Original Article

Surviving the storm: Wave-wise comparison of the pandemic's impact on mental health dynamics, sleep patterns, and preventive behaviors among coronavirus patients in Northern India

Jaivinder Yadav[1], Rajni Sharma[1], Krishan Kumar[2], Devender Rana[2], Suman Yadav[3], Akhilesh Sharma[2], Lokesh Saini[4], Divyansh Sharma[5], Aryan Saxena[6], Pratap Patra[7], Muskaan Sexena[8], VikasSuri[9]

[1]Department of Pediatrics, PGIMER Chandigarh, Punjab, India, [2]Department of Psychiatary, PGIMER Chandigarh, Punjab, India, [3]Department of Anatomy, PGIMS Rohtak, Haryana, India, [4]Department of Pediatrics, AIIMS Jodhpur, Rajasthan, India, [5]Department of Psychology, Goswami Ganesh Dutta Sanatan Dharma College, Chandigarh, Punjab, India, [6]Department of Economics, Institute of Technology, Pilani, Rajasthan, India, [7]Department of Pediatrics AIIMS Patna, Bihar, India, [8]Department of Economics, Ashoka University, Sonepat, Haryana, India, [9]Department of Internal Medicine, PGIMER Chandigarh, Punjab, India

Abstract

Background: Different clinical manifestations were revealed by the distinct waves of the coronavirus. The pandemic had a multifaceted impact on mental health, sleep patterns, and associated fear. **Materials and Methods:** It was an observational online survey using by using Google Forms in the city of Chandigarh between April 2020 and April 2021 across three waves of the coronavirus outbreak (first wave from March 2020 to May 2020, second wave from June 2020 to January 2021, and third wave from February 2021 to April 2021). Fear of coronavirus disease (COVID), preventive behaviors, insomnia-related problems, and impact of the event were assessed by using standardized scales. **Results:** The participants who were infected during the first phase exhibited significantly higher levels of distress, loss of control over their reactions, increased fear of coronavirus and sleep problems, and also greater adherence to preventive behaviors compared to those who were infected during the second and third waves. A tendency to emerge post-traumatic stress disorder (PTSD) was seen in 68 (58.1%) of the participants (Peritraumatic Distress Inventory (PDI) score >14) and 34 (29.1%) of all the participants (PDI score >23). Overall, 66 (56.4%) participants reported having insomnia. About 24 people (20.5%) had clinical concerns about PTSD, 20 people (17.1%) had probable PTSD diagnoses, and 16 people (13.7%) experienced a severe coronavirus disease 2019 (COVID-19) pandemic impact on their lives. **Conclusion:** The first wave of COVID-19 had a greater psychological impact than subsequent waves. Further research must fill important gaps in our knowledge of the clinical range and long-term effects.

Keywords: Adherence, COVID-19, distress, fear, pandemic, psychological impact, sleep

Address for correspondence: Dr. Rajni Sharma, Department of Pediatrics, Advance Pediatrics Centre, Post Graduate Institute of Medical Sciences, Sector 12, Chandigarh - 160 012, Punjab, India.
E-mail: rajnigugu@yahoo.com

Received: 02-11-2023 **Revised:** 11-02-2024
Accepted: 16-02-2024 **Published:** 11-09-2024

Access this article online

Quick Response Code:

Website: http://journals.lww.com/JFMPC

DOI: 10.4103/jfmpc.jfmpc_1768_23

How to cite this article: Yadav J, Sharma R, Kumar K, Rana D, Yadav S, Sharma A, *et al*. Surviving the storm: Wave-wise comparison of the pandemic's Impact on mental health dynamics, sleep patterns, and preventive behaviors among coronavirus patients in Northern India. J Family Med Prim Care 2024;13:3621-7.

Introduction

The first wave of coronavirus disease (COVID) began in March 2020 and peaked around September 2020, and there was a psychological catastrophe due to new and unknown threats.[1] By April 30, 2021, India had confirmed 4,60,2472 cases, or the six-figure threshold, for COVID-positive cases.[2] The Ministry of Health and Family Welfare confirmed 11,000 cases by April 18, 2020, and 2,73,810 confirmed cases by February 2021 in India.[3] People were afraid as a result of the rapid spread of the coronavirus and lack of oxygen. The isolation of COVID-positive patients contributed to heightened levels of anxiety and distress among them.[4]

The psychosocial effects of coronavirus disease 2019 (COVID-19) in patients who had coronavirus infections have been extensively explored. These studies primarily include hospitalized individuals. Most of the studies have reported a higher prevalence of anxiety depression and poor sleep quality.[5-7] In a meta-analysis, Deng *et al.*, 2021 found that 34% (95% confidence interval (CI): 19–50%) of COVID-positive patients had sleeping difficulties, 47% had depression, and 45% had anxiety.[8] A study from Poland found that coronavirus-infected patients were more likely to experience anxiety (32.69%) and depression (23.14%),[9] while an Indian study found that depression was present in 29% and anxiety was present in 20.8% of confirmed cases.[10] Major psychological impacts were fatigue (63%), sleep issues (26%), and anxiety or depression in 23% of the study group.[11]

The psychological impact was variable in the three major waves in India. The initial wave introduced an unprecedented level of uncertainty and fear, disrupting the fabric of daily life. As the virus spread, the second wave exacerbated these feelings, bringing forth a surge of anxiety and grief as healthcare systems were overwhelmed and mortality rates soared. The third wave, although less lethal due to vaccination efforts, still left indelible marks of trauma and distress.

