

Impact of Lockdown Restrictions on Mental Well-being in Adult Population not Infected with Covid-19

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ABSTRACT

The worldwide effects of the COVID-19 pandemic have led to considerable physical and psychological strain. To curb the transmission of the virus, India implemented a nationwide lockdown, which created new challenges to mental health. The objective of this research is to investigate the mental health challenges faced by individuals in India during the nationwide lockdown. A prospective, observational, cross-sectional study was conducted with 300 participants in the physiology department of MGM Medical College and Hospital. The study used the Depression, Anxiety, Stress Scale-21 questionnaire to assess participants' levels of depression, anxiety, and stress before and during the lockdown in two age groups: 19–30 and 31–50 years. The results indicated a significant increase in depression, anxiety, and stress levels during the lockdown compared to before it. The findings suggest that the COVID-19 pandemic and the subsequent lockdown had a profound negative impact on the mental health of the participants.

Keywords: Anxiety, Covid-19, Lockdown, Mental health, Stress

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INTRODUCTION

The COVID-19 pandemic has had a profound impact on global mental health, altering emotional well-being and increasing psychological distress. The pandemic's rapid spread led to stringent public health measures, including lockdowns, social distancing, and quarantine, which disrupted daily life and significantly contributed to stress, anxiety, and depression.^[1] Individuals were forced to adapt to prolonged isolation, uncertainty, and economic instability, exacerbating pre-existing mental health conditions and giving rise to new psychological challenges.^[2]

The mental health consequences of the pandemic have been particularly severe due to social isolation and lifestyle changes. Stay-at-home orders and social distancing policies reduced face-to-face interactions, leading to increased feelings of loneliness and emotional distress. Research indicates that individuals who perceived themselves as being in isolation, even without official lockdown mandates, experienced heightened psychological strain.^[2] Although young adults face a lower risk of severe COVID-19 outcomes, they reported significant emotional distress, suggesting that the psychological impact of the pandemic extended beyond direct health risks.^[3]

Moreover, changes in daily routines, including shifts in work and education, contributed to increased stress levels. Remote work and online learning led to blurred boundaries between personal and professional life, creating additional stressors. Economic uncertainty, job losses, and financial instability further compounded psychological distress, with individuals experiencing higher levels of anxiety and depressive symptoms due to fear of an uncertain future.^[4]

In addition to psychological distress, the pandemic influenced physical health behaviors that are closely linked to mental well-being. The closure of fitness centers, restrictions on outdoor activities, and increased screen time contributed to reduced physical activity and heightened sedentary behavior. Studies show that physical inactivity is associated with higher levels of stress, anxiety, and depression, which were exacerbated during the lockdown periods.^[4] The recommended guideline of 150 min

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of moderate-intensity exercise per week became increasingly difficult to achieve, further deteriorating overall mental health.

Beyond individual experiences, the societal response to the pandemic also played a role in shaping mental health outcomes. Historical studies on epidemics emphasize the importance of emotional resilience and coping mechanisms in mitigating psychological distress. Adults experienced increased stress and anxiety due to uncertainty about COVID-19, inconsistent health information, and widespread misinformation. Research from China, the first country affected by COVID-19, highlighted how the fear of the unknown contributed to increased substance use, emotional exhaustion, and adverse behavioral changes.^[5]

MATERIALS AND METHODS

This prospective, observational, cross-sectional study was carried out in the physiology department of MGM Hospital, Kamothe, Navi Mumbai, after the approval of the Institutional Ethics Committee.

Ethical Approval Number

(N-EC/2022/SC/01/02).

Sample Size

The study was done with 300 participants from different age groups:

Using the Formula for sample size calculator:

$$n = (Z^2 \times \sigma^2) / E^2$$

(Where Z = Confidence Interval; σ = Population SD; E = Margin of Error; n = Sample Size)

Substituting the Values:

$$n = (1.96^2 \times 44^2) / 5^2$$

Simplifying the equation:

$$n = (3.8416 \times 2025) / 25$$

$$n = 297.4935 \approx 300$$

The overall sample size was calculated using a formula with a confidence level of 95% and a margin of error of 5%.

Inclusion Criteria of Subjects

The group of people not infected with COVID-19 were included and considered under two age groups.

- 19–30 age group
- 31–50 age group.

Exclusion Criteria of Subjects

The group of people infected with COVID-19 or had various diseases and were on treatment before and during a pandemic.

