

REVIEW ARTICLE

Psychiatric State of Mind Among College Going Students in India: a Scoping and Systematic Review

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Abstract

The prevalence of mental health problems among university-going students exponentially rose during the last few years in India. Psychological distress among college-going students has been reported in many studies. Mental health problems such as depression, anxiety, stress, addictions, and risk for suicide have been reported. However, there is no scoping and systematic review quantified with reviewing overall psychiatric state of mind among students in India. The purpose of this scoping and systematic review was to identify the psychiatric state of mind among college-going students in India. The investigator searched major databases such as Google Scholar, PubMed, PsycINFO, Scopus, and ISI Proceeding articles from the year of 2012 to August 2022 and conducted a detailed review based on the selection criteria. The results revealed that the majority of the studies included in the review were descriptive and mainly studied depression, anxiety disorders, stress, suicidal thoughts, and substance use disorders among undergraduate university students. Significant predictors of mental distress among college students included academic stress, lack of social support, and current drug use. This review suggests that university students may encounter a variety of mental disorders that affect their academic performance. The limited evidence does not allow conclusions to be drawn. Further multicentric research is required in India to quantify psychiatric state of mind. So, collaborative, multidimensional, and culturally sensitive preventive mental health programs can be developed for the students to promote their psychosocial well-being and improve their overall quality of life.

Keywords

Addiction, Anxiety, Depression, Stress, Suicide, Students.

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INTRODUCTION

College or university years are a period that is characterized by transition from preadult to adulthood, period of turmoil, adjusting to the new condition, separation from parental supervision, independence, and countering new things throughout everyday life (Johnson, 2012). There is intense academic pressure and they are commonly associated with escalations in a range of health risk behaviors including alcohol, tobacco, and illicit drug use (Robinson *et al.*, 2016). Entering college or university life is a crucial time for a young adult as this time he/she might face different mental health issues and mental health

crises. It is very important to identify these stressors for early prevention and promotion of the mental health of these populations (Mayangsari *et al.*, 2020). Compared to the general population, university students on average have increased mental health problems such as depression, anxiety, suicidal thoughts, psychosis, addictions, the risk for suicide, use of psychiatric drugs, and other chronic psychiatric disorders (Aldiatat *et al.*, 2014).

In recent years, mental health issues such as depression, anxiety, stress, addiction, and suicidal ideation among college students are growing in prevalence and severity

(Blanco *et al.*, 2018). The prevalence of mental health problems among university students exponentially rose during the last 10 years (Benton *et al.*, 2008). Depression is the most commonly diagnosed mental illness among university students in several countries, including India, Spain, England, Australia, and the United States (Duffy *et al.*, 2019). Miller and Chung found that 43.2% of university students had such severe depressive symptoms that functioning within the academic setting was a challenge. Different studies highlight that the prevalence of depression and anxiety symptoms among undergraduate students was high worldwide (Rotenstein *et al.*, 2016; Quek *et al.*, 2019). Psychological distress was identified as the most prevalent mental health problem for university students (Benton *et al.*, 2008). There is evidence that there are factors present within academic institutions that are negatively influencing the mental well-being of university students. According to the Anxiety and Depression Association of America, anxiety disorder is widely prevalent and one of the most common types of mental health problems among college students (Gibbons *et al.*, 2019).

Substance use among undergraduate university students has been an important consideration worldwide (Pérez-Pazos *et al.*, 2015). Such substance abuse may eventually result in the emergence of substance use disorders (Candido *et al.*, 2018). Excessive substance use among undergraduate university students can lead to the professional detriment (Bahji *et al.*, 2021). The literature on substance use among university students from India has expanded considerably in the last 10 years (Brar *et al.*, 2020). Hence, a synthesis of the literature on psychiatric morbidity among undergraduate university students is of relevance (Behere *et al.*, 2021). This can help in understanding psychiatric morbidity so that targeted interventions can be planned for undergraduate university students in India.

Suicide was the tenth leading cause of death in India across all age groups and the second leading cause of death among undergraduate students (Yang *et al.*, 2015). Despite suicide being a leading cause of death for those between 15 and 29 years of age globally, lower rates of suicide have been observed in tertiary students compared with their nontertiary educated peers of the same age, and higher rates of suicidal ideation and attempted suicide have been reported in undergraduate university students as compared with age-matched members of the general population (Beiter *et al.*, 2015). In one of the meta-analyses, almost one-third (27.2%) of university students reported depression or symptoms of depression and around one in 10 reported suicidal ideation (Eskin *et al.*, 2016). Various research studies have suggested that the incidence of signs of anxiety and depressive illnesses as well as suicide thoughts among university students may be rising (Colucci and Lester, 2020; Cherian *et al.*, 2022).

