A comparative study to find out/ assess the impact of lockdown on the mental health of the general population and covid-19 frontline health care workers

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ABSTRACT

Background: Lockdown is an emergency situation which has confined people to their homes, states and country. Individuals felt insecure and worried about their financial matters and their mental health was affected at some point of time during the corona virus pandemic lockdown.

Aim: The study aimed to assess the effect of lockdown on mental health between the general population and covid-19 frontline health care workers.

Material and Methods: The survey was conducted from July to October 2020 using DSM -5 Self-Rated level 1 cross-cutting symptom measure -Adult scale, circulated through social media platform (Google forms). In this study, 180 participants were enrolled. Hindi version of the measure was used to assess the psychological impact on the participants and a score of 0 was considered as NO and was taken as a Negative response and scores 1 to 4, were considered as YES and were taken as a positive responses.

Result: A total of 180 responses were obtained during the survey, amongst them 36.67% were male and 63.33%were female. Frontline healthcare workers were 51.67% and among the Non-health care workers, unemployed were 10%, Student were 17.78%, and the remaining working were 56.67%. As per DSM 5 Crosscutting symptoms scores, the most common reported psychological symptoms were Anxiety 81.11%, Depression 52.78%, Sleep problems 29.44%, and Substance use 25%,. The comparison between both the groups was not statistically significant (p>0.001). However, non-healthcare workers experienced more psychological symptoms.

conclusion: The covid-19 lockdown was associated with poor mental health across individuals .the lockdown was observed to be a stressful situation that could have precipitated psychological symptoms like anxiety, stress, depression, and sleep disturbance in the individuals.

Keywords: corona virus, covid-19, lockdown ,pandemic , psychological symptoms, impact, mental health.

INTRODUCTION

Coronavirus affected people globally, who underwent psychological pressure which lead to fear, anxiety, depression, and insomnia. In December 2019, a case of pneumonia-like diseases was the first reported in Wuhan, China.

After few days, the etiological agent of the pneumonia was identified to be novel coronavirus (n-cov), and it was called coronavirus disease 2019. Since the report of the first case, the infection has spread to more than 9.8 million cases worldwide as of June 28, 2020. It has spread all around the world, involving 216 countries. In March 2020, the world Health organization declared it as pandemic and Europe to be the epicentre.[1]

The total number of cases as of June 28, 2020, is 9,843,073, and the death toll has reached 495,760. The first case was identified in India in January 2020 and now India has seen a recent surge in the number of cases and there is a record single-day spike of 38,902 covid-19 cases and the death toll of 26,816 with 543 new fatalities and a total of 0.9 million cases in India mid-July. [2,3]

The lockdown during the recent covid-19 pandemic has resulted in a changed lifestyle for many of us in terms of disturbed sleep, psychological well-being and stress. China was the first country to implement a lockdown to control the spread of infection. **Lockdown** is defined as an emergency measure in which the movement of the people is temporarily restricted during a threat and danger. **Quarantine** is the separation and the restriction of the movement of potentially exposed people to a contagious disease thus reducing their risk of infecting others whereas **Isolation** is the separation of those who have already been diagnosed with a contagious disease from those who aren't sick. In current scenario of covid-19, it is estimated that around 2.6 billion people worldwide, which account for one-third of the world population, are under some sort of restriction and lockdown with fear and uncertainty affecting the mental health of the individual . [4,5]

 During the lockdown, most people were restricted to their homes. This restriction was stressful in individual and sharing the same space for a long period with their family. Stressors during the quarantine were the duration of quarantine, fear of infection frustration and boredom, etc. A **recent review** on the psychological impact of quarantine during the COVID 19 pandemic published in the [6,7]showed, a wide range of the impact on mental health from stress, anger, depression, insomnia and emotional exhaustion to depression and anxiety. According to the same study, low mood, fearfulness was the most common symptoms experienced.

The government of India has implemented a nationwide "lockdown" which was declared from midnight of March 25, 2020, initially for 21 days, and on 14th of April extended up to May 3, 2020**.** [8]The current lockdown in India is the biggest in the history of humankind. Along with shutting down of schools, offices, businesses, and public places except for hospitals, the people are advised to self-isolate during this period. An online survey showed in the context of India, the lockdown and isolation precipitated a range of psychological reactions such as increased anxiety, irritability, low mood, fear, insomnia, memory problem, disturbed personality, psychosis, and neurosis. Such emotional conditions impacted negatively on an individual's

function state, both physical and mental. Covid-19 (coronavirus disease 19) affected the mental health of both the general population and covid-19 frontline health care workers.