The present study examines the impact of various COVID-19 waves on the psychological health of affected patients.

Subjects and methods

Study design: Observational study

Procedure: The present study was approved by the institute ethics committee (INT-IEC 2020-SPL722). After getting digital and electronic consent, an anonymous online survey was conducted using Google Forms between April 2020 and April 2021. Individuals with confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) who provided consent were included in the study, whereas suspected and unconfirmed cases, who did not give consent, and participants with prior history of psychiatric and post-traumatic illness were excluded from the study. Validated and Hindi-translated scales (Fear of COVID Scale,[12] Preventive Behavior scale,[13] Peritraumatic Distress Inventory (PDI),[14] Insomnia Severity Index,[15] and Impact of Event Scale-Revised (IES-R)) were used to explore the impact of the pandemic on the mental health of COVID-positive patients.[16]

Sample size calculation: Up until the end of April 2021, we estimated that there will be 42,500 confirmed cases in Chandigarh. The sample size was then calculated using Cochrane's calculation for a finite population. The estimated sample size for this study was 96, and at least 96 respondents were required to achieve a 95% confidence level with real values within 10% of the survey value. Google forms for the study were sent to 206 participants to guarantee better stability of variance and covariance (n 206).

Statistical Analysis: Data obtained was analyzed using IBM SPSS version 23.0 Statistics for Windows (IBM Corp., Armonk, NY). To assess whether the data had a normal distribution, the Kolmogorov–Smirnov test was applied. Descriptive statistics were used in terms of frequency, percentage, mean, and standard deviation. Since data was not normally distributed, non-parametric tests were applied for further analysis. Where applicable, the Mann–Whitney U test and Kruskal–Wallis tests were used to compare groups. The relationship between demographic and clinical characteristics was investigated using Spearman's rank correlation coefficients.

Results

Out of 206 participants approached, a total of 117 COVID-positive patients from Chandigarh gave their consent (response rate 56.79%) and were enrolled in the study. Participants were divided into three groups. Group 1 (n = 37) consisted of individuals who contracted the coronavirus between March 2020 and May 2020 (first wave), Group 2 (n = 38) between June 2020 and January 2021 (second wave), and Group 3 (n = 42) from February 2021 to April 2021 (third wave). Participants' average age was 38.08 ± 9.81. Table 1 lists demographic data such as gender, education, occupation, family type, locality, and family income.

The majority of participants about 97 (82.9%) had recovered at the time of inclusion in the study, and only 20 (17.1%) were still actively infected with the coronavirus. The majority of them had moderate symptoms (70.9%), and 102 (87.2%) stayed at home when they were infected. Very few of them about 15 (12.8%) required hospitalization. The majority of the participants about 93 (79.5%) reported that adherence to precautions and proper implementation of preventive measures is very crucial to avoid being infected. We found that 84 cases (71.8%) had direct contact with positive individuals, while 33 cases (28.2%) had an unknown source of infection. Furthermore, 80 (68.4%) participants expressed that the pandemic had reinforced their faith in God, and 37 (31.6%) stated that it had taught them to differentiate between essentials and non-essentials. Additionally, the majority of participants, totaling 100 (85.5%), had not traveled in the previous two weeks (Supplementary Table 1).

Table 1: Demographic description of the participants

Demographic parameters	Group 1 (*n*=37)	Group 2 (*n*=38)	Group 3 (*n*=42)
Age (in Years)	38.18±10.20	38.55±10.64	37.57±8.87
Range	(23-56 Years)	(22-56 Years)	(19-58 Years)
Gender			
Male	15 (40.5%)	13 (34.2%)	16 (38.1%)
Female	22 (59.5%)	25 (65.8%)	26 (61.9%)
Education			
Intermediate	6 (16.2%)	6 (15.8%)	10 (23.8%)
Graduate	21 (56.8%)	15 (39.5%)	10 (23.8%)
Postgraduate/Doctorate	10 (27.0%)	17 (44.7%)	22 (52.4%)
Occupation			
Unemployed/House Makers Agriculture/Shop/sale	5 (13.5%)	7 (18.4%)	5 (11.9%)
Clerical/Ministerial staff	3 (8.1%)	2 (5.3%)	5 (11.9%)
Associate Professional/Professional	8 (21.6%)	5 (13.2%)	10 (23.8%)
	21 (56.8%)	24 (63.2%)	22 (52.4%)
Family Income (in Rupees)			
≤Rs. 39, 032	17 (45.9%)	12 (31.6%)	18 (42.9%)
Rs. 39,033–Rs. 78,062	5 (40.5%)	9 (50.0%)	19 (45.2%)
≥Rs. 78,063	5 (13.5%)	7 (18.4%)	5 (11.9%)
Family Type			
Nuclear	13 (35.1%)	11 (28.9%)	9 (21.4%)
Joint	24 (64.9%)	27 (71.7%)	33 (78.6%)
Locality			
Urban	27 (73.0%)	30 (78.9%)	33 (78.6%)
Rural	10 (27.0%)	8 (21.1%)	9 (21.4%)

