

Effect of Lockdown during COVID-19: An Indian Perspective

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ABSTRACT

Background: The 2019 corona virus disease (COVID-19) pandemic has caused havoc worldwide and is a public health emergency of international concern. India is also going through a challenging situation as the number of COVID-19 cases is increasing day by day. The Indian Government imposed strict preventive measures and restrictions in the form of nationwide lockdown on 25th March, 2020 to retard the spread of the virus.

The aim of this study is to survey the general public in India for exploring the impact of lockdown on the mental health of individuals.

Methods: A cross-sectional web-based survey design was created using the free software Google Forms®. Survey was conducted from 15th April to 25th April 2020. A total of 5459 individuals met the inclusion criteria and the data is analysed using statistics software IBM SPSS (Version 25). Chi square test has been used to determine correlation between demographic data and mental state in lockdown during Covid-19 pandemic. P value <0.05, is considered significant.

Results: Increased anxiety is seen age group of 41-50 (p value 0.015), 51-60 (p value 0.002), self employed (p value <0.001), persons staying alone (p value <0.001), persons staying in containment zones (p value <0.001) and in persons who knew any positive case in their friend/ family circle (p value <0.001). Apprehension of financial loss is statistically significant for self employed (p value <0.001), persons employed in private job (p value <0.001) and those in age group of 31-40 (p value <0.001). Fear of diminishing essential supplies is significant in home makers (p value 0.006). Fear of infection is more in retired persons (p value 0.001) and in age group above

60 years (p value 0.03). Fear of death is significant in persons above 70 years of age (p value 0.007). There is no statistically significant effect on interpersonal relations.

Conclusion: This study shows association between lockdown during COVID-19 and anxiety and other apprehensions in Indian population. These findings need further research to identify communities at high risk of destabilized mental health so that interventions can be planned. Health authorities could consider providing online psycho education through social media or TV programs.

Keywords: COVID-19, Lockdown, Anxiety, Apprehension, Fear

INTRODUCTION

COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China, when clusters of pneumonia cases of unknown aetiology were found to be associated with epidemiologically linked exposure to a seafood market. Since then it has spread globally and has been declared a pandemic by the World Health Organization (WHO).^[1] Based on the epidemiologic characteristics observed so far in China, everyone is assumed to be susceptible, although there may be risk factors, increasing susceptibility to infection.^[2]

COVID-19 is transmitted human to human via droplets and fomites during close unprotected contact with an infected person. There is highly clustered nature of local transmission. Symptoms of COVID-19 are non-specific and the disease presentation

can range from no symptoms (asymptomatic) to severe pneumonia and death.^[2]

Individuals aged over 60 years and those with underlying conditions such as hypertension, diabetes, cardiovascular disease, chronic respiratory disease and cancer are at highest risk. Mortality increases with age, with the highest mortality among people over 80 years of age. Disease in children appears to be relatively rare and mild with approximately 2.4% of the total reported cases reported amongst individuals aged less than 19 years.^[2]

Lockdown is meant to prevent the spread of infection from one person to another and also to build necessary health care network to handle eventualities. This means, not stepping out of the house except for buying necessities, reducing the number of trips outside and ideally only a single, healthy family member making the trips when absolutely necessary.

The world's biggest lockdown was imposed in India. Indian Prime Minister Sh. Narendra Modi called for a complete lockdown of entire nation for 21 days (Lockdown 1.0 from March 25, 2020 to April 14, 2020) in an effort to contain the COVID-19 pandemic.^[3] The lockdown was then further extended to a total duration of 66 days. The lockdown was first extended till May 3, 2020 (Lockdown 2.0),^[4] then further extended for 2 weeks (Lockdown 3.0 from May 4, 2020 to May 18, 2020)^[5] and then further extended upto May 31, 2020 (Lockdown 4.0).^[6]

A WHO technical guidance note (WHO 2020), stated that “the main psychological impact to date is elevated rates of stressor anxiety”, with a warning that “as new measures and impacts are introduced – especially quarantine and its effects on many people’s usual activities, routines or livelihoods – levels of loneliness, depression, harmful alcohol and drug use, and self-harm or suicidal behaviour are also expected to rise”.^[7]

Rationale of the study

COVID-19 is a new disease with high reproductive number and no definite treatment or vaccine. High numbers of people are getting infected and rate of local transmission is high, which has made countries around the globe to take stringent actions like quarantine and lockdown. The psychosocial impact of health emergencies seems to be higher during quarantine measures.^[8] Quarantine has been associated with high stress levels.^[9]

An observational cross sectional study can be considered an important research tool to describe “real-world” care settings and can assist with the designing of randomised controlled trails.^[10] This study is planned as a preliminary step for assessing the mental state of people during lockdown in COVID-19.

