JMSR
Journal of Medical and Scientific Research

ORIGINAL RESEARCH

Fear of coronavirus 2019 (COVID-19), a pandemic too

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Abstract

Current management of coronavirus 2019 (COVID-19) focusses on infection control, development of a vaccine and the treatment of patients with little emphasis on psychosocial aspects. This study aimed at studying the prevalence and variables associated with fear of COVID-19 on Indian population. A cross sectional study was conducted on 1002 participants via an online survey and the data was analysed by SPSS version 26. The mean age of population was 32.29 with a SD of 14.17. Of the total population, 54.1 % were males and 45.9% were females. 15% of the population had anxiety and depression and 15% had fear of death across ages and literacy levels. Subjects with low education, lower income, staying away from the family and being tested for COVID-19, had higher levels of fear. Higher levels of fear were amongst news watchers and COVID-19 message forwarders. Amongst the infected or the contact population there was a lot of fear reaction to the disease. This study highlighted the fear spread among various groups of the population and a need for better pandemic preparedness.

Keywords: COVID-19; anxiety; mental health; pandemic preparedness; coronavirus

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Received 15 July 2021; *Revised* 24 August 2021; *Accepted* 30 August 2021; *Published* 6 September 2021

Citation: Anusha N, Satyanarayana D, Archana V. Fear of coronavirus 2019 (COVID-19), a pandemic too. J Med Sci Res. 2021; 9(4):192-198. DOI: http://dx.doi.org/10.17727/JMSR.2021/9-29

Introduction

19th and 20th centuries have witnessed quite a few pandemics, from the cholera pandemic of 1910-1911 to H1N1 in 2009 to present day coronavirus 2019 (COVID-19). Millions of people have succumbed to these diseases [1]. Just over a decade after handling the H1N1-2009, the world is now facing the challenge of a newly emerged corona virus strain i.e. nCoV-19 [2].

Within 3 months after the initial outbreak in Wuhan province, China, the virus had spread rapidly to various countries. In view of this, the World Health Organization (WHO) declared the outbreak a pandemic [3].

COVID-19 and its pandemic nature caused widespread concern, fear, and anxiety among all the individuals [4]. The risk of getting infected increased fear among the general public [5]. Constant exposure to the news about fatalities or infection rate of the pandemic further exacerbated fear, anxiety, and depression too [6]. Uninfected people are afraid of contacting the virus from COVID-19 infected individuals. Fear can lead to stigma, and social exclusion of confirmed patients, survivors, their families, and health care providers. This may increase the risk of depression and adjustment disorder [7].

Lin et al. [5] observed that fear of COVID-19 lead to irrational and unclear thoughts and correlated positively with depression, anxiety, stress and negatively with life satisfaction.

On 30th January 2020 the first corona virus case was confirmed in India. India imposed a nation-wide lockdown from 24th March to 29th May 2020 which restricted public movement for all activities except for essential services [8]. As a result, the country had come to a pause. Many were struck at places far off and many had lost their livelihood. High infectivity and relatively deadly nature of the corona virus along with unexpected measures taken by the government for its containment posed high risks to the psychological wellbeing.

Current management of COVID-19 focusses on infection control, development of a vaccine and treatment of the patients [1, 9]. There is little emphasis on the psychosocial aspects [1, 10-12]. The aim of the current study is to assess the prevalence of fear of COVID -19 and variables associated with it.

At the time of initiation of the study, i.e. on 24th April 2020, India had recorded 23,452 cases and 723 deaths with a mortality rate of 3.1% [13].

Subjects and methods

The current study was an online, cross- sectional study conducted across general population. Institutional ethics committee approval was obtained for the study. A survey form comprising a semi-structured questionnaire on the socio-demographic data, COVID-19 specific variables, ways of coping with the situation and fear of COVID-19 scale was created using Google forms, and was shared via various social networking platforms. Participants included population belonging to various sections of the society.

