

ORIGINAL ARTICLE

Awareness, Practice and Level of Anxiety using Coronavirus Anxiety Scale among the Indian Population regarding COVID -19 Pandemic

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Abstract	Introduction	Methodology	Results	Conclusion	References	Citation	Tables / Figures
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Citation

Agarwal T, Bajpai PK, Jaiswal K, Kumar S, Verma S, Shukla SK. Awareness, Practice and Level of Anxiety using Coronavirus Anxiety Scale among the Indian Population regarding COVID -19 Pandemic. Indian J Comm Health. 2022;34(2):248-253. <https://doi.org/10.47203/IJCH.2022.v34i02.019>

Source of Funding: Nil Conflict of Interest: None declared

Article Cycle

Received: 29/03/2022; Revision: 15/05/2022; Accepted: 05/06/2022; Published: 30/06/2022

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Abstract

Abstract: The most important aspect of Public Health Emergency Preparedness (PHEP) involves the circulation of trustworthy and accurate information in the public health interest domain. Strict stringency measures such as nationwide lockdown impacted people's mental health. Hence, this study was planned to assess the knowledge, practice, and anxiety among the Indian population about the ongoing pandemic in the initial phase. **Methods:** A web-based cross-sectional study was conducted between August 1, 2020, to October 5, 2020. Coronavirus Anxiety Scale was used to determine dysfunctional anxiety. **Results:** Among 553 participants, 73.6% had overall good knowledge of COVID-19 with mean correct score of 6.9±1.1. Majority of participants (97%) wore mask regularly, and 93% of respondents regularly washed their hands with soap and water. Only 14 participants scored ≥9 on CAS, suggesting probable cases of dysfunctional anxiety associated with the COVID-19 crisis. **Conclusion:** The knowledge and practices of citizens in a nation reflect their preparedness and ability to deal with a pandemic of such proportion. Good knowledge translates to good practices and therefore reduces anxiety among the population. It is deemed necessary that people's knowledge and habits, including the mental impact, be accessed at periodic intervals to track their adaptation to pandemics over time.

Keywords

Anxiety; COVID-19; Coronavirus Anxiety; Mental health; Pandemic; Public Health

Introduction

Novel coronavirus was first isolated by the Chinese authorities on January 7, 2020, and it was declared as public health emergency of international concern on January 30 2020.(1) Without any definitive cure for the disease, taking preventive measures such as wearing a mask, regular washing of hands, practice social distancing and avoiding any crowd accumulation and close interactions in public places has helped curb the spread of disease and reduced the associated morbidity and mortality. Initially the rise in number of cases was at a low

rate in the country, which may be attributed to several government policies and implementation of a nationwide lockdown at an early stage of the pandemic. The decision of nationwide lockdown within such short-stipulated amount of time is bound to have mental impacts as well. People had to find coping mechanisms to adjust with the new modified dynamics of everyday lives. The people who were in quarantine areas or in home isolation may experience boredom, anger, and loneliness along with-it symptoms of the viral infection such as cough and fever may also cause worsening cognitive distress and anxiety among people due to the fear of contracting the COVID-

19.(2) To mitigate the ramifications of pandemic, it requires good knowledge and adherence to control measure in regard to the ongoing health emergency along with the mental health assessment of citizens.

Aims & Objectives

To assess the knowledge, practice and anxiety associated with COVID-19 among the Indian population during the initial timeline of the pandemic.

Material & Methods

Settings and Design: A web-based cross-sectional survey about Awareness, Practice, and Anxiety related to COVID-19 among the Indian population was conducted between 1, August, 2020 to 31, October, 2020. For the purpose of recruiting the participants, snowball sampling strategy was employed. After reviewing the available literature, a pre-tested, semi-structured, self-administered questionnaire was developed. The questionnaire was executed using google forms as a platform and was then disseminated along with the link through various social media and messaging apps. The link also contained a message informing the participants about the purpose and objectives of the survey and a request to forward the questionnaire to their contacts. The google form was designed in a manner that an informed consent was obtained before commencing the survey. On the assumption that 50% of population possessed the knowledge of COVID-19 and 95% confidence interval with error margin of 0.05, a sample size of 385 was computed. Total of 583 responses were received of which, 553 were recruited in the study. Responses from participants below 18 years of age were excluded from the study. It was made mandatory to answer every question and the type of response to each question was indicated against it.