Results of the prevalence of symptoms among the participants revealed that 76 (65%) had fever, 94 (80.3%) sore throat, 33 (28.2%) breathlessness, 35 (29.9%) dry cough, 25 (21.4%) reported having a headache, 64 (54.7%) myalgia, and 67 (57.3%) reported experiencing dyspnea. Regarding smell loss, 66 (56.4%) lost it in the first week of infection and regained it within two weeks, and 15 (12.8%) regained it more than two weeks later. In terms of taste, 50 participants (42.7%) did not lose their sense of taste, 20 (17.1%) lost it after the first few weeks, and 47 (40.2%) experienced the loss during that time. A majority of participants about 95 (81.2%) had no history of chronic illness whereas, 10 (8.5%) had type II diabetes and 12 (10.3%) had a history of hypertension.

The majority of them, 102 (87.2%), were not immunized. When inquired about the reasons for not receiving the COVID vaccine, 75 (64.1%) stated their concerns about potential side effects, while 25 (21.4%) expressed doubts about its efficacy.

Acetaminophen (Paracetamol) was the most commonly used treatment method used by 81 (69.2%), followed by adhering to preventive measures 73 (62.4%), taking vitamin C and zinc supplements 71 (60.7%), hot water 68 (58.1%), and gargles 66 (55.6%). About half of the study participants were engaged in reading or writing (54.7%), and used social media (52.1%) during the quarantine period, 48 (41%) finished their unfinished work and 45 (38.5%) stated that the quarantine period was a challenging time for them [Table 2].

(Group 1: March 2020–May 2020; Group 2: June 2020–January 2021; Group 3: February 2021–April 2021)

Fear of COVID and preventive behaviors

In comparison to participants who were infected during the second and third waves of spread, participants who were infected during the first wave of coronavirus spread reported significantly higher levels of fear of COVID (*P* value = 0.020), although non-significant they were adhering to preventive measures more strictly. They also demonstrated a markedly more terrified response than the other two groups [Table 2].

Distress and insomnia

A tendency to emerge post-traumatic stress disorder (PTSD) was evident in 68 (58.1%) participants with a PDI score >14, and 34 (29.1%) participants with a PDI score >23. Wave-wise comparison of the severity of distress severity revealed that 27 (73%) participants in the first wave, 24 (63.2%) in the second wave, and 17 (40.5%) in the third wave had PDI scores >14. Similarly, 15 participants (40.5%) in G1, 10 (26.3%) in G2, and 9 (21.4%) in G3 exhibited PDI scores surpassing 23 [Figure 1].

The first wave was from March 2020 to May 2020, the second wave from June 2020 to January 2021, and the third wave from February 2021 to April 2021.

The findings regarding the severity of insomnia revealed that overall, 23.7% of participants experienced moderate insomnia, 45.5% sub-threshold insomnia, and 49.9% reported no clinically significant insomnia. Participants of the first wave had greater rates of insomnia than participants of the second and third waves [Figure 2].

Table 2: Comparative scores of participants on various clinical measures and associations

Variables	Group 1 Mean Rank	Group 2 Mean Rank	Group 3 Mean Rank	K Wallis	*P*
Fear of COVID-19 Scale (FCS 19S)					
Emotional Fear Reaction	71.07	48.45	57.92	8.465	0.015**
Expressional Fear	67.68	55.53	54.50	3.631	0.163
Total FCV	71.20	49.74	56.53	71.68	0.020**
Preventive COVID-19 Behavior Scale (PCV 19BS)					
Preventive Behavior	64.29	59.20	54.04	1.849	0.397
Peritraumatic Distress Inventory (PDI)					
Life Threat	65.04	65.93	47.40	7.707	0.021**
Loss of Control	70.08	56.82	51.21	6.496	0.039**
Helplessness Anger	68.93	62.57	47.02	9.274	0.011**
Guilt and Shame	69.77	58.99	49.52	7.262	0.026**
Total PDI	69.14	62.95	46.50	9.541	0.008**
Insomnia Severity Index (ISI)					
Insomnia	66.20	54.39	56.82	2.566	0.277
Impact of Event Scale-R					
Intrusion	71.57	52.51	53.80	7.491	0.024**
Avoidance	61.64	67.55	48.94	6.363	0.042**
Hyperarousal	69.05	54.05	54.62	4.800	0.091
Total IES	70.35	57.62	50.25	7.018	0.030**