Participation was voluntary. An informed consent was taken from the participants. The responses were recorded online. All the participants who completed the survey from 24th April 2020 to 7th May 2020 were included in the study and only the incomplete responses were excluded. Population was described using descriptive statistics. Chi-square test was used for the assessment of categorical data. Student t-test was used for the evaluation of continuous data. SPSS version 26 was used for statistical analysis.

Tools

The Fear of COVID-19 Scale developed [14] is a seven item scale. The participants score their responses on a five-item Likert type scale from "strongly disagree," "disagree," "neither agree nor disagree," "agree," to "strongly agree". The scores range from 1-5. A total score is calculated by adding up each item score. Score ranges from 7 to 35. Higher scores indicated a greater fear of COVID-19.

It has an internal consistency ($\alpha = 0.82$) and test–retest reliability (ICC = 0.72). It has concurrent validity with the perceived vulnerability to disease scale (with perceived infectability, $r = 0.483$ and germ aversion, $r = 0.459$) and the hospital anxiety and depression scale (with depression, $r = 0.425$ and anxiety, $r = 0.511$) [4].

Results

A total of 1090 members participated in the study. Among them, 88 members gave incomplete responses and hence were excluded from the data analysis. A total of 1002 members were included in the data analysis. The mean age of population was 32.29 and SD 14.17 (student t-test) with an age range of 12 to 84 years. Of the total population, 54.1% were males and 45.9% were females. 88.9% were staying with family. 60% of the population was from metros. 16% of the population had comorbidities and 6.5% were tested for COVID-19 (Tables 1 & 2).

17% were working from home, 39% of the population spent time with their families, 5.6% pursued their hobbies during lockdown. 53.4% were unhappy with the progression of the situation (Table 3).

Table 1: Socio-demographic profile of the population.

Socio-demographic factors		*n(%)*
Sex	Male	542(54.1)
	Female	460(45.9)
Age	<21	167(16.67)
	21-30	390(38.92)
	31-40	255(25.44)
	41-50	71(7.08)
	51-60	32(3.19)
	61-70	68(6.78)
	71-80	17(1.69)
	81-90	2(0.19)
Education	Primary school	8(0.8)
	Secondary school	18(1.8)
	Intermediate	67(6.7)
	Graduation	550(54.9)
	Post-graduation	358(35.8)
Occupation	Health care professional	379(37.9)
	Essential COVID-19 services	81(8.1)
	Others	541(54)
Income	Nil	395(39.5)
	<20000	104(10.4)
	20000-50000	230(2.3)
	50000-75000	113(11.3)
	>75000	159(15.9)
Residence	Rural	127(12.7)
	Sub urban	274(27.3)
	Metro	601(60)
Stay	With family	891(88.9)
	With friends	52(5.2)
	Alone	59(5.9)
Health ailments	Nil	843(84)
	Diabetes	49(4.9)
	Hypertension	43(4.3)
	CKD/CLD/CHD	28(2.8)
	Others	39(3.9)

Table 2: COVID-19 specific variables.

COVID-19 specific variables		*n(%)*
Do you know anyone personally who were quarantined	Yes	860(85.8)
	No	142(14.2)
Were you quarantined	Yes	944(94)
	No	58(6)
Do you know anyone personally who was tested for COVID-19	Yes	986(98.4)
	No	16(1.6)
Were you tested for COVID-19	Yes	937(93.5)
	No	65(6.5)

Table 3: Coping with COVID-19 lockdown.

Lockdown specific factors		*n(%)*
Are you at financial burden due to corona virus pandemic/ lockdown	Yes	219(22)
	No	511(51)
	May be	272(27)
How often do you forward messages you receive regarding COVID-19	Never	268(26.7)
	Rarely	307(30.6)
	Sometimes	327(32.6)
	Always	100(10)
Do you verify information before forwarding to others	Always	676(67.5)
	Sometimes	194(19.4)
	Rarely	54(5.4)
	Never	78(7.8)
Have you bought your supplies food/ medicines/essentials more than usual	Yes	386(38.5)
	No	504(50.3)
	May be	112(11.2)
How did you adapt to the scenario of lockdown	Spending time with family	396(39.5)
	Work from home	178(17.8)
	Being idle	34(3.4)
	Pursued hobbies	59(5.9)
	Learnt new stuff	124(12.4)
	Watching web series/ movies	180(18)
	Watching COVID news	31(3.1)
Are you happy with current scenario and its progression	Yes	244(24.4)
	No	539(53.8)
	Maybe	219(21.9)