Study Tool: The data collection tool contained five sections; Section A, was about the socio-demographic details of the participants along with their place of residence and healthcare worker status. Knowledge of the participants regarding COVID-19 was assessed under Section B comprising of eight questions and practice regarding COVID-19 in Section C consisting of seven questions. Both Section A and B combined had 15 questions which were developed from COVID-19 and IPC (Infection, Prevention and control) overview compiled by the Centres of Disease Control and Prevention (CDC).(3,4,5)The overall Correct Score for knowledge of participants was categorised using the modified Blooms cut off point. In this study, the total score of 8 questions ranging from 80% to 100% with score of 6.4-8 points was categorized as good, score range of 50-79% (4.8- 6.39 points) was labelled as moderate and poor when the score was less than 50% having < 4.79 points. The last section comprised of Coronavirus Anxiety Scale (CAS), which is a brief mental health screener comprising of 5- item scale to identify probable cases of dysfunctional anxiety associated with the COVID-19 crisis. The CAS discriminates

between persons with and without dysfunctional anxiety using an optimized cut score of ≥ 9 (90% sensitivity and 85% specificity).(6)

Ethical Consideration: The ethical clearance was obtained from the Institutional Ethics Committee (ID-93 /2020-21) before the commencement of the study. Participation was voluntary based and informed consent was acquired before the commencement of survey. All measures were taken to maintain the anonymity of participants. Statistical analysis used: The data were imported into Microsoft Excel version 2019 from the google spreadsheet. Data were then coded and analysed using SPSS version 24.0, IBM Inc. Chicago, USA software. Descriptive analysis was performed to determine the frequencies and proportion of continuous variables. Pie charts were created to illustrate different practices regarding COVID-19.

Results

An anonymous online survey was conducted among the Indian Population regarding Knowledge, practice, and level of anxiety during the COVID-19 pandemic. (Table 1), shows the distribution of participants; among the respondents, 59 % (n=327) were males and 40.9% (n=226) were females, making up 553 study participants. Majority of respondents, i.e., 290 (52.4%) belonged to the age group 21- 30 years of which 173 were males, and 117 were females, followed by 94 (17%) participants in each from <20 years and 31-40 years age groups respectively. The mean age of the participants was 29.12 ± 10.2 years. Majority of the respondents were students 269 (48.6%) and approximately 84% of the participants were post graduate and above in terms of qualification. A total of 441 (79.7%) of the responders resided with their families at the time of survey during the pandemic and only 134 (24.2%) of the study participants were healthcare workers. Total of eight questions were asked to assess the knowledge of study participants (Table 2).

Overall performance of the respondents was good as evident by mean correct score of 6.9 ± 1.1 , and median score of 7.0 out of a possible highest score of 8.0. Majority of the participants gave correct responses when asked about the symptoms (97.8%), at high-risk population (93.3%), transmission routes (97.5%) and availability of definitive treatment and vaccine (100%) at the time of survey respectively. Surprisingly, 89% of the participants gave incorrect response about the quarantine time due to COVID-19, and only 71.5% knew about the recommended minimum time for handwashing with soap and water. However, 83% responded correctly about symptomless people transmitting COVID-19 virus to others and 84.3% knew that eating or contacting non vegetarian food would not result in infection by COVID-19 virus.

According to the Bloom's cut off Score (Table 3), 73.6% (n=407) of the study participants performed good, whereas 22.9% (n=127) and 3.5% (n=19) performed

moderately and poor respectively, for the knowledge regarding COVID-19.

As per (Table 4), only 14 participants scored ≥ 9 , suggestive of probable cases of having dysfunctional anxiety associated with COVID-19 crisis whereas majority of the participants (n=530) had score lower than 9. A considerable number of respondents (97%) wore mask regularly and 93% of respondents regularly washed their hands with soap and water. About 52% of the respondents disinfected surfaces of personal objects and places, whereas 20%, 11%, 15% and 2% disinfected it twice daily, once a week, rarely and never respectively (Figure 1).

