



Impact of Covid-19 on Fear, Stress, Anxiety, and Depression among Undergraduate Students: A Study of Mental Health Indicators

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ABSTRACT: This study investigates the mental health status of undergraduate students during the COVID-19 pandemic, focusing on levels of fear, stress, anxiety, and depression across various demographic factors, including gender, age, marital status, academic year, family income, and family structure. Utilizing survey data from 94 respondents, the findings reveal significant disparities in mental health outcomes. Female students exhibited higher levels of anxiety and depression compared to their male counterparts, while the 20 to 25 age group reported the highest levels of stress. Unmarried students demonstrated greater vulnerability to mental health challenges, with a substantial proportion experiencing moderate to high levels of anxiety and depression. Additionally, second-year students faced notable pressures, indicating that academic progression may correlate with increased mental health issues. Family income showed mixed results, suggesting that financial stability does not always lead to better mental health. The majority of respondents from nuclear families reported lower levels of mental health issues, highlighting the importance of familial support. These findings underscore the need for targeted mental health interventions within educational institutions, emphasizing the necessity of addressing demographic factors to effectively support student well-being during ongoing and future crises.

Keywords: Mental health, COVID-19, Undergraduate students, Anxiety, Depression.

INTRODUCTION

The emergence of COVID-19 in December 2019 and its global spread profoundly disrupted daily life, particularly for college students (Muralidar *et al.*, 2020). In India, the pandemic led to the closure of educational institutions in March 2020, forcing students into an abrupt transition to virtual learning. This shift removed the structured environment of traditional education, leading to heightened levels of fear, stress, anxiety, and depression (Sahu, 2020). The pervasive sense of fear among students was driven by concerns for their health and that of their families, compounded by uncertainties surrounding the virus's implications for daily life and employment (Sahu *et al.*, 2021; Pandya *et al.*, 2022). Many students relocated to their hometowns, often in less conducive learning environments, further amplifying feelings of instability. The transition to online learning introduced significant stressors. The loss of structured routines, combined with the pressure to adapt to technology-based education, created a stressful environment (Chaudhary *et al.*, 2021). Students reported isolation due to strict lockdown measures, exacerbating academic pressures and personal relationships, leading to fatigue and decreased performance (Arshad *et al.*, 2020). Anxiety surged, with triggers including the challenges of adapting to online learning and uncertainties about the future (Batra

et al., 2021). The mental health implications extended into clinical depression, characterized by persistent sadness and loss of interest in activities (Abdulla *et al.*, 2021). The combination of isolation and academic pressures contributed to increased depression rates, with symptoms such as chronic pain and difficulty concentrating complicating coping efforts (Husain *et al.*, 2021). Poor eating habits and financial worries further created a toxic environment for mental health (Verma, 2020).

Factors influencing mental health included personal attributes like childhood experiences and personality traits (Nehir & Gungor 2021), family structure, and emotional support (Ahmad *et al.*, 2020). External pressures, including employment and financial instability, also played significant roles (Singh *et al.*, 2022). The pandemic highlighted the need for effective coping strategies and support systems, as external demands intensified feelings of anxiety and stress (Choudhury *et al.*, 2021). Understanding these challenges is essential for developing targeted interventions and support systems to help students navigate this difficult period. Prioritizing mental health and well-being will be crucial for fostering resilience and ensuring academic success as educational institutions adapt to ongoing changes.

LITERATURE REVIEW

Banerjee *et al.* (2020) found that 68.8% of Indian college students reported high levels of fear related to the virus, often linked to familial contexts, as illness among family members increased anxiety and depressive symptoms. Auerbach *et al.* (2018) emphasized the pandemic's impact on the mental well-being of young people. Stress levels among students have been exacerbated by uncertainties regarding health, education, and future prospects. Mahapatra & Sharma (2020) noted heightened anxiety related to education and the pandemic. A study by Aljaberi *et al.* (2022) involving Chinese college students revealed that 45% experienced mental health issues, with low perceived social support correlating with anxiety and depression. Hamel *et al.* (2020) reported over half of Americans were concerned about the pandemic's negative impact on their mental well-being. Anxiety was closely linked to external stressors, including family illness and media exposure, contributing to increased anxiety and externalizing problems (Temple *et al.*, 2022). Depression has been a significant concern, particularly for adolescents facing social isolation and academic difficulties. Nearchou *et al.* (2020) illustrated the pandemic's toll on youth mental health, revealing a substantial portion of young people reported feeling depressed or disinterested in daily activities. Findings from Yang *et al.* (2020) underscored the need for support systems, as vulnerable groups reported a significant decline in overall happiness during the pandemic.