33.4% were very afraid of coronavirus. 31.7 % were uncomfortable to think of corona virus, 14.7% had fear of losing their life to corona virus. 18.4% were anxious about the news on corona (emotional fear reaction). 3.8% had disturbed sleep, 10% had clammy hands and 7.2% had palpitations (symptomatic expression of fear) (Table 4).

Higher scores on fear of COVID 19 scale indicate higher fear. The total score was summed. Based on the mean Likert scale classification [15] the population was divided into 4 groups as No fear (8-14), Mild fear (15-21), Moderate fear (22-28) and Severe fear (29-35).

We further categorized no and mild fear as Group 1. Moderate and severe fear were categorized as Group 2. Accordingly, 151(15.06%) subjects had higher levels of fear and 851(84.94%) had low levels of fear. The two groups were compared with respect to various variables and the data is presented as under (Tables 5-7).

Table 5 compares the socio-demographic data of the two groups. A comparison was done between the variables of the two groups using Chi-square test and there was a statistically significant difference between the two groups in variables like education, income and stay.

Table 4: Population responses on each item of fear of COVID-19 scale (score 1-5).

Items on the scale	*Likert scale response of the population n(%)*				
	1	*2*	*3*	*4*	*5*
I am most afraid of COVID-19	180(18)	162(16.2)	326(32.4)	158(15.8)	176(17.6)
It makes me uncomfortable to think about COVID-19	260(25.8)	175(17.5)	250(25)	145(14.5)	172(17.2)
My hands become clammy when I think about COVID-19	590(58.8)	146(14.6)	156(15.6)	51(5.1)	59(5.9)
I am afraid of losing my life because of COVID-19	527(52.6)	180(18)	148(14.7)	51(5.1)	96(9.6)
When watching news and stories about COVID-19 on social media, I become nervous or anxious	392(39.2)	202(20.1)	223(22.3)	99(9.8)	86(8.6)
I cannot sleep because I'm worrying about getting COVID-19	760(75.8)	116(11.6)	88(8.8)	17(1.7)	21(2.1)
My heart races or palpitates when I think about getting COVID-19	687(68.5)	143(14.3)	100(10)	45(4.5)	27(2.7)

Table 5: Comparison of two groups -Socio- demographic variables.

Socio-demographic factors	*Group 1 n=851(100%)*	*Group 2 n=151(100%)*	*P value*
Sex			
Males	387(45.47)	73(48.34)	Chi-square value 0.42
Females	464(54.53)	78(51.66)	X^2= 1
			P=0.51
Education			
Graduate	477(56.05)	73(48.34)	Chi-square value=12.87
Intermediate	56(6.5)	11(7.28)	X^2= 4
Post graduate	302(35.48)	57(37.75)	P=0.012
Primary school	5(0.5)	3(1.98)	
Secondary school	11(1.29)	7(4.63)	
Income			
<20,000	76(8.93)	28(18.54)	Chi-square value
>75,000	141(16.56)	18(11.92)	X^2 4
20,000-50,000	186(21.85)	44(29.14)	P=0.0001
50,000-75,000	94(11.04)	19(12.58)	
NIL	354(41.59)	42(27.81)	
Residence			
Rural	103(12.10)	24(15.89)	Chi-square value=3.27
Sub urban - Town	228(26.79)	46(30.46)	X^2 2
Urban - City, Metro	520(61.10)	81(53.64)	P=0.19
Stay			
Alone	44 (5.17)	15 (9.9)	Chi-square value=8.47
with family	767 (90.1)	124 (82)	X^2=2
With friends	40 (4.7)	12 (7.9)	P=0.014
Comorbidities			
Chronic heart / Lung/ Renal problems	24(2.82)	4	Chi-square value=1.53
Diabetes	40(4.70)	9	X^2 =4
Hypertension	36(4.23)	7	P=0.82
None	720(84.60)	123	
other	31(3.64)	8	
Occupation			
Essential services workforce - COVID 19 (Police, Banks, Pharmacies, Essential goods handlers)	69(8.10)	12	Chi-square value=0.951
Healthcare professionals (Doctors, Nursing staff, Lab technicians, Paramedics)	321(37.72)	59	X^2=2 P=0.95
Others	461(54.17)	80	

