gov/.

16. Caly L, Druce JD, Catton MG, Jans DA, Wagstaff KM. The FDA-approved Drug Ivermectin inhibits the replication of SARS-CoV-2 in vitro, Antiviral Research, https://doi.org/10.1016/j.antiviral.2020.104787.