*Values significant at 0.05 levels. **Values significant at 0.01 levels

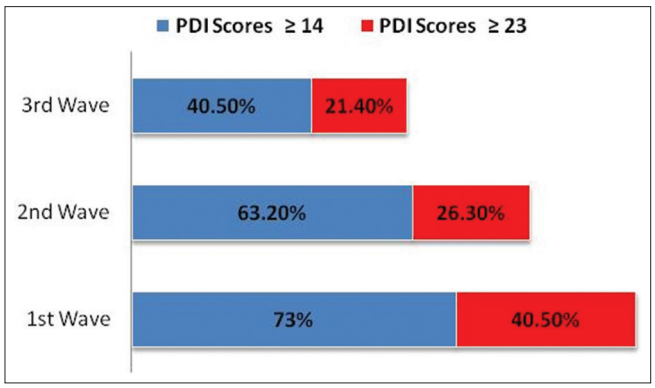

Figure 1: Severity of distress among participants across three waves (cut-off scores 14 and 23)

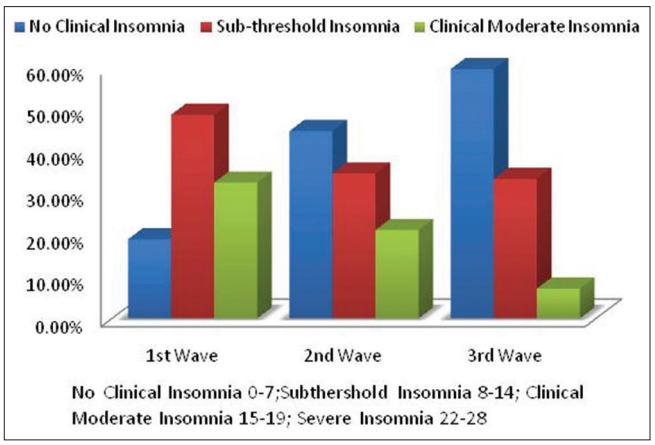

Figure 2: Severity of insomnia among participants across three waves

The first wave was from March 2020 to May 2020, the second wave from June 2020 to January 2021, and the third wave from February 2021 to April 2021.

Impact of event

The impact of event scale was used to assess people's subjective reactions to the COVID-19 epidemic. In our study, 57 (48.7%) experienced no impact, 24 (20.5%) had clinical concerns about PTSD, 20 (17.1%) had probable PTSD diagnoses, and 16 (13.7%) experienced a severe COVID-19 pandemic impact on their lives. We discovered that compared to the other two groups, participants who contracted the coronavirus during the early stages of its spread experienced significantly more intrusive thoughts and dissociative feelings ($P = 0.024$), were less responsive and avoided situations (P value = 0.042), and were more hypervigilant and shocked (P value = 0.011) [Table 2]. Compared to medieval and later phases, the earliest phase of COVID dissemination had a noticeably bigger influence on patients' lives (P value = 0.002) [Table 3 and Figure 3].

The first wave was from March 2020 to May 2020, the second wave from June 2020 to January 2021, and the third wave from February 2021 to April 2021.

Association between demographic and clinical variables

Correlation analysis findings revealed several significant associations between study measures and demographic variables. Significant positive associations were found between measures of distress and fear of COVID. Those who exhibited higher fearful reactions also lost their control (P value = 0. 003) and reported COVID as life-threatening (P value = 0. 042). We also observed that dimensions of the Impact of Event Scale showed a positive association with emotional fear reactions, overall scores of fears, insomnia, family type, and education. Detailed findings of correlation analysis are presented in Table 3.

Table 3: Correlations between different clinical measures

	Emotional fear	Expressional fear	Overall fear	Insomnia	Age	Gender	Family Type	Education
Life threat (PDI)	NS	NS	0.197*	240**	NS	NS	0.287**	NS
Loss of control (PDI)	0.276**	NS	0.232*	0.195*	NS	NS	NS	NS
Helplessness Anger (PDI)	NS	NS	NS	0.333**	NS	NS	0.235*	NS
Guilt shame (PDI)	0.277**	NS	0.243**	0.187*	0.239**	0.220*	0.235*	NS
Overall distress	0.232*	0.189*	0.202*	0.246**	NS	NS	0.257**	NS
Intrusion (IES)	0.191*	NS	0.247**	0.245**	NS	NS	0.272**	0.191*
Avoidance (IES)	0.229*	NS	0.204*	NS	NS	NS	NS	NS
Hyperarousal (IES)	,191*	NS	0.194*	0.202*	NS	NS	0.235*	0.193*
Overall impact (IES)	0.240**	0.187*	0.275**	0.189*	NS	NS	0.224*	NS