As shown in (Figure 2), 54% always maintained social distancing of 1-1.5 m from others and 33% practiced it often, with 11% doing it sometimes and 2% rarely practiced social distancing. Only 40% of the respondents avoided to touch their face and eyes with unwashed hands, 33% did it often and 16% sometimes, 8% rarely and 3% never avoided touching their face and eyes with unwashed hands (Figure 3).

Almost 51% of the participants opened windows more frequently than usual after COVID-19 and 55% had reduced air conditioner usage at home and/or car due to the risk of COVID-19 infection.

Discussion

COVID-19 has made the headlines ever since it was first reported in December 2019 in China and subsequently became the highlight of almost every individual's lives all across the globe. During unprecedented situations like a pandemic of such measure, the dissemination of accurate and reliable information is of paramount importance. It is necessary to evaluate the knowledge and practices regarding pandemics as it reflects the preparedness and response capacity of the population in a country. Every public health emergency faces new communication challenges; Challenges such as communicating uncertainty and risk while addressing public concern can lead to a range of outcomes, including a loss of trust and reputation, economic impacts, and in the worst case, a loss of lives.(7) The comparative analysis of the Middle East Respiratory Syndrome (MERS) outbreak between Saudi Arabia and South Korea showed that access to information was crucial to better control of the epidemic, while the lack of public knowledge further aggravated it.(8) As per our research findings, the overall knowledge of people about the disease, modes of transmission, prevention measure was good (73.6%) but was lower than the results obtained by Zhong BL et al (81%) (9) in the Chinese population as well as in the Iranian population (90%) as cited by Erfani A et al; (10) despite the fact that almost 85% of our participants were post graduate and above. Negative association between gender, non-healthcare worker and knowledge was found by Erfani A et al (10) whereas, our study results produced no such association. In our study, the most frequently identified

gap in knowledge among participants was related to quarantine time required regarding COVID-19, as 89% of participants gave incorrect response which was in contrast to other studies. (9,11) This discrepancy in the knowledge probably occurred due to the new developments made in research as the time passed by leading to confusion among people. Good knowledge corresponds to better practice habits. In our study, the participants showed good hygiene and preventive practices as 97% wore masks regularly, 93% washed their hands with soap and water regularly, which were almost similar to the practice habits published in another research. (9,11,12) On the contrary only 54% practiced social distancing measure at all times which was lower than the similar study conducted by Dkhar AS et al.(13) The survey period difference between the two studies could explain the incongruity as our study was conducted when the lockdown measure had begun to ease whereas the lockdown was still imposed at the time of survey by Dkhar AS et al. (13) Mental health is another major issue that is becoming critical in managing the COVID-19 pandemic. Social chaos and arbitrary relationship are destroyed due to panic and fear, thus superseding evidence and psychologically, change in environment makes us feel unsafe, scared, and anxious.(14) During the early phase of the manifestation of Severe Acute Respiratory Syndrome (SARS), several psychiatric comorbidities such as depression, panic attack, anxiety, psychomotor excitement, suicidality, delirium, and psychotic symptoms were reported.(15) The uncertainty of end to this pandemic positions the people to be inclined towards the panic and worry regarding their own health as well the health of their loved ones. Therefore, the place of residence at the time of pandemic plays a pivotal role in influencing people's mental health. Majority of our participants (79.7%) resided with their families during the pandemic and only 14 respondents scored ≥ 9 on the Coronavirus Anxiety Scale (CAS) and were identified as probable cases of dysfunctional anxiety associated with the COVID-19 crisis. Elevated CAS scores were found to be associated with coronavirus diagnosis, impairment, alcohol/drug coping, negative religious coping, extreme hopelessness, suicidal ideation, as well as social attitudes.(9) This scale has been validated in USA,(6) Turkey, (16) Portugal (17) and Brazil (18) so far to identify dysfunctional anxiety associated with Coronavirus. Since this scale contains only 5 items, it is easy to administer and helps clinicians quickly distinguish people suffering from anxiety due to COVID-19. Further research into validating the CAS scale for the Indian population is recommended.

Conclusion

Effective Risk communication helps deliver complex scientific knowledge in a manner that is understood by, accessible to, and trusted by populations and communities. Although the awareness and practices of the people were good in this study, but a survey of such

nature, when conducted periodically, exhibits variation in the consistency of people's evolving knowledge which indirectly impacts the practice and anxiety levels of the population amidst the unprecedented times of pandemic in this era. The emphasis on mental health should be an integral part of risk communication to avoid a different pandemic that looms in the future.