In the context of the ongoing lockdown, the current study was undertaken via online platform (Google forms). The study mainly aimed at assessing the impact of lockdown on the mental health of the general population and covid-19 frontline health care workers and compare their psychological symptomatology.

Material and Methods

It was a cross-sectional study conducted by the Department of psychiatry of Mahatma Gandhi medical college and Hospital, Jaipur. Data was collected using an online survey platform (Google forms) between the general population and covid-19 frontline health care workers. The Survey was done from July 16 to Oct. 15, 2020. The study was conducted after ethical clearance from the institutional review committee. The study tool was made available in the Hindi language. A total of 180 individuals were enrolled in the study.

However, participants who had psychiatric disorder, pregnancy, and individuals who are under the age of 18 were excluded from the study.

A semi-structured form was developed to gather information about socio-demographic data. Socio-demographic data included age, gender, residential city, occupation, and marital status. The detail regarding the presence of psychological symptoms following lockdown was noted.

DSM-5 Self-rated level 1 cross-cutting symptom measure –Adult (CCSM) developed in Hindi version was used in the study. This adult version of the measure consists of 23 questions that asses 13 psychiatric domains like Depression, Anxiety, OCD, Sleep problems etc. Each item inquired about how much the individual has been bothered by the specific symptoms during the past 2 weeks.

The population survey consisted of questions regarding psychiatric symptomatology which were adapted from DSM5 self-rated Level 1 cross-cutting measure (CCSM) which was developed by the American Psychiatric Association. It measured scores in participants using a 5-point Likert scale.

A consistently high score on a particular domain indicated significant and problematic symptoms for the individual that might require further assessment, treatment, and follow-up. Participants whose response was **No was** considered as **0** scores of DSM 5 cross-cutting symptom score (CCSM) that mean NO psychological symptoms experienced and if response was **yes ,**considered as 1 to 4 score means have experienced psychological symptoms. A Score of 0 (NO) was taken as a negative response and score 1,2,3,4 were taken (yes) as a positive response. The measure was found to be clinically useful and to have good test-retest reliability in the DSM-5.

Statistical analysis

Descriptive statistics were conducted for the socio-demographic variable and psychological symptoms. Chi-square test and cross-tabulation were used to compare the sociodemographic variable and related psychological symptoms as per the psychiatric domain. Data were also compared across groups of the general population and frontline health care workers. Data analysis was done using SPSS Version 22.0. International Business Machine Corporation (IBM), New York, USA. The level of statistical significance was $p < 0.05$.

RESULTS

A total of 180 completed responses were received during the survey, amongst them 36.67% were male and 63.33% were female.

The no. of participants belonging to 18-30 yrs. age group were 47.78%, 30-40 yrs. were 13.33%, 40-50 yrs. were 4.44% and another age group 50-60 yrs. and above 60 years were 1.67% which were less in amount.

Among the participants, 42.78%were unmarried and 57.22% were married. As based on occupation, Frontline healthcare workers were 51.67%. Among Non-health care workers that were observed, unemployed were 10%, Students were 17.78%, and remaining were working 56.67%. Affected with covid 19 were 45.56% and non-affected with covid 19 were 54.44%.

The detail of sociodemographic variables is provided in **Table 1.**

Sr.No.	Variables	DSM-5 Cross-cutting score (n)(%)
1.	Age 18-30 yrs. - 0 30-40 yrs. - 1 40-50 yrs. – 2 50-60 yrs. – 3 >60yrs	86(47.78%) 24(13.33%) 8(4.44%) 3(1.67%)
2.	Gender Male – 0 Female – 1	66 (36.67%) 114(63.33%)
3.	Marital Status Unmarried – 0 Married – 1	77(42.78%) 103(57.22%)
4.	Occupation Unemployed – 0 Student – 1 Working – 2 Frontline Health Worker – 3	18(10%) 32(17.78%) 102(56.67%) 28(51.67%)
5.	Affected with Covid-19 N0 – 1 Yes – 0	98(54.44%) 82(45.56%)

Table 1: Important Variables with their DSM 5 Crosscutting symptoms score as the frequency of distribution N (%)