METHODS

A cross-sectional web-based survey design has been adopted. The people under study were explained the purpose of our study to get their consent. On-line consent was obtained from the participants. Participants were allowed to terminate the survey at any time they desired. The survey was anonymous. The confidentiality of information was assured to the participants. Participants who were Indian citizens ≥ 18 years were eligible irrespective of the state in which they reside. Those who were terminally ill, on immunosuppressant or on antidepressant medication were excluded from the study. Data was collected between April 15th 2020 to April 25th 2020 using an on-line questionnaire circulated through WhatsApp, other social groups or through the internet. The investigated timeframe corresponds to the time when lockdown was in its 2nd phase. On-line consent was taken as a part of survey; those who consented to fill the survey had also consented to share the data. The survey was developed using the free software Google Forms®.

The survey was conducted using a questionnaire which had questions related to apprehension of losing job/ financial loss,

stress of diminishing essential supplies, effect on interpersonal relations, anxiety, fear of getting infected or death due to the COVID-19. Response options for questions were generally: Yes/No. This made the survey easy to fill, even for less educated people and less time consuming.

The information collected by online survey is tabulated and analyzed and interpreted statistically. Statistical software IBM SPSS (version 25) is used for analysis of data. Null hypothesis is that there is no association between the lockdown measures and mental health of people. Alternate hypothesis is that there is an association between the lockdown and mental health of people. Chi square test is used for testing the correlation between the two variables. P value <0.05, is considered significant.

RESULTS

A total of 5585 individuals completed the questionnaire, of which 126 were excluded (Duplicate entries= 46, Typographical errors=61, Taking anti-depressants=19). Therefore further analysis is done for response of 5459 participants.

Figure-1 shows the flowchart of the study. Table-1 shows demographic data of 5459 participants. Participants consisted of 2948 males (54.0%) and 2511 females (46.0%). Median age of males is 44 (IQR=25) and of females is 43 (IQR=24). Maximum respondents are in the age group of 18-30 (24.7%) and 41-50 (24.4%). Most of the respondents are residing in Delhi (33.5%) followed by Maharashtra (18.1%). 58.3% are married, 36.9% are employed in private job and 23.1% are home maker. 74% of the respondents were staying with family at the time of lockdown. 9.6% of respondents were staying in containment zones (Areas that are notified by the authorities as high-risk zones, where the number of COVID-19 cases is high, are called containment zones. The civic bodies decide which area qualifies to be listed as a containment zone. The basic idea behind such a demarcation is to limit the virus in an enclosed space to prevent its spread in other areas) during the survey period. 8.4% of respondents personally knew COVID-19 positive case patient within their family/ friend circle (Table1).

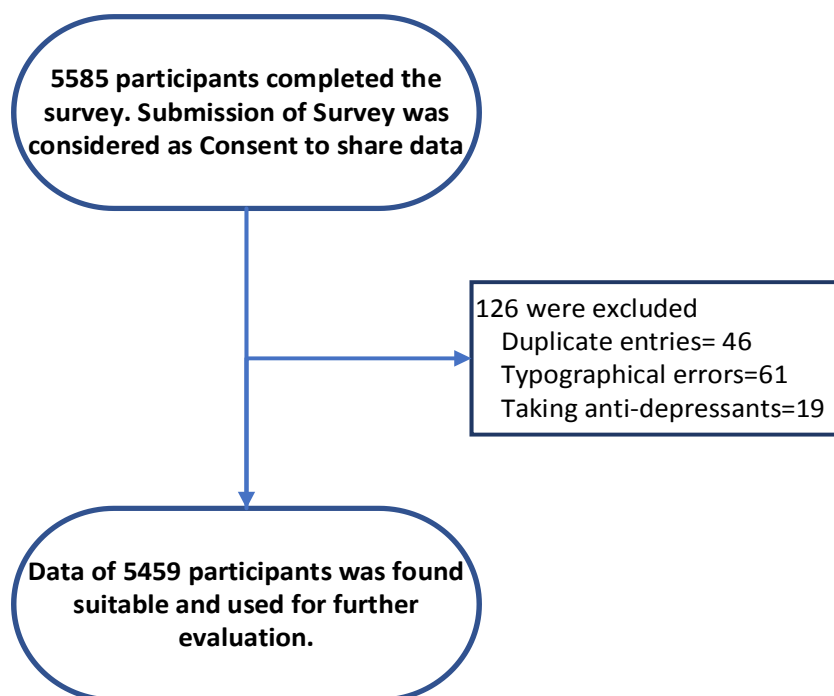


Figure 1: Flow chart of the study

An effort has been made to understand if there is any association of

anxiety, apprehension, stress, fear with age, sex, occupation, staying alone, staying in