RATIONALE OF THE STUDY

The COVID-19 pandemic has profoundly impacted students, leading to significant psychological challenges. Factors such as gender, age, marital status, year of graduation, type of university, area of study, family monthly income, and family structure all play a role in influencing undergraduate students' experiences of fear related to COVID-19, as well as their levels of fear, stress, anxiety, and depression during this unprecedented time. The researcher has observed firsthand how students have become victims of the pandemic's effects, which has motivated the decision to carry out this study.

SIGNIFICANCE OF THE STUDY

COVID-19 has significantly disrupted various sectors, including education, healthcare, agriculture, and global logistics. For students, the impact has extended beyond academics to encompass health, fear, stress, anxiety, depression, and overall well-being. These challenges have highlighted critical issues related to students' mental health, academic performance, and coping mechanisms. Despite some existing studies internationally, there is a notable scarcity of research focused on undergraduate students in India. This study aims to fill that gap by conducting a thorough literature review and identifying specific areas that require further exploration. The findings of this study hold potential significance for various stakeholders, including educationists, researchers, psychologists, counselors, sociologists, policymakers, and teachers.

By understanding the psychological challenges faced by students during the pandemic, these individuals can develop strategies and interventions to help students overcome these issues, ultimately enhancing their mental health and academic success.

OBJECTIVES OF THE STUDY

To assess the level of fear among undergraduate students during the COVID-19 pandemic in relation to their demographic characteristics.

To evaluate the level of stress among undergraduate students during the COVID-19 pandemic concerning their demographic characteristics.

To analyze the level of anxiety experienced by undergraduate students during the COVID-19 pandemic in relation to their demographic characteristics.

To examine the level of depression among undergraduate students during the COVID-19 pandemic with respect to their demographic characteristics.

RESEARCH METHODOLOGY

The study employed a descriptive research design, which was suitable for examining the characteristics of a population. A survey research method was utilized to gather data, using a self-developed Google Form questionnaire. This approach facilitated direct engagement with respondents regarding the impact of COVID-19 on fear, stress, anxiety and depression among undergraduate students in Delhi, allowing for the collection of relevant data in an accessible format. The questionnaire was crafted after a thorough literature review on topics such as fear, stress, anxiety and depression. Validation was conducted with ten experts, and a pilot study helped refine the tool. The Google Form questionnaire was distributed to undergraduate students, enabling the collection of unique primary data. The researcher established connections with college administrators to gather email addresses and phone numbers for outreach. Responses were recorded in Google Sheets and subsequently analyzed using Excel and SPSS software, ensuring rigorous data handling and analysis. Convenience sampling was employed, which is a non-probability method that selected participants based on their availability. The study's sample consisted of 94 undergraduate students, with a gender distribution of 36 males (38.30%) and 58 females (61.70%). In terms of age, the majority of respondents fell within the 20 to 25 years range, comprising 53 students (56.40%). Additionally, 21 students (22.30%) were below 20 years old, while 20 students (21.30%) were 25 years and older. Regarding marital status, a significant majority of participants were unmarried, with 86 students (91.50%) identifying as such, while only 8 students (8.50%) were married. The sample included students from various years of study, with 12.80% in their first year, 36.20% in their second year, 25.50% in their third year, and another 25.50% in their fourth year. Family income (monthly) also varied, with 39 students (41.50%) reporting a monthly income above ₹70,000, making this the largest income category. Other income brackets included 11 students (11.70%) below ₹20,000,

23 students (24.50%) earning between ₹20,000 and ₹50,000, and 21 students (22.30%) in the ₹50,000 to ₹70,000 range. Lastly, the family structure of respondents showed that 60 students (63.80%) came from nuclear families, while 29 students (30.90%) belonged to joint families, and 5 students (5.30%) were from extended families. Descriptive statistics were used to determine the levels of measuring variables.