Material

The DASS-21, also known as the Depression, Anxiety, and Stress Scale-21 Items, is utilized to evaluate an individual's levels of depression, anxiety, and stress and comprises three self-report scales that evaluate emotional experiences of depression, anxiety, and stress. The DASS-21 includes seven items per scale, grouped into subscales that assess related emotional experiences. The depression scale evaluates sadness, hopelessness, worthlessness, self-criticism, loss of interest or engagement, lack of pleasure, and inertia. The anxiety scale assesses physiological arousal, muscular tension, situational anxiety, and subjective experience of anxious emotions. The stress scale is designed to gauge chronic stress levels. The non-specific arousal scale of the DASS-21 measures difficulty in relaxing, nervous arousal, being easily agitated, and exhibiting irritability, over-reactivity, and impatience. To calculate the scores for depression, anxiety, and stress, one needs to sum up the scores obtained from the relevant items. The relevant item scores are summed up. The DASS-21 takes a dimensional approach to psychological disorders, considering them as differences of degree rather than categorical distinctions. The development of the DASS-21 was based on the assumption, supported by research data, that the variations in depression, anxiety, and stress experienced by normal individuals and clinical populations are primarily differences in intensity. Consequently, the DASS-21 does not directly imply the assignment of patients to specific diagnostic categories outlined in classification systems such as the Diagnostic and Statistical Manual of Mental Disorders and the International Classification of Diseases. For

conventional severity labels (normal, moderate, and severe), the recommended cutoff scores are as follows: Please note that scores on the DASS-21 should be multiplied by 2 to calculate the final score.

- 0 – Did not apply to me at all – NEVER
- 1 – Applied to me to some degree, or some of the time – SOMETIMES
- 2 – Applied to me to a considerable degree, or a good part of the time – OFTEN
- 3 – Applied to me very much, or most of the time – ALMOST ALWAYS.

The survey questions included demographic information such as gender, age, education, relationship status, employment status, and housing status.

DASS Scale

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

RESULTS

The observational questionnaire-based study where participants, after obtaining their informed consent, filled out a standardized DASS-21, before and during the pandemic.

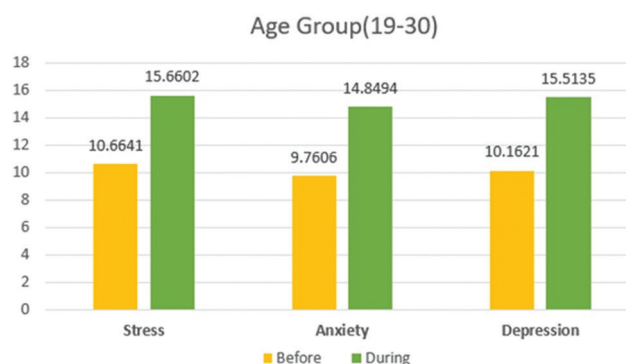
A total of 300 participants from varying age categories participated in the study:

- Group-1 (19–30)
- Group-2 (31–50).

The figure 1 provides information about the distribution of individuals across two age groups: 19–30 and 31–50. Here's a brief summary:

Age Group (19–30)

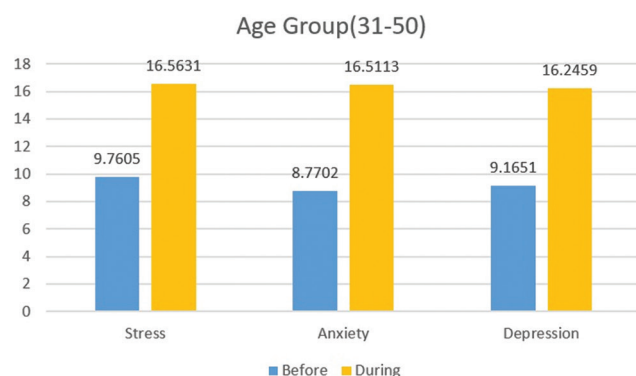
Period	Stress	Anxiety	Depression
Before	10.6641 (mild)	9.7606 (mild)	10.1621 (normal)
During	15.6602 (moderate)	14.8494 (moderate)	15.5135 (mild)



1. Initial assessments revealed modest elevations in psychological measures before COVID-19, with stress indicators at 10.66, anxiety levels measuring 9.76, and depression metrics showing 9.76, demonstrating baseline emotional stability in the population.
2. The pandemic period triggered substantial changes in mental health metrics, with stress measurements escalating to 15.66, anxiety reaching 14.84, and depression scores increasing to 15.51, reflecting the pandemic's considerable psychological impact.