*Values significant at 0.05 levels. **Values significant at 0.01 levels

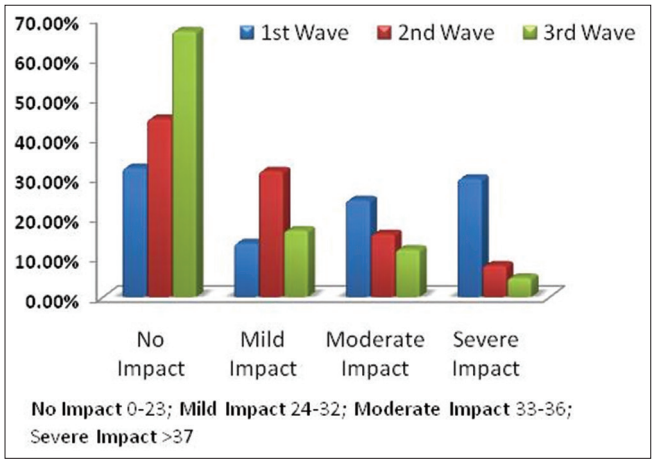

Figure 3: Severity of impact of pandemic

Few significant associations were also observed between demographic and clinical variables. Compared to younger participants (aged 19 to 35), older participants (aged 36-58) exhibited higher degrees of guilt and shame associated with coronavirus infection (Aged 19-35 years: mean rank 50.57; Aged 36-58 years: mean rank 64.86; Mann–Whitney U: 2.282; *P* value = 0.023). Males were found to adhere to preventive activities more strictly than females (Males: mean rank 66.82; Females 54.29; Mann–Whitney U: 1.948; *P* value = 0.050). On the other hand, female participants indicated that they felt more guilt and shame about being infected than male participants (Males: mean rank 49.58; Females 64.68; Mann–Whitney U: 2.374; *P* value = 0.018).

Education was positively associated with intrusive thoughts and hyperarousal. Less educated participants had more intrusive thoughts (Secondary education 22: mean rank 72.16; Graduation 46: 60.83; Postgraduation 49:50.76; K Wallis: 6.195; *P* value = 0.045) higher education was associated with increased aggression levels (Secondary education 22: mean rank 70.86; Graduation 46: 62.01; Postgraduation 49:50.12; K Wallis: 6.283; *P* value = 0.043). Participants living in nuclear families were significantly more distressed (Nuclear: mean rank 72.85; Joint 53.56; Mann–Whitney U: 2.771; *P* value = 0.006) and the disease coronavirus had a more negative impact on them (Nuclear: mean rank 71.08; Joint 54.26; Mann–Whitney U: 3.094; *P* value = 0.016) than participants living in nuclear families.

Discussion

Wave-wise comparison in our study fills a major gap in the literature by enabling a thorough understanding of how the psychological impact, sleep patterns, and preventive behaviors evolved over time. The majority of participants (88%) in our study claimed that the pandemic had changed their perspective about life. In line with a previous study, 68.4% of our participants stated that it had increased their faith in God, and 31.6% said it had taught them how to tell the difference between wishes and needs.[10] In keeping with earlier findings, we also discovered that the majority of study participants (70.9%) had minor symptoms, and 87.2% stayed at home and adhered to the doctor's prescribed course of treatment in addition to using over-the-counter medications. They were conversing with family and friends, reading, writing, using social media, and finishing off unfinished tasks.[17,18]

Most of our participants (79.5%) strictly followed preventive measures, in contrast to the results of a previous study from Saudi Arabia conducted during the HINI outbreak, which showed that 61% of participants did not follow precautionary measures to prevent infection.[19] The most frequent symptoms were loss of taste, smell sensitivity, fever, sore throat, myalgia, and discomfort. Previous investigations have revealed similar results.[19,20]

In addition to rigorous lockdowns, social shame, fear over isolation, and quarantine, these patients had a rare condition about which nothing was known regarding the prognosis and treatment. 90% of the participants showed symptoms of recovery throughout the intermediate and third phases. In a prior study by Harper *et al.* (2021),[20] similar reactions were noted in the study population who tested positive for COVID. Participants who were found COVID-positive during the first wave exhibited significantly greater fear than participants who got infected during the second and third waves (*P* value = 0.020) and although non-significant exhibited strict adherence to preventive behaviors (*P* value = 0.397). This greater fear and adherence might be attributed to the abrupt and unforeseen nature of the initial outbreak.