RESULTS AND DISCUSSION

Table 1: Level of Fear among Undergraduate Students during COVID 19 pandemic.

| Factor | Low Level Count (%) | Moderate Level Count (%) | High Level Count (%) |
|-------------------------|---------------------|--------------------------|----------------------|
| Gender | | | |
| Male | 8 (22.9%) | 16 (40.0%) | 12 (63.2%) |
| Female | 27 (77.1%) | 24 (60.0%) | 7 (36.8%) |
| Age | | | |
| Below 20 years | 7 (20.0%) | 10 (25.0%) | 4 (21.1%) |
| 20 to 25 years | 19 (54.3%) | 23 (57.5%) | 11 (57.9%) |
| 25 years & above | 9 (25.7%) | 7 (17.5%) | 4 (21.1%) |
| Marital Status | | | |
| Married | 5 (14.3%) | 2 (5.0%) | 1 (5.3%) |
| Unmarried | 30 (85.7%) | 38 (95.0%) | 18 (94.7%) |
| Graduation Year | | | |
| First Year | 2 (5.7%) | 9 (22.5%) | 1 (5.3%) |
| Second Year | 12 (34.3%) | 15 (37.5%) | 7 (36.8%) |
| Third Year | 12 (34.3%) | 6 (15.0%) | 6 (31.6%) |
| Fourth Year | 9 (25.7%) | 10 (25.0%) | 5 (26.3%) |
| Family Income | | | |
| Below 20K | 4 (11.4%) | 4 (10.0%) | 3 (15.8%) |
| 20K to 50K | 11 (31.4%) | 10 (25.0%) | 2 (10.5%) |
| 50K to 70K | 8 (22.9%) | 9 (22.5%) | 4 (21.1%) |
| Above 70K | 12 (34.3%) | 17 (42.5%) | 10 (52.6%) |
| Family Structure | | | |
| Nuclear | 21 (60.0%) | 27 (67.5%) | 12 (63.2%) |
| Joint | 13 (37.1%) | 10 (25.0%) | 6 (31.6%) |
| Extended | 1 (2.9%) | 3 (7.5%) | 1 (5.3%) |

The data from Table 1 highlights significant disparities in mental health among male and female respondents. Males reported 22.9% low, 40.0% moderate, and 33.3% high mental health indicators, while females showed 77.1% low, 60.0% moderate, and only 36.8% high. This indicates that while more males reported high mental health issues, females had a greater prevalence in the low and moderate categories, aligning with Auerbach *et al.* (2018). The age group of 20 to 25 years represented the highest proportions across all mental health levels, with 54.3% low, 57.5% moderate, and 57.9% high. In contrast, younger respondents (under 20) and those over 25 exhibited lower high counts, suggesting greater mental health challenges among 20 to 25-year-olds, consistent with Lee *et al.* (2020). Unmarried respondents reported significantly higher low (85.7%)

and moderate (95.0%) levels compared to married individuals. Second-year students had the highest mental health indicator counts (34.3% low, 37.5% moderate, 36.8% high), indicating increased stress as they progressed in their studies. Income also correlated with mental health; students from families earning above ₹70,000 reported the highest high counts (52.6%), while those earning below ₹20,000 had lower representations across all categories, in line with Yang *et al.* (2020) findings. Most respondents came from nuclear families (60.0% low mental health indicators), suggesting that the support systems in these family structures may mitigate mental health challenges (HMM, 2020).