containment zone and having knowledge of some friend/ acquaintance who is infected with COVID-19 (Table 2). There is a significant association between anxiety and self employed persons (p value <0.001). Anxiety is more in age group of 41-50 (p value 0.015) and 51-60 (p value 0.002). Persons staying alone, in containment zone and those who had acquaintances/ friends suffering from COVID-19 are also found to be significantly anxious (p value <0.001). Apprehension of financial loss is statistically significant in self employed and those with private jobs (p value <0.001). This could be due to the fact that they could not go to workplace leading to business loss / salary cuts. Similarly, respondents in age group of 31-40 are found to be more apprehensive about financial loss (p value <0.001).

Apprehension of diminishing essential supplies is seen statistically significant in homemakers (p value 0.006). Fear of getting infected is found to be significant in age group of 61-70 years (p value 0.03), 71-80 years (p value 0.02) and above 80 years (p value 0.03). Fear of getting infected is significantly higher in persons staying in containment zones (p value 0.01) and those who knew someone infected with COVID-19 (p value <0.001). Fear of death is significant in age group of 71-80 years (p value 0.007) and those above 80 years of age (p value 0.03). Interpersonal

relationships did not show any association with any of the independent variables.

Table 1: Demographic Data (N=5459)

Socio Demographic Variable	Number (%)
Age Group (years)	
18-30	1347 (24.7)
31-40	966 (17.7)
41-50	1334 (24.4)
51-60	902 (16.5)
61-70	516 (9.5)
71-80	301 (5.5)
>80	93 (1.7)
Gender	
Male	2948 (54.0)
Female	2511 (46.0)
Residents of State	
Delhi	1827 (33.5)
Maharashtra	986 (18.1)
Tamil Nadu	872 (16.0)
Uttar Pradesh	723 (13.2)
Gujarat	421 (7.7)
Rest of India	630 (11.5)
Marital Status	
Un-Married	1946 (35.6)
Married	3184 (58.3)
Divorcee	151 (2.8)
Separated	76 (1.4)
Widow/Widower	102 (1.9)
Occupation	
Government/PSU Job	267 (4.9)
Home Maker	1260 (23.1)
Private Job	2013 (36.9)
Retired with pension	126 (2.3)
Retired without pension	374 (6.9)
Self Employed	783 (14.3)
Student	553 (10.1)
Unemployed	83 (1.5)
During Lockdown	
Staying with family / friends	4039 (74.0)
Staying alone	1420 (26.0)
During Lockdown	
Staying in Containment zone	524 (9.6)
Staying in non-containment zone	4935 (90.4)
Do you know any Covid-19 positive case	
Yes	458 (8.4)
No	5001 (91.6)

Table-2: Correlation between effects on mental health and demographic data

Independent Variable	Anxiety, N (p-value)	Apprehension of financial loss, N (p-value)	Apprehension of diminishing essential goods, N (p-value)	Fear of getting infected, N (p-value)	Fear of Death, N (p-value)	Effect on interpersonal relationship, N (p-value)
Age Group (years)						
18-30	302 (0.079)	232 (<0.001)*	126 (0.06)	431 (0.02)*	56 (<0.001)*	183 (>0.100)
31-40	211 (0.059)	369 (<0.001)*	111 (>0.100)	342 (>0.100)	106 (0.09)	135 (>0.100)
41-50	356 (0.015)*	351 (>0.100)	157 (>0.100)	451 (>0.100)	142 (>0.100)	179 (>0.100)
51-60	255 (0.002)*	216 (>0.100)	101 (>0.100)	304 (>0.100)	98 (>0.100)	125 (>0.100)
61-70	110 (>0.100)	120 (>0.100)	53 (>0.100)	202 (0.03)*	61 (0.06)	51 (0.10)
71-80	66 (>0.100)	75 (>0.100)	30 (>0.100)	123 (0.02)*	42 (0.007)*	28 (0.052)
>80	21 (>0.100)	18 (>0.100)	8 (>0.100)	42 (0.03)*	15 (0.03)*	6 (0.06)
Gender						
Male	698 (>0.100)	731 (>0.100)	269 (<0.001)*	994 (0.09)	292 (>0.100)	366 (>0.100)
Female	623 (>0.100)	650 (>0.100)	317(<0.001)*	901 (0.09)	228 (>0.100)	341 (>0.100)