The purpose of this systematic review was to reduce psychiatric morbidity, which may be in the form of depression, anxiety disorders, stress, suicidal thoughts, and substance use disorders. The first most things that should be done are to determine the planning for effective interventions. It is significant to know the studies that have been conducted to determine to check psychiatric morbidity, specifically mental illness among undergraduate university students. Hence, this systematic review was conducted to specify studies that were conducted with undergraduate university students having depression, anxiety disorders, stress, suicidal thoughts, and substance use disorders in India and also to determine the factors that affect it, and also to determine the kind of studies that are needed in this sector. Hence, the present scoping and systematic review aimed to provide a detailed view of psychiatric state of mind among undergraduate college students in India.

MATERIALS AND METHODS

Research design

In the present systematic review, the researcher followed guidelines on the methodology of reviews (Roe *et al.*, 2007), as well as Cochrane Handbook guidelines (Higgins *et al.*, 2019).

Search strategy and selection criteria

The present systematic review used electronic databases viz., Google Scholar, PubMed, PsychINFO, Scopus-Elsevier, ISI Proceedings, Cochrane Central Register of Controlled Trails, CTRI registry in India, and Shodhganga, which were searched with a time limit between 2012 and August 2022 as well as were limited to English language only. The search terms in databases were psychiatric morbidity, university students, depression, anxiety, stress, addiction, and suicide. The combination of seven keywords was used as a searching strategy in this review article. Furthermore, all the articles that fulfilled the inclusion criteria were examined and reviewed.

Study inclusion and exclusion criteria

The present study has been followed carefully about the following inclusion criteria: (a) have published between 2012 and August 2022, (b) has been published in English, (c) participants must be university or college-going students who have psychiatric morbidity in the age range of 18–25 years, and (d) quantitative studies, descriptive, and observational study design (prospective or retrospective cohort study, cross-sectional study). The following exclusion criteria have been adopted in this study: (a) unrelated research works, (b) studies without sufficient data, (c) duplicate sources, (d) pieces of research with unclear methods, (e) interventional studies, (f) case reports, and (g) articles that their full text was not accessible.

Data extraction

The studies that fulfilled the inclusion and exclusion criteria were assessed in detail. Information that was extracted from the records included the author and year of the study, sample size and sampling method, and the method/definition of depression, anxiety, stress, addiction, and suicide. In case the study reported several variables of interest, then the prevalence rate according to all the assessment methods was recorded. Clarifications and doubts if any were sorted out by mutual discussion with other coauthors.

Search results

While entering the keywords into databases, 202 studies were found, and the selected articles were reviewed in two phases. In the first phase, the researcher reviewed the abstract of articles and removed the articles that did not match the inclusion criteria. At the end of the first phase, the researcher finalized 77 studies. Additionally, in the second phase, the researcher studied the complete texts of the chosen articles, and those that once again did not fit the inclusion requirements were eliminated. Hence, finally, 39 articles only met the required criteria.

Flow chart

A total of 39 research studies were included in the review. Among them, 14 studies reported depression, 11 studies reported anxiety and stress, 10 studies reported substance addiction, and four reported suicidal ideation among undergraduate university students in India. Generally, the sample comprised both male and female students in all of the studies. A total of 36 studies were excluded, of which 13 studies were excluded because of not meeting the eligibility criteria; eight studies were excluded because they were conferences abstracts, review reports, letters to editors, and presentations; five studies were not relevant; six studies were excluded because the study was published before the year 2012; and four studies were repeated in more than two studies.

A total of 14 studies were identified that reported depression among undergraduate university students in India. The sample sizes of the studies varied from 100 to 781. The most common instrument used was the Beck Depression Inventory (Devi *et al.*, 2013; Kumar *et al.*, 2013; Prabhu and Prakash, 2018), followed by other rating scales including the Primary Health Questionnaire (Sidana *et al.*, 2014; Sarkar *et al.*, 2020; Shamsuddin *et al.*, 2021), Depression Anxiety Stress Scale (Dawood and Hashmi, 2018; Hassan *et al.*, 2021), Quick Inventory of Depressive Symptomatology (Baste and Gadkari, 2014), Hamilton Depression Rating Scale (Verma *et al.*, 2016; Jamshidi *et al.*, 2022), and Kutcher Adolescent Depression Scale (Venkatesh *et al.*, 2017).