Based on a PDI score >14, we found that 58.1% of individuals in our study showed a propensity to develop PTSD, and 29.1%

showed more severe distress (PDI score >23). Whereas, in another research, 35% of hospitalized COVID-positive patients exhibited PTSD symptoms even after recovery.[21] In accordance with a prior study, where PTSD symptoms were reported to be present in 53.6% of participants.[22] One study found that 33.5% of people in Greece and Cyprus had values that suggested a probable diagnosis of PTSD, and 17.4% of them had IES-R levels that overall indicated clinical concern for PTSD.[23] These findings demonstrate how the COVID-19 pandemic significantly affected people's mental health during and after it occurred. It is important to note that there are significant differences in the rates of distress across the three waves, and these differences may be due to how the epidemic has affected certain population groups differently.

In a previous study from China, they found that moderate to severe depression affected 16.5% of people while anxiety affected 28.8%, these distress rates are comparatively lower than what we found in our study.[24] Our observations of distress and probable PTSD in COVID-19 patients are comparable with a systematic analysis of post-infection assessments among hospitalized COVID-positive patients, which found a 35% prevalence of depressive symptoms.[21] According to our study, there are differences in the degree of distress experienced by participants across the three waves.

Insomnia was reported by 56.4% of participants in our study, with various degrees of severity. Our findings are in line with those of an earlier study in which 42.1% of participants reported experiencing insomnia[25] and 57.1% of individuals reported having poor sleep quality.[26] The prevalence of insomnia in our study was significantly higher than in only a previous study, where 18.6% of Italians reported moderate insomnia.[27] Notably, our findings revealed that moderate insomnia affected 32.4% of first-wave participants, 21.1% of second-wave participants, and 7.1% of third-wave participants. The results are consistent with the systematic review's claim that insomnia occurred moderately (34%) during the initial phase of coronavirus spread.[21]

Positive correlations between distress, the impact of the incident, insomnia, and fear reported by the participants highlight the multifaceted nature of fear, its relationship to an array of emotional responses, and its complex interaction with demographic factors. Age was positively correlated with experiencing more anxiety and guilt because it is linked to a decreased capacity to deal with unforeseen circumstances and a greater risk of catching an infection. Older age may also be linked to many comorbid conditions. Participants who were females and had lower levels of education exhibited higher anxiety symptoms and were more fearful. In line with a previous study, we found that participants with lower levels of education were more concerned about social security and income loss; as a result, these issues had a greater psychological impact on them.[28]

Major limitations of the current study are small sample size, exclusion of patients with a prior history of psychiatric illness who may be more prone to developing mental illness, and single-site study. These factors also may possibly contribute to the psychological impact of the COVID-19 pandemic on the mental health of individuals infected with the coronavirus. Therefore, it is important to interpret the results of the current study carefully.

Conclusion

The study provides valuable insight into the psychological implications of the COVID-19 pandemic on sleep habits, mental health, and preventive measures in Northern India during various waves. Higher levels of distress, anxiety, and insomnia among those infected during the pandemic's initial wave suggest that this phase of the outbreak had a greater psychological impact. The study highlights the importance of early detection of PTSD, targeted mental health interventions, and effective management of sleep disorders following pandemic events. The findings highlight the dynamic nature of mental health consequences during crises and have pertinent implications for pandemic preparedness and healthcare systems. Further research should attempt to address the known limitations and also explore the long-lasting effects of the pandemic on psychological well-being.

Acknowledgement

The author(s) express gratitude to all the developers of the psychological scales used in the present study and we also extend our gratitude to all the participants for their kind concern and help.

Key messages:

1. There was a variable psychological effect of three phases of coronavirus disease 2019 (COVID-19) in affected patients. The first phase was associated with fear, anguish, and increased compliance with preventive behavior.
2. Human behavior and response change with exposure. The second and third phases had less fear and better sleep.
3. Building resilience and preparedness for pandemics and natural disasters can help mitigate long-term adverse effects on mental health.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, *et al.* Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry 2020;7:228-9. doi: 10.1016/S2215-0366(20)30046-8.
2. Aarogya Setu, NIC eGOV Mobile Apps. Available from: https://play.google.com/store/apps/details?id=nic.goi.aarogyasetu&hl=en, last updated on: COVID19 India API (2020) https://covid-19india-api.herokuapp.com/[Last

accessed on 2021 Apr 30].