Occupation						
Government/PSU Job	42 (<0.001)*	6 (<0.001)*	31 (>0.100)	88 (>0.100)	29 (>0.100)	37 (>0.100)
Home Maker	297 (>0.100)	289 (0.09)	162 (0.006)*	448 (>0.100)	132 (>0.100)	168 (>0.100)
Private Job	486 (>0.100)	576 (<0.001)*	226 (>0.100)	683 (>0.100)	206 (>0.100)	253 (>0.100)
Retired with pension	14 (<0.001)*	0 (<0.001)*	14 (>0.100)	54 (0.05)	15 (>0.100)	10 (0.09)
Retired without pension	86 (>0.100)	102 (>0.100)	43 (>0.100)	159 (0.001)*	41 (>0.100)	37 (0.07)
Self Employed	262 (<0.001)*	306 (<0.001)*	95 (>0.100)	279 (>0.100)	82 (>0.100)	109 (>0.100)
Student	109 (0.009)*	65 (<0.001)*	3 (<0.001)*	154 (<0.001)*	6 (<0.001)*	84 (0.10)
Unemployed	25 (>0.100)	37 (<0.001)	12 (>0.100)	30 (>0.100)	9 (>0.100)	9 (>0.100)
During Lockdown						
Staying alone	502 (<0.001)*	378 (>0.100)	170 (0.08)	507 (>0.100)	151 (0.10)	35 (<0.001)
During Lockdown						
Staying in Containment zone	212 (<0.001)*	128 (>0.100)	63 (>0.100)	208 (0.01)*	59 (>0.100)	79 (>0.100)
Do you know any Covid-19 positive case						
Yes	226 (<0.001)*	102 (>0.100)	57 (>0.100)	202 (<0.001)*	54 (0.08)	52 (>0.100)

*Significant

Limitation

This study has some limitations due to the sampling technique. Relying on social networks voluntary recruitment and re-sharing could have introduced an important selection bias by firstly excluding people not on social networks, and secondly introducing a self-selection bias, which may not well represent the entire population.

This study has several strengths, including a large sample size and the sampling timeframe that corresponded to the lockdown period in India.

DISCUSSION

This lockdown has restricted people to stay at home. There is uncertainty which has led to a sense of fear and anxiety among people and is likely to impact their mental health.

Currently there is no definitive treatment of COVID-19. Also the symptoms are non specific and general public find it difficult to differentiate it from other viral illness. [11] This explains fear of death in elderly especially in respondents above 70 years of age, as they are at higher risk.

Anxiety is significantly higher in self employed respondents probably due to closure of shops during lockdown. Small

businessmen, contractors etc are affected as they are finding it difficult to sustain fixed cost while their income has taken a dive. Also for many, labour is also a problem as many of labourer fled to their native places.

Those who are staying in containment zones, and those who are staying alone showed more anxiety for various reasons like feeling of loneliness, stress that if they get infected then who will take care of them, bring them supplies etc.

People who were in government jobs, PSU had significantly less financial stress probably due to sustained salary even during lockdown. Age group of 18-30 also had less stress probably because this group includes 41% students. In the Indian scenario, the parents generally fulfil all the financial needs of their children till they are studying up to graduate and even post graduate level.

Apprehension of diminishing essential supplies is more in homemakers. This could be because lockdown had triggered off widespread panic which leads to many buying food items and essential commodities in bulk resulting in stores running dry. Some shopkeepers taking advantage of panic situation started black marketing of essential items which further

deteriorated the supply situation.

Fear of getting infected is significant in persons aged 60 years and above. This is probably because co morbidities are more common in old age and advancing age is also a risk factor for COVID-19. It is also higher in people living in containment zones as probably their anxiety level is already high and they are forced with more restrictions.

This study shows that there is anxiety, fear and apprehension in certain groups of general population. Continued public education and reliable information about COVID-19 through health departments and media can help reduce the fear of the unknown. Stress management and relaxation techniques can be disseminated to public through video clips and cartoons for easy understanding. This will enhance the psychological preparedness of the nation.

Future studies may be planned to monitor the mental health outcomes of the population, in order to define mental health interventions at a population level.

CONCLUSIONS

This study managed to capture some immediate negative mental health impacts of the COVID-19 pandemic in Indian population three to four weeks into the COVID-19 lockdown measures. It also suggested some important future research areas to assess the impact of the COVID-19 pandemic on mental health for targeted psychological interventions.

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Conflict of Interest

The author has no conflict of interest to disclose.

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