Note: Statistical test used Chi square test α =0.05; X^2 Degree of freedom.

Table 6 compares the COVID-19 specific parameters of the two groups. A comparison was done between the variables of the two groups using Chi-square test and there was a statistically significant difference between the two groups in people who were tested for COVID-19.

Table 6: Comparison of two groups - COVID19 specific parameters.

COVID-19 specific parameters	*Group 1 n=851(100%)*	*Group 2 n=151(100%)*	*P value*
Do you know anyone personally who were quarantined			Chi-square value=0.01 $X^{2=}1$
Yes	121(14.21)	21(13.90)	P=0.91
No	730(85.79)	130(86.10)	
Were you quarantined			Chi-square value
Yes	43(5.05)	15(9.94)	X^2 1
No	808(84.95)	136(90.06)	P=0.17
Do you know anyone personally who tested positive for COVID-19			Chi-square value0.18 $X^{2=}1$
Yes	54(6.35)	11(7.29)	P=0.66
No	797(93.65)	140(92.71)	
Were you tested for COVID-19			Chi-square value
Yes	10(1.18)	6(3.98)	$X^{2=}1$
No	841(98.82)	145(96.02)	P=0.011

Note: Statistical test used chi square test α 0.05

Table 7 compares the coping of the two groups to COVID 19 lockdown. A comparison was done between the variables of the two groups using Chi-square test and there was a statistically significant difference between the two groups in all the variables except hoarding of food, medicines and essentials.

Table 7: Comparison of two groups– Coping with COVID-19 lockdown.

Coping with COVID-19 lockdown	*Group 1 n=851(100%)*	*Group 2 n=151*	*P value*
Are you at financial burden due to corona virus pandemic/ lockdown			Chi-square value=11.13 X^2 2
May be	225(26.44)	47(31.12)	P=0.003
No	452(53.11)	59(39.07)	
Yes	174(20.44)	45(29.80)	
Have you bought your supplies -food/ medicines/essentials more than usual			Chi-square value X^2
Maybe	94(11.04)	18(11.92)	P=0.2
No	438(51.47)	66(43.71)	
Yes	319(37.49)	67(44.37)	
Do you verify information before forwarding to others			Chi-square value=13.78 X^2 3
Always	594(69.80)	82(54.30)	P=0.0019
Never	64(7.52)	14(9.27)	
Rarely	42(4.93)	12(7.94)	
Sometimes	151(17.74)	43(28.47)	
How often do you forward messages you receive regarding covid-19			Chi-square value=13.78 X^2 =3
Always	73(8.57)	27(17.88)	P=0.0032
Never	235(27.61)	33(21.85)	
Rarely	267(31.37)	40(26.49)	
Sometimes	276(32.43)	51(33.77)	

How did you adapt to the scenario of lockdown			Chi-square value=15.85 X^2 6
Being idle at home	29(3.41)	5(3.31)	P=0.014
Learnt new stuff	107(12.57)	17(11.26)	
Most of the time on web shows/television programs	151(17.74)	29(19.20)	
Pursued hobbies	52(6.11)	7(4.63)	
Spending time family	348(40.89)	48(31.79)	
Watching and sharing news regarding COVID-19	20(2.35)	11(7.28)	
Work From Home	144(16.92)	34(22.51)	
Are you happy with current scenario and its progression			Chi-square value=6.3 X^2 2
Maybe	197(23.15)	22(14.57)	P=0.04
No	446(52.41)	93(61.59)	
Yes	208(24.44)	36(23.84)	

Note: Statistical test- chi square test

Discussion

The current study is a comprehensive study on the prevalence of fear of corona virus in the population and its associated factors. 1002 subjects participated in the study. 15.06% reported higher levels of fear and 84.94% had low levels of fear. 14.7% are fearful of losing their life to corona virus which was quite high.