3. Ministry of Health and Family Welfare a, Government of India. https://www.mohfw.gov.in/pdf/GuidelinesDT13032 020.pdf [Last accessed on 2021 May 10].
4. Wang M, Hu C, Zhao Q, Feng R, Wang Q, Cai H, *et al.* Acute psychological impact on COVID-19 patients in Hubei: A multicenter observational study. Transl Psychiatry 2021;11:133. doi: 10.1038/s41398-021-01259-0.
5. Magnúsdóttir I, Lovik A, Unnarsdóttir AB, McCartney D, Ask H, Kõiv K, *et al.* Acute COVID-19 severity and mental health morbidity trajectories in patient populations of six nations: An observational study. Lancet Public Health 2022;7:e406-e416. doi: 10.1016/S2468-2667(22) 00042-1.
6. Xie Y, Xu E, Al-Aly Z. Risks of mental health outcomes in people with covid-19: Cohort study. BMJ 2022;376:e068993. doi: 10.1136/bmj-2021-068993.
7. Taquet M, Luciano S, Geddes JR, Harrison PJ. Bidirectional associations between COVID-19 and psychiatric disorder: Retrospective cohort studies of 62 354 COVID-19 cases in the USA. Lancet Psychiatry 2021;8:130-40. doi: 10.1016/S2215-0366(20)30462-4.
8. Deng J, Zhou F, Hou W, Silver Z, Wong CY, Chang O, *et al.* The prevalence of depression, anxiety, and sleep disturbances in COVID-19 patients: A meta-analysis. Ann N Y Acad Sci 2021;1486:90-111. doi: 10.1111/nyas.14506.
9. Chodkiewicz J, Miniszewska J, Krajewska E, Biliński P. Mental health during the second wave of the COVID-19 pandemic-polish studies. Int J Environ Res Public Health 2021;18:3423. doi: 10.3390/ijerph18073423.
10. Sahoo S, Mehra A, Dua D, Suri V, Malhotra P, Yaddanapudi LN, *et al.* Psychological experience of patients admitted with SARS-CoV-2 infection. Asian J Psychiatr 2020;54:102355. doi: 10.1016/j.ajp.2020.102355.
11. Huang Y, Zhao N. Mental health burden for the public affected by the COVID-19 outbreak in China: Who will be the high-risk group?. Psychol Health Med 2021;26:23-34. doi: 10.1080/13548506.2020.1754438.
12. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: Development and initial validation. Int J Ment Health Addict 2022;20:1537-45. doi: 10.1007/s11469-020-00270-8.
13. World Health Organization (2020a). Q and A on coronaviruses (COVID-19). Available from: https://www.who.int/news-room/q-a-detail/q-a-coronaviruses#:~:text=symptoms. [Last accessed on 2020 Apr 12].
14. Brunet A, Weiss DS, Metzler TJ, Best SR, Neylan TC, Rogers C, *et al.* The peritraumatic distress inventory: A proposed measure of PTSD criterion A2. Am J Psychiatry 2001;158:1480-5. doi: 10.1176/appi.ajp.158.9.1480.
15. Bastien CH, Vallières A, Morin CM. Validation of the insomnia severity index as an outcome measure for insomnia research. Sleep Med 2001;2:297-307. doi: 10.1016/s1389-9457(00)00065-4.
16. Motlagh H. Impact of Event Scale-revised. J Physiother 2010;56:203. doi: 10.1016/s1836-9553(10)70029-1. PMID: 20795930.
17. Sakalli E, Temirbekov D, Bayri E, Alis EE, Erdurak SC, Bayraktaroglu M. Ear nose throat-related symptoms with a focus on loss of smell and/or taste in COVID-19 patients. Am J Otolaryngol 2020;41:102622. doi: 10.1016/j.amjoto.2020.102622.
18. Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L, *et al.* Impact of COVID-19 pandemic on mental health in the general population: A systematic review. J Affect Disord 2020;277:55-64. doi: 10.1016/j.jad. 2020.08.001.
19. Alkhamees AA, Alrashed SA, Alzunaydi AA, Almohimeed AS, Aljohani MS. The psychological impact of COVID-19 pandemic on the general population of Saudi Arabia. Compr Psychiatry 2020;102:152192. doi: 10.1016/j.comppsych.2020.152192.
20. Harper CA, Satchell LP, Fido D, Latzman RD. Functional fear predicts public health compliance in the COVID-19 pandemic. Int J Ment Health Addict 2021;19:1875-88. doi: 10.1007/s11469-020-00281-5.
21. Rogers JP, Chesney E, Oliver D, Pollak TA, McGuire P, Fusar-Poli P, *et al.* Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: A systematic review and meta-analysis with comparison to the COVID-19 pandemic. Lancet Psychiatry 2020;7:611-27. doi: 10.1016/S2215-0366(20)30203-0.
22. Qi R, Chen W, Liu S, Thompson PM, Zhang LJ, Xia F, *et al.* Psychological morbidities and fatigue in patients with confirmed COVID-19 during disease outbreak: prevalence and associated biopsychosocial risk factors. MedRxiv. 2020 May 11. doi.org/10.1101/2020.05.08.20031666.
23. Galanis P, Andreadaki E, Kleanthous E, Georgiadou A, Evangelou E, Kallergis G, *et al.* Determinants of psychological distress during the COVID-19 pandemic and the lockdown measures: A nationwide on-line survey in Greece and Cyprus. medRxiv 2020;27:2020-10. doi.org/10.1101/2020.10.25.20219006
24. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, *et al.* Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) Epidemic among the general population in China. Int J Environ Res Public Health 2020;17:1729. doi: 10.3390/ijerph17051729.
25. Partinen M. Sleep research in 2020: COVID-19-related sleep disorders. Lancet Neurol 2021;20:15-7. doi: 10.1016/S1474-4422(20)30456-7.
26. Casagrande M, Favieri F, Tambelli R, Forte G. The enemy who sealed the world: Effects quarantine due to the COVID-19 on sleep quality, anxiety, and psychological distress in the Italian population. Sleep Med 2020;75:12-20. doi: 10.1016/j.sleep.2020.05.011.
27. Bacaro V, Chiabudini M, Buonanno C, De Bartolo P, Riemann D, Mancini F, *et al.* Insomnia in the Italian population during Covid-19 outbreak: A snapshot on one major risk factor for depression and anxiety. Front Psychiatry 2020;11:579107. doi.org/10.3389/fpsyt.2020.579107
28. Yan S, Xu R, Stratton TD, Kavcic V, Luo D, Hou F, *et al.* Sex differences and psychological stress: Responses to the COVID-19 pandemic in China. BMC Public Health 2021;21:79. doi: 10.1186/s12889-020-10085-w.