Domain Number	Domain	Numbers= (n)(%)
1.	Anger- 0=no 1=yes	114(63.33%) 66(36.67%)
2.	Anxiety 0=no 1=yes	34(18.89%) 146(81.11%)
3.	Depression 0=no 1=yes	85(47.22%) 95(52.78%)
4.	Dissociative 0=no 1=yes	166(92.22%) 14(7.78%)
5.	Mania 0=no 1=yes	144(80%) 36(20%)
6.	Memory 0=no 1=yes	166(92.22%) 14(7.78%)
7.	OCD 0=no 1=yes	145(80.56%) 35(19.44%)
8.	Personality functioning 0=no 1=yes	151(83.89%) 29(16.11%)
9.	Psychotic symptoms 0=no 1=yes 2=NA	171(95%) 8(4.44%) 1(0.56%)
10.	Sleep problem 0=no 1=yes	127(70.56%) 53(29.44%)
11.	Somatic symptom 0=no 1=yes	126 (70%) 54(30%)
12.	Substance use 0= no 1=yes	135(75%) 45(25%)
13.	Suicidal ideation	

0=no	169 (93.89%)	
1=yes	10 (5.56%)	
2=NA	1 (0.56%)	

Table 2: Psychological symptoms(Domain)

Response yes (1) represents HCQ (Health care workers) and Response NO (0) represents Non-health care workers.

Among the total, a change has been noticed that anger was reported in 36.67%, anxiety in 81.11%, Depression in 52.78%, Dissociation in 7.78%, mania in 20%, memory problems in 7.78%, OCD in 19.44%, personality functioning problem in 16.11%, psychotic symptoms in 4.44%, Sleep problems in 29.44%, somatic symptoms in 30%, substance use in 25% and suicidal ideation in 5.56% were observed amongst 180 participants. DSM 5 Cross-cutting symptoms scores distribution is illustrated in **Table 2.**

The age was categorized into four subgroups, 18-30 years, 30-40 years, 40-50 years, and 60 years and more. The age group 18-30 which constitutes 86 participants experienced more psychological symptoms as compared to another age group, though not statistically significant. We found that female participants experienced more psychological symptoms which were reported 63.33% in our study.

Domain Number	Domain	Frontline health care workers N=28(51.67%)	Non-health care workers N=152(84.44%)	X^2	P
1.	Anger	33(38.8)	33(34.7)	12.800	.000
2.	Anxiety	73(85.9)	73(76.8)	69.689	.000
3.	Depression	47(55.3)	48(50.5)	0.556	.456
4.	Dissociative	7(8.2)	7(7.4)	128.356	.000
5.	Mania	19(22.4)	17(17.9)	64.689	.000
6.	Memory	6(7.1)	8(8.4)	128.356	.000
7.	OCD	20(23.5)	15(15.8)	67.222	.000
8.	Personality functioning	14(16.5)	15(15.8)	82.689	.000
9.	Psychotic symptoms	3(3.6)	5(5.3)	148.430	.000
10.	Sleep problem	25(28.4)	28(29.5)	30.422	.000

11.	Somatic symptom	31(36.5)	23(24.2)	28.800	.000
12.	Substance use	23(27.1)	22(23.2)	45.000	.000
13.	Suicidal ideation	6(7.1)	4(4.3)	141.235	.000

Table 3 Comparison of psychological symptoms(Domain) among HCQand Non-HCQ (n=180)

(statistic shown in Table was p-value, chi-square tests =$X^{2)}$

Table 3 represents a comparison psychiatric domain (13) which were further analysed using cross-tabulation and chi-square test which showed depression, anxiety, anger, mania, sleep problems, suicidal ideation, OCD, personality issue, dissociative disorder, somatic symptoms, substance use on group based on frontline line health care worker and Non-health care worker (general population).

It was found that the recent exacerbation of symptoms was significantly associated with psychological symptoms between frontline health care worker N=28(51.67%) ($X^{2=}0.556$; p=0.456) and Non-health care workers N=152(84.44%). These groups were comparable with regards to the number of psychological symptoms (Depression (P=.456), Anger (p=.000), anxiety (P= (.000) and Dissociation, Personality functioning, and Sleep problem (p<.01) were statistically significant. Other symptoms like Mania (p= .000), Memory problem (p=.000), OCD (p=.000), Psychotic symptoms (p=0.000) and Somatic symptoms (P =0.000) also showed statistical significance difference.

 Substance use 27.1% in health care workers and non-healthcare workers 23.2% and suicidal ideation (P= 0.000) were also statistically significant. Their chi-square and related statistics are presented in **Table 3**.It was observed that Comparison in both groups showing statistically significant (p <.05)

DISCUSSION:

In this time of covid 19, we found that researchers are trying to make the sense of the effect of this pandemic on every aspect of human life, society, and socio-culture background. According to literature, the overall prevalence of mental disorders in India is 14.3%.