15% of the total population scored high on fear of COVID-19 scale indicating anxiety and depression in the population [4]. This focusses the need for targeted assessment and management of mental health issues at a population level.

In a study done by Reznik et al., mean scores observed in Russia were 17.4 with a SD of 4.7 and in Belarus were 16.6 with a SD of 4.5 [16]. A study done by Doshi et al., in Indian population using Fear of COVID-19 scale observed that the study population had an overall mean score of 18.00 with a SD of 5.68 [17]. Mean score on fear of COVID-19 scale in this study was 14.93 with SD of 6.27, indicating lower levels of fear among the study population.

Primary and secondary schooled individuals had more fear than those with higher education. This could be due to better access to credential information for the more educated sections of the society and thus not falling prey to the various myths circulated in social network and media.

Fear in low income group (Income <20000) and in persons with perceived financial burden may be attributed to the financial troubles caused by COVID-19 or lockdown. However, this is in contrast to a study done by Gaur et al. [18], in Indian population which showed no significant difference in the fear among different income groups.

Staying with family protected from fear. Family offers support system and is protective from a variety of psychological impacts which was evident from the current study. During the study period, those who stayed alone had more fear as they had a poor support system. Strong possibilities of being stranded at a place away from home town, lack of facilities for transportation and food might have contributed to heightened fear (Table 5).

People who underwent testing for COVID-19 had more fear. The status of their report was not included in the study. Waiting period during report and a positive report both contributed to the fear (Table 6).

Study done by Gaur et al. [18] also observed that approximately, 42% of respondents were nervous after watching news/social media posts about COVID-19. Our study also observed that people with higher levels of fear watched corona news most of the times, forwarded messages related to COVID-19 always even without checking the source and credibility of information. This could also lead to increasing panic among others.

They were satisfied with the current scenario as the lockdown was strictly being followed. This reflected the pro-activeness of the study population in putting up efforts for pandemic control (Table 7).

No significance was seen with respect to gender, urban- rural residence, occupation, comorbidities and quarantine status. Gender had no effect on fear in the current study. But studies from Eastern Europe [16] and Israel [6] showed that females had more fear than males. In Israeli population people

with comorbidities had more fear than those without comorbidities.

Mental well-being plays an important role in coping with unprecedented times like the COVID-19 pandemic. Even though there are several factors that pose problems in the COVID-19 pandemic, fear and some of its causative factors were explored in this study. Identifying factors that lead to fear of COVID-19 and preventing them could help in better coping with the pandemic. Further studies are needed for a better understanding on the pattern of fear and its consequences on mental and physical health.

Conclusions

Fear of COVID-19 pandemic is universally present in the study population, with a high fear of losing their life. Fear was due to concerns regarding health, social and economic crises. False reports on social media, television media and print media play a crucial role in spreading the fear associated with pandemic. Access to credential information regarding the COVID-19 pandemic helps in reducing the fear of pandemic. Support system is highly helpful in reducing the fear associated with pandemic.

Limitations

Cross sectional study design. Online study design - so people who use smart phones and had access to internet facility only were included in the study. People with previous mental illnesses were not excluded. Various phases of corona and lockdown will have various reactions from the people. So these may not be generalized to the pandemic as such but to the time frame of data collection. Sample contained data only from the Indian population. Global information about COVID-19 is varied, and hence, while interpreting and extrapolating the study results on fear and its impact, caution should be exercised.

Future directions

Studies focused on neuropsychiatric aspects of COVID-19 and long-term mental health consequences of COVID-19 will throw further insights.

Conflicts of interest

Authors declare no conflicts of interest.

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