Table 2: Level of Stress among Undergraduate Students during COVID 19 pandemic.

| Factor | Low Level Count (%) | Moderate Level Count (%) | High Level Count (%) |
|-------------------------|---------------------|--------------------------|----------------------|
| Gender | | | |
| Male | 10 (25.0%) | 17 (41.5%) | 9 (69.2%) |
| Female | 30 (75.0%) | 24 (58.5%) | 4 (30.8%) |
| Age | | | |
| Below 20 yrs | 9 (22.5%) | 10 (24.4%) | 2 (15.4%) |
| 20 to 25 yrs | 26 (65.0%) | 17 (41.5%) | 10 (76.9%) |
| 25 yrs& above | 5 (12.5%) | 14 (34.1%) | 1 (7.7%) |
| Marital Status | | | |
| Married | 4 (10.0%) | 3 (7.3%) | 1 (7.7%) |
| Unmarried | 36 (90.0%) | 38 (92.7%) | 12 (92.3%) |
| Graduation Year | | | |
| First Year | 5 (12.5%) | 5 (12.2%) | 2 (15.4%) |
| Second Year | 15 (37.5%) | 14 (34.1%) | 5 (38.5%) |
| Third Year | 10 (25.0%) | 11 (26.8%) | 3 (23.1%) |
| Fourth Year | 10 (25.0%) | 11 (26.8%) | 3 (23.1%) |
| Family Income | | | |
| Below 20K | 7 (17.5%) | 2 (4.9%) | 2 (15.4%) |
| 20K to 50K | 15 (37.5%) | 6 (14.6%) | 2 (15.4%) |
| 50K to 70K | 7 (17.5%) | 9 (22.0%) | 5 (38.5%) |
| Above 70K | 11 (27.5%) | 24 (58.5%) | 4 (30.8%) |
| Family Structure | | | |
| Nuclear | 26 (65.0%) | 27 (65.9%) | 7 (53.8%) |
| Joint | 12 (30.0%) | 13 (31.7%) | 4 (30.8%) |
| Extended | 2 (5.0%) | 1 (2.4%) | 2 (15.4%) |

The data from Table 2 reveals significant variations in stress levels among undergraduate students based on demographic factors during the pandemic. Female respondents reported higher levels of low stress (75.0%) compared to males (25.0%), but a greater percentage of males fell into the high stress category (69.2%) compared to females (30.8%). The age group of 20 to 25 years exhibited the highest stress levels, with 76.9% classified as high stress, indicating that this age group was particularly affected during the pandemic. Unmarried students consistently reported elevated stress levels across all categories, with 90.0% experiencing low stress, highlighting their vulnerability. In terms of academic year, second-year students demonstrated the most significant stress levels, particularly at the high level (38.5%). Regarding family

income, students from families earning above ₹70,000 had a notable percentage in the moderate category (58.5%), suggesting that financial stability may influence stress levels (Yang *et al.*, 2020). Finally, the majority of respondents came from nuclear families, with 65.0% reporting low stress, which may reflect the supportive environment of nuclear family structures during times of crisis (HMM, 2020). Overall, these findings underscore the multifaceted nature of stress among students during the pandemic, influenced by gender, age, marital status, academic progression, income, and family dynamics.

Table 3: Level of Anxiety among Undergraduate Students during COVID 19 pandemic.

| Factor | Low Level (%) count | Moderate Level (%) count | High Level (%) count |
|-------------------------|---------------------|--------------------------|----------------------|
| Gender | | | |
| Male | 37.9% (11) | 38.5% (25) | 23.6% (6) |
| Female | 62.1% (18) | 61.5% (40) | 76.4% (20) |
| Age | | | |
| Below 20 years | 27.6% (8) | 20.0% (13) | 15.4% (0) |
| 20 to 25 years | 58.6% (17) | 55.4% (36) | 38.5% (0) |
| 25 years and above | 13.8% (4) | 24.6% (16) | 46.2% (0) |
| Marital Status | | | |
| Married | 6.9% (2) | 9.2% (6) | 0.0% (0) |
| Unmarried | 93.1% (27) | 90.8% (59) | 100.0% (0) |
| Graduation Year | | | |
| First Year | 20.7% (6) | 9.2% (6) | 15.4% (0) |
| Second Year | 31.0% (9) | 38.5% (25) | 23.1% (0) |
| Third Year | 24.1% (7) | 26.2% (17) | 15.4% (0) |
| Fourth Year | 24.1% (7) | 26.2% (17) | 15.4% (0) |
| Family Income | | | |
| Below 20K | 13.8% (4) | 10.8% (7) | 0.0% (0) |
| 20K to 50K | 37.9% (11) | 18.5% (12) | 38.5% (0) |
| 50K to 70K | 17.2% (5) | 24.6% (16) | 15.4% (0) |
| Above 70K | 31.0% (9) | 46.2% (30) | 46.2% (0) |
| Family Structure | | | |
| Nuclear | 69.0% (20) | 61.5% (40) | 76.9% (0) |
| Joint | 20.7% (6) | 35.4% (23) | 23.1% (0) |
| Extended | 10.3% (3) | 3.1% (2) | 0.0% (0) |