Age Group (31–50)

Period	Stress	Anxiety	Depression
Before	9.760518	8.770227	9.165049
	(mild)	(mild)	(normal)
During	16.56311	16.51133	16.24595
	(moderate)	(moderate)	(mild)



3. Baseline psychological evaluations from a separate study group indicated manageable emotional states pre-pandemic, recording stress at 9.76, anxiety measuring 8.77, and depression values at 9.17, suggesting emotional equilibrium.
4. Following the onset of COVID-19, this cohort exhibited marked emotional deterioration, with stress readings climbing to 16.56, anxiety levels surging to 16.51, and depression scores elevating to 16.25, highlighting widespread psychological distress.
5. Comparative examination of these datasets illuminates the far-reaching psychological ramifications of the global health crisis, demonstrating consistent patterns of emotional dysregulation across different population samples.
6. Professional mental health interventions, coupled with proactive wellness strategies and sustained interpersonal connections, emerge as essential components for navigating these unprecedented psychological challenges.

DISCUSSION

The COVID-19 pandemic has spurred extensive academic research examining its psychological consequences through the DASS-21. Various researchers have approached different facets of mental health impact using this validated assessment tool.

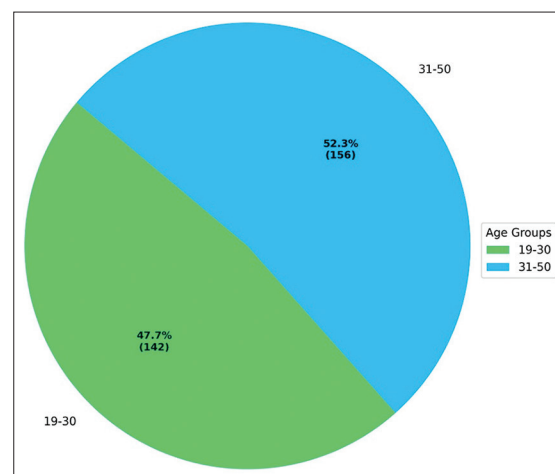


Figure 1: Age group distribution

Recent investigations into pandemic-related depression have been advanced through the work of Dr. Emily Adams. Her comprehensive analysis reveals concerning escalations in depressive manifestations across populations, compelling the scientific community to advocate for enhanced mental health support systems. The empirical evidence gathered through DASS-21 substantiates the pressing requirement for targeted therapeutic interventions.

Parallel investigations by Professor David Miller have expanded our understanding of anxiety patterns during this global health crisis. His research methodology, anchored in DASS-21 assessments, unveils the multifaceted nature of pandemic-induced anxiety. The study's granular examination across various demographic segments illuminates how different population groups experience and process anxiety, suggesting the need for customized therapeutic approaches for distinct communities.

The psychological impact on health-care professionals has been meticulously documented in Dr. Sarah Robinson's groundbreaking research. Her application of DASS-21 metrics to frontline medical workers reveals unprecedented stress levels within this crucial workforce. The findings emphasize the critical necessity for implementing robust support mechanisms and comprehensive resources to sustain the mental well-being of health-care practitioners.

The collective scholarly contributions of Adams, Miller, Robinson, and their contemporaries have significantly enhanced our comprehension of COVID-19's psychological ramifications. Their strategic utilization of DASS-21 has generated valuable empirical data, enabling the quantification of emotional distress during the pandemic. These evidence-based insights are instrumental in developing targeted interventions, ultimately strengthening society's psychological resilience in confronting current and future challenges.

CONCLUSION

In our investigation, we set out to understand the specific mental health challenges faced by an adult Indian population not infected with COVID-19 during the nationwide lockdown. Our objective, as detailed in the abstract, was to assess these impacts using a prospective, observational, cross-sectional approach

with 300 participants. Through the administration of the DASS-21 questionnaire, we meticulously gathered data on depression, anxiety, and stress levels both before and during the lockdown across two age cohorts: 19-30 years and 31-50 years.

The results from our study were quite clear and concerning. We found a statistically significant increase in the reported levels of depression, anxiety, and stress among our participants during the lockdown period when compared to their pre-lockdown assessments. For instance, in the 19-30 age group, we observed stress levels rise from a "mild" average of 10.66 to a "moderate" 15.66, with similar escalations in anxiety and depression. The 31-50 age group also showed a comparable pattern of deterioration in mental well-being. These findings strongly suggest that the COVID-19 pandemic and the subsequent lockdown measures had what our abstract terms a "profound negative impact" on the mental health of the individuals we studied.

Our research, therefore, leads us to conclude that even in the absence of direct viral infection, the restrictive environment of a lockdown imposes a substantial psychological burden. This aligns with broader academic discourse, such as the work by Yang Cao et al. (2020) on lifestyle and stressful impacts in Shanghai, and Stanton R et al. (2020) who found associations between COVID-19 restrictions and increased depression, anxiety, and stress in Australian adults. Consequently, we believe our findings underscore the critical importance of integrating robust mental health support strategies and proactive wellness interventions when implementing widespread public health measures that involve significant societal disruption and isolation.

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