Recommendation

Periodic evaluation of population's knowledge, practice and mental health status should be undertaken so that the pandemic along with its mental health repercussions can be managed effectively as per requirement. Modifications in risk communications can be undertaken based on the outcome of these surveys.

Limitation of the study

Due to the restrictions imposed by the pandemic, this study was conducted online, which comes with its own implications. Selection bias is one such implication as selective representative of the population of those with access to the Internet and smartphones were able to participate in the survey. It excludes the population residing in rural areas without such amenities. The possibility of responders referring to the Internet for answers exists with such study design, thus leading to information bias. Another drawback is that due to the small sample size, this research results cannot be generalized to the entire population of our country.

Relevance of the study

Assessment of knowledge, practice, and subsequent anxiety levels are vital to help plan, implement and evaluate the control and health preparedness measures about the pandemic. These studies facilitate understanding factors associated with lacunas posed in knowledge gaps, behavioral patterns, and deranged mental state of the population under unusual circumstances.

Authors Contribution

AT, JK contributed for concept and study design; AT, BPK contributed in drafting article; VS contributed for acquisition of data; SSK contributed in data analysis and its interpretation; KS critically revised the article for content

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Tables

TABLE 1 DISTRIBUTION OF THE STUDY PARTICIPANTS (N= 553)

Variable	Categories	Male (N=327) (59%)	Female (N=226) (40.9%)	Total (N=553)
Age (In Years)	< 20	63	31	94 (17%)†
	21-30	173	117	290 (52.4%)†
	31-40	55	39	94 (17%)†
	41-50	21	29	50 (9%)†
	> 50	15	10	25 (4.5%)†
Mean Age ± SDyears	29.12 ± 10.2			
Occupation	Student	167	102	269 (48.6%)†
	Salaried	32	18	50 (9.0%)†
	Private sector job	61	28	89 (16.1%)†
	Government sector Job	53	31	84 (15.2%)†
	Homemaker	0	33	33 (6.0%)†
	Unemployed	14	14	28 (5.1%)†
Qualification	Bachelor’s degree	60	27	87 (15.7%)†
	Post Graduates	165	108	273 (49.4%)†
	PhD/ Doctorate	102	91	193 (34.9%)†
Place Of Current Residence	With family	254	187	441 (79.7%)†
	Away from family	73	39	112 (20.3%)†
Healthcare Worker Status	Yes	81	53	134 (24.2%)†
	No	246	173	419 (75.8%)†

† the percentages are calculated based on total number of study participants (n=553)

TABLE 2 KNOWLEDGE REGARDING COVID-19

S.no.	Question	Correct Response	
		Frequency	Percentage
1.	What are the symptoms of novel coronavirus?	542	97.8%
2.	Who are more likely to develop into severe case if they contract Covid-19?	517	93.3%
3.	Can people with Covid-19 not presenting with any symptoms/ fever infect virus to others?	460	83%
4.	What are the transmission routes for covid-19?	540	97.5%
5.	Eating/ contacting non vegetarian foods such as chicken, eggs, fish, mutton etc. would result in infection by covid-19 virus?	487	84.3%
6.	What is the recommended minimum time for handwashing with soap and water?	396	71.5%
7.	What is the total duration for which one must quarantine in regard with covid-19?	60	11%
8.	Is there any definitive treatment/ Vaccine available for covid-19?	553	100%

TABLE 3 BLOOM'S CUT OFF SCORE FOR LEVEL OF KNOWLEDGE REGARDING COVID-19

S.no.	Category	Score	Frequency	Percentage
1.	Good	6.4 – 8.0	407	73.6 %
2.	Moderate	4.8 – 6.39	127	22.9%
3.	Poor	≤ 4.79	19	3.5%