The most important concern nowadays is regarding the effect of the pandemic on the mental health of the population at large. There are several studies conducted which show that phenomena such as lockdown, quarantine, isolation, and social distancing have an impact on the psychological well-being of the affected people. The author remarks that fear seems to be certain as an effect of lockdown, mass quarantine, and anxiety, depression, stress, phobia are most likely to escalate which is also true for our study. **Bhawna Gupta et al**[9,10]. showed that the COVID-19 pandemic leads to psychological well being burden like anxiety, sleep problems, fear, depression .This is the first Cross-Sectional online survey conducted on HCWs in India during the lockdown.

Our study showed that mental health and well-being are influenced by lockdown and the coronavirus. The proportion of anxiety, fear, frustration, loneliness, anger, stress, depression,

dissociation, OCD, insomnia, forgetfulness and substance abuse are commonly associated with the lockdown. **Subhrojyoti Bhowmick et al** [11,12]showed that increased lockdown periods coupled with fear, frustration, and financial losses can easily stigmatize and change our behavior leading to depression and increased stress.

These findings contrast with those of a recent study from the Greek population which reported that nearly 38% of participants had insomnia after covid 19 pandemic, and in our study sleep problems were found lower in 29.44% of participants as compared to the Greek population. **Volts et al** [13,14] study showed that the Greek population was a function of loneliness, uncertainty, depression, and covid 19 related worries are the major contributors of depression and uncertainty.

The lockdown has also created a scenario in which people were bound in their home and could not go out. They were left to have fear regarding their important work and unfinished business. In our study, non-healthcare workers 52.78% experienced depression, in health care workers depression was only seen in 47.22% and anxiety symptoms were found in 81.11% which were higher. **Rodolfo Rossi et al**[15,16] showed that relatively high rates of PTSS, Depression Symptoms, Anxiety symptoms, Insomnia, Perceived stress, and ADS, with young women having higher side of mental health issue.

In **multiple studies** as quoted in a review article, it was reported that fear of being infected or infecting others was one of the most common stressors during quarantine. [17] The **CDC reports** that stress during an infectious disease outbreak can sometimes cause symptoms such as anxiety, stress and financial situation, loss of support service that one's life depends on changes in sleep, appetite, worsening of chronic physical and mental health and increase substance use and in our study use of tobacco and alcohol and other substance were found to be 25% which increased in the community during a lockdown. [18,19]

The most important finding in our study was the psychological symptoms of anxiety, depression, and insomnia occurred more in females 63.33%.

A study done in China during covid 19 and another study done in Canada during SAR reported no significant association among psychological symptoms with demographic variables such as age, sex, and education level. In our study no significant association among psychological symptoms and demographic variables except younger age group and female were found. However, a study in the UK and another study conducted during SARS reported that lower levels of formal education, female gender, and younger age were predictors of stress and as well as, [20]

In our study, age group 18 -30 years also experienced more psychological symptoms around 47.78%. Two different studies conducted in the UK and china independently found that age groups 25-45 and 21-30 were indicators of poor mental health respectively. However, another study reported that there was no significant difference in the stress level experienced among the different age groups. [21,22]

In the present study, a group based on comparison to occupation health care professional had slightly lower experienced psychological symptoms in our study which were showed statistically significant, this is a major finding in the study. **Sandeep Grover et al** [23,24] showed that was no significant difference between the 2 groups of Health care workers versus non-Health care workers. It was seen in our study that the prevalence (52.78%) of depression be significantly higher among the non-HCWs. A study published in The **Lancet reports** that health professionals

working during the lockdown developed more PTSD-like stress symptoms. They were more likely to suffer from depression, anxiety, fear, and frustration[25].

This study had a methodological **limitation i.e.** the inherently based survey. All inclusion and exclusion criteria were assessed based on self-report, and therefore some participants were unaware of their status.

CONCLUSION

The survey showed that covid-19 lockdowns were associated with poor mental health among frontline health care workers and the general population and seems to be stressful and can precipitate psychological symptoms. The most frequently reported psychological symptoms were fear, anxiety, depression, and sleep disturbance, where the most frequent stressor was fear of contamination, restricted movement, and uncertainty about the length of lockdown. Every individual lives with stress during a complete lockdown.

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CONFLICT OF INTEREST
There was no conflict of interest.

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