Supplementary Table 1

Subjective Questions

1. How important it is for you to follow precautionary measures strictly?

Yes 93(79.5%)	No 24(20.5%)

2. What is your current status?

Affected 20(17.1%)	**Recovered** 97(82.9%)

3. Source of infection/contact history

Contact with positive/ suspected patient 84(71.8%)	**unknown source** 33(28.3%)

4. Any travel history (Two week time of being infected with COVID 19)

Yes 17(14.5%)	**No** 100(85.5%)

5. Have COVID 19 pandemic changed your perspective towards life?

Yes 103 (88%)	**No** 14(12%)

6. What impact COVID 19 pandemic had in your life ?

Faith in God 80(68.4%)	Differentiate essential from non essentials 37(31.6%)

7. Do you already had any chronic disease?

Diabetes 10(8.5%)	**Hypertension** 12(10.3%)	**No problem** 95 (81.2%)

8. Where did you stayed after being diagnosed?

Home 102 (87.2%)	Hospital 15(12.8%)

9. How would you rate the severity of your symptoms of infection with COVID 19?

Mild 83(70.9%)	**Moderate** 25(21.4%)	**Severe** 9 (7.7%)

10. Symptoms you had?

Fever 76(65%)	Headache 25(21.4%)	Dyspenea 26(22.2%)
Sore throat 94(80.3%)	Dry Cough 35(29.9%)	Loss of taste 67 (57.3%)
Breathlessness 33(28.2%)	Myalgia 64(54.7%)	Loss of taste smell 74(63.2%)

11. After how many days of coming positive you lost your smell sensation?

Within 1 week 66(56.4%)	Within 2 weeks 15(12.8%)	Not lost 36(30.8%)

12. After how many days of coming positive you lost your taste sensation?

Within 1 week 47(40.2%)	Within 2 weeks 20(17.1%)	Not lost 50(42.7%)

13. After how many days you regained smell?

Within 1 week ----	Within 2 weeks 37(31.6%)	More than 2 weeks 44(37.6%)

14. After how many days you regained taste?

Within 1 week -----	Within 2 weeks 54(46.7%)	More than 2 weeks 10(8.5%)

15. Have you got vaccinated for COVID 19?

Vaccinated 15(12.8%)	Not Vaccinated 102 (87.2%)

16. Any apprehension about COVID 19 vaccination

May not be affected 25(21.4%)	May have side effect 75(64.1%)

17. Would you get vaccinated now?

Yes 117(100 %)	**No** 0(0%)

18. what Treatment have you taken for COVID 19?

Antihistaminic 23(19.07%)	Hot Water 68(58.1%)	Ayurveda Medicine Coronil 37(31.6%)
Antibiotic 26(23.8%)	Multivitamin 19(16.2%)	preventive measure 73(62.4)
Pcm 81(69.2%)	Steam 30(31.7%)	
Gargle 65(55.6%)	Vitamin C & Zink 71(60.7%),	

19. Activities you were involved in during home quarantine?

Meditation/Exercise 26(22.2%)	Watching movie 45(38.5%)	Chatting with friends family 48(41%)
Religious Activities 31(26.5%)	Using Social media 61(52.1%)	Organizing householdwork18(15.4%)
Reading/Writing 64(54.7%)	Pending work/ 48(41%)	

20. How difficult it was to stay alone during quarantine period?

Not at all	**A little bit**	**Somewhat**	**Quite a bit**	**Very Difficult**
21(17.09%)	26(22.2%)	45(38.5%)	18(15.4%)	7(6.0%)