The analysis of anxiety levels among undergraduate students during the COVID-19 pandemic reveals significant demographic disparities. Female respondents exhibited notably higher anxiety levels, with 62.1% reporting low anxiety, 61.5% moderate anxiety, and 76.4% high anxiety, compared to their male counterparts, where 37.9% reported low anxiety and 38.5% moderate anxiety. This trend aligns with previous studies highlighting the increased anxiety females often experience during crises (Auerbach *et al.*, 2018). Age also played a critical role, as students aged 20 to 25 demonstrated the highest levels of anxiety, with 58.6% reporting low anxiety and 55.4% moderate

anxiety. Conversely, those below 20 years had lower anxiety levels overall, indicating that older students may feel more pressure and uncertainty during the pandemic (Lee *et al.*, 2020).

Marital status significantly influenced anxiety levels, as unmarried students displayed a stark contrast with 93.1% reporting low anxiety and 90.8% moderate anxiety. Married respondents had notably lower anxiety levels, indicating that relationship status may provide some emotional stability amidst the pandemic's challenges. The findings further revealed that second-year students reported moderate anxiety levels of 38.5%, suggesting they may be experiencing unique pressures as they transition further into their academic journey. In terms of income, students from families earning above ₹70,000 reported higher levels of anxiety, with 46.2% in both moderate and high categories. This suggests that financial stability may not necessarily equate to lower anxiety during such uncertain times. Family structure also impacted anxiety levels, as students from nuclear families reported the highest levels of low anxiety (69.0%), indicating that familial support may mitigate anxiety in stressful periods. In contrast, those from extended families had the lowest representation in anxiety categories, highlighting the potential limitations in support systems within certain family structures. Overall, the data emphasize the need for targeted mental health interventions that consider these demographic factors to effectively support students during the pandemic.

Table 4: Level of Depression among Undergraduate Students during COVID 19 pandemic.

| Factor | Low Level (%) Count | Moderate Level (%) Count | High Level (%) Count |
|-------------------------|---------------------|--------------------------|----------------------|
| Gender | | | |
| Male | 27.0% (10) | 52.6% (20) | 31.6% (6) |
| Female | 73.0% (27) | 47.4% (18) | 68.4% (13) |
| Age | | | |
| Below 20 years | 29.7% (11) | 18.4% (7) | 15.8% (3) |
| 20 to 25 years | 59.5% (22) | 50.0% (19) | 63.2% (12) |
| 25 years and above | 10.8% (4) | 31.6% (12) | 21.1% (4) |
| Marital Status | | | |
| Married | 5.4% (2) | 13.2% (5) | 5.3% (1) |
| Unmarried | 94.6% (35) | 86.8% (33) | 94.7% (18) |
| Graduation Year | | | |
| First Year | 18.9% (7) | 7.9% (3) | 10.5% (2) |
| Second Year | 24.3% (9) | 44.7% (17) | 42.1% (8) |
| Third Year | 21.6% (8) | 26.3% (10) | 31.6% (6) |
| Fourth Year | 35.1% (13) | 21.1% (8) | 15.8% (3) |
| Family Income | | | |
| Below 20K | 16.2% (6) | 10.5% (4) | 5.3% (1) |
| 20K to 50K | 35.1% (13) | 13.2% (5) | 26.3% (5) |
| 50K to 70K | 10.8% (4) | 26.3% (10) | 36.8% (7) |
| Above 70K | 37.8% (14) | 50.0% (19) | 31.6% (6) |
| Family Structure | | | |
| Nuclear | 59.5% (22) | 65.8% (25) | 68.4% (13) |
| Joint | 37.8% (14) | 26.3% (10) | 26.3% (5) |
| Extended | 2.7% (1) | 7.9% (3) | 5.3% (1) |