TABLE 4 GENDER WISE DISTRIBUTION OF PARTICIPANTS AND TOTAL CAS SCORES

Gender	Total CAS Score	
	≥9	< 9
Female	6	217
Male	8	313
Total	14	530

Figures

FIGURE 1 PRACTICE REGARDING DISINFECTING THE SURFACES OF PERSONAL OBJECTS AND PLACES

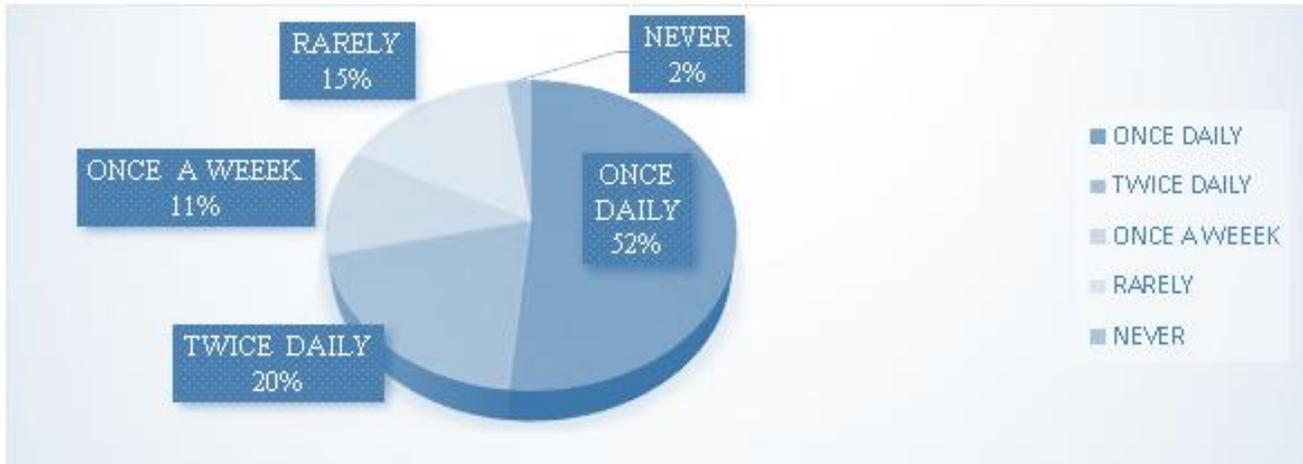


FIGURE 2 PRACTICE REGARDING MAINTAINNING SOCIAL DISTANCING OF 1-1.5 M FROM OTHERS

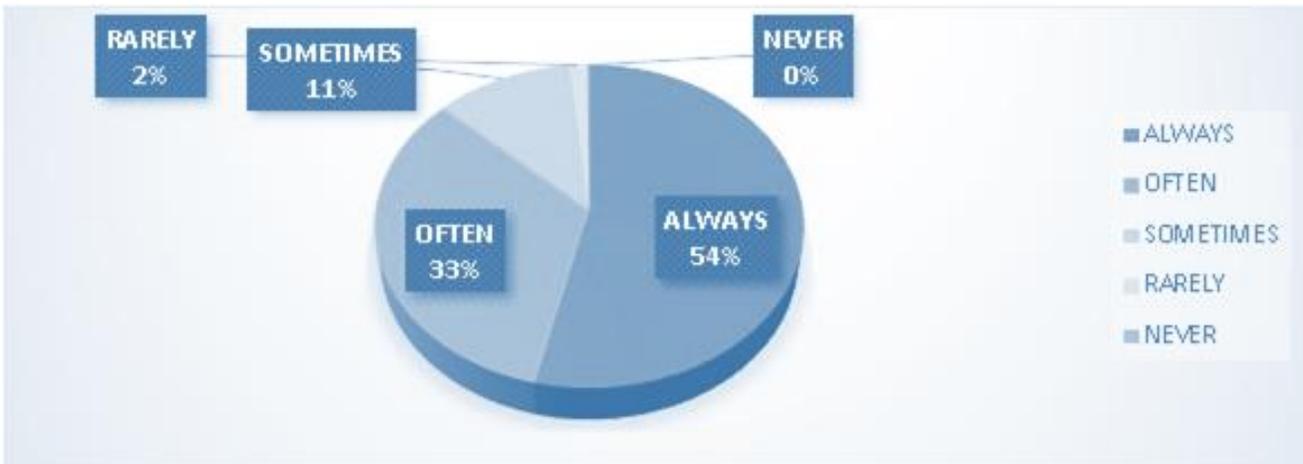


FIGURE 3 PRACTICE REGARDING AVOID TOUCHING FACE AND EYES WITH UNWASHED HANDS