The analysis of depression levels among undergraduate students during the COVID-19 pandemic reveals notable demographic differences. Female respondents experienced higher levels of depression compared to males, with 73.0% reporting low depression levels, while 68.4% reported high levels. In contrast, 27.0% of males reported low levels, and 31.6% reported high levels of depression, underscoring the greater impact of the pandemic on female mental health (Auerbach *et al.*, 2018). Age-related findings showed that students aged 20 to 25 had the highest prevalence of moderate (50.0%) and high depression levels (63.2%). This trend aligns with previous studies indicating that this age group is particularly vulnerable during crises (Lee *et al.*, 2020). In contrast, those below 20 years reported lower levels of depression overall, suggesting that younger students may be less affected by the pandemic's challenges. Marital status significantly influenced depression levels, as unmarried students exhibited higher rates of both moderate (86.8%) and high depression (94.7%) compared to married individuals, who reported much lower rates (Zhao *et al.*, 2022). This finding indicates that unmarried students may lack essential emotional support during such turbulent times.

The data indicated that second-year students faced notable challenges, with 44.7% reporting moderate depression and 42.1% high levels. This suggests that as students' progress through their academic careers, they may encounter increasing pressures that contribute to their mental health struggles (Yang *et al.*, 2020). Family income also correlated with depression levels; students from families earning above ₹70,000 reported higher rates of moderate (50.0%) and high depression (31.6%) compared to those from lower-income brackets. This paradox may suggest that even financial stability does not fully protect against mental health issues during periods of widespread uncertainty. Finally, students from nuclear families showed a greater prevalence of low depression levels (59.5%) compared to those from joint and extended families, indicating that the support systems inherent in nuclear family structures may mitigate feelings of depression during stressful times (HMM, 2020). Overall, the data highlights the need for targeted interventions that address these demographic factors to support student mental health during the ongoing pandemic.

CONCLUSIONS

The study revealed significant disparities in mental health outcomes among students during the COVID-19 pandemic, highlighting that female students reported higher levels of anxiety and depression, while male students tended to experience greater stress. Students aged 20 to 25, particularly those in their second year of study, were identified as particularly vulnerable, necessitating targeted mental health interventions. Furthermore, unmarried students consistently showed higher levels of stress, anxiety, and depression, indicating the crucial role of emotional support networks during this challenging period. Additionally,

the research underscored the influence of family structure and income levels on mental health. Students from nuclear families and those with higher incomes reported lower levels of anxiety and depression, suggesting that familial support and financial stability significantly contributed to mental well-being. Overall, the findings emphasized the need for gender-sensitive, inclusive mental health strategies that addressed the unique challenges faced by students, fostering supportive environments to promote their emotional health during times of crisis.

RECOMMENDATIONS

Universities should establish tailored mental health programs and workshops focusing on stress management, emotional resilience, and coping strategies, particularly aimed at vulnerable groups such as female students and those in their second year. Increase the availability and accessibility of counseling services on campus, ensuring that students have easy access to mental health professionals who can provide support during the pandemic and beyond. Encourage the formation of peer support groups that foster connections among students, allowing them to share experiences and provide mutual support, particularly for unmarried students who may lack emotional support. Conduct awareness campaigns to destigmatize mental health issues and promote resources available for students, ensuring they understand the importance of seeking help when needed. Develop flexible academic policies, such as adjusted deadlines and options for remote learning, to reduce stress for students facing mental health challenges due to the pandemic. Provide financial assistance programs or scholarships for students from lower-income families to alleviate financial stress and its associated impact on mental health, thereby fostering a more supportive academic environment.

FUTURE SCOPE

Future research may investigate the lasting mental health impacts of the COVID-19 pandemic on students, particularly regarding fear, stress, anxiety, and depression across various demographics. Exploring the effectiveness of targeted interventions designed to tackle these issues in different student groups could yield important insights for enhancing mental health support systems. Furthermore, studies could assess how online learning environments influence students' experiences with fear, stress, anxiety, and depression.

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Conflict of Interest. None.

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