A total of 11 studies were identified that reported anxiety and stress among undergraduate university students

in India, of which four studies evaluated anxiety symptoms and seven studies reported stress among undergraduate university students. The instruments utilized included Hamilton Anxiety Scale (Bassi *et al.*, 2014), Depression Anxiety Stress Scale (Singh and Ishtaq, 2015; Sivan *et al.*, 2016; Sharma *et al.*, 2019), and Generalized Anxiety Disorder Scale (Chandavarkar *et al.*, 2017). However, many of the studies used General Health Questionnaire (Nandi *et al.*, 2014; Mehta *et al.*, 2016), Depression Anxiety Stress Scale (Singh and Ishtaq, 2015; Sivan *et al.*, 2016; Samaranayake and Fernando, 2019; Sharma *et al.*, 2019), Professional Life Stress proforma (Iqbal *et al.*, 2019), Stress Management Questionnaire (Gupta *et al.*, 2022), and Zung Scale for Stress (Kulkarni *et al.*, 2021). The sample sizes of the studies varied from 113 to 477.

Ten studies had reported substance addiction among university students in India. The sample sizes of the studies varied from 200 to 1300. The instruments utilized included AUDIT (Inderjit *et al.*, 2015; Tiwari *et al.*, 2018; Verenkar and Vaz, 2018; Baba *et al.*, 2019), predesigned questionnaire (Anuradha *et al.*, 2021), Modified WHO questionnaire (Datta *et al.*, 2015; Halder *et al.*, 2021), pretested and prevalidated questionnaire (Sharma and Bhattacharjee, 2021; Mohan *et al.*, 2021), and daily use of tobacco, alcohol, or other drugs (Pattnaik *et al.*, 2020). A total of four studies identified those who reported suicidal thoughts or ideations. Some questionnaires had been utilized to assess suicide like Functional Assessment of Self-Mutilation (Kharsati and Bhola, 2015), Modified Scale for Suicidal Ideation (Cherian *et al.*, 2022), Beck's Suicide Intent Scale (Bathla *et al.*, 2021), and Adult Suicidal Inventory (Banerjee and Chatterjee, 2019). The sample size varied from 258 to 890 respondents (Tables 1–4).

DISCUSSION

According to the WHO, in 2015, the prevalence of anxiety and depression in the world population was estimated at 3.6 and 4.4%, respectively (World Health Organization, 2017). Therefore, it was suggested that anxiety and depression disorders affect a much higher percentage of the university population than the general one. The present systematic and scoping review suggests that depression affects roughly 32% of undergraduate university students; academic factors and certain sociodemographic and family-related factors were significantly associated with depression (Sahu *et al.*, 2013). Female students were more likely to be affected by depression as compared with male students (Dawood and Hashmi, 2018; Sarkar *et al.*, 2020). Depression was significantly more among those with family or relationship problems and students put in the hostel; moreover, the year of study and academic performance of students had a statistically significant association with depression (Devi *et al.*, 2013).

Table 1: Research studies related to depression among undergraduate university students in India (N= 14):

References	Aim of the study	Sample size and method	Instrument	Conclusion
Kumar <i>et al.</i> , (2013)	To assess the prevalence of depression and its associated factors among students	400, stratified random sampling	Beck Depression Inventory	Depression is extremely prevalent and prevalence was significantly more among those who have a family history of depression
Devi <i>et al.</i> , (2013)	To examine the prevalence of depression among college students	235, stratified random	Beck Depression Inventory	The prevalence of depression was significantly more among those with family problems
Baste and Gadkari (2014)	To assess stress, predominant stressor and the effect of music on perceived stress	290, random sampling	Depressive symptomatology	The medical curriculum is associated with increased stress in students of India
Sidana <i>et al.</i> , (2014)	To find the prevalence of depression in medical students and its various psychosocial factors	237, stratified random	PHQ-9	Academic performance of students had a statistically significant association with depression
Verma <i>et al.</i> , (2016)	To check the predictors of depression among first-year undergraduate students	100, convenience	Hamilton Depression Rating Scale	The results shows that the predictor of depression are past history of depression, and family history of mental disease
Venkatesh <i>et al.</i> , (2017)	To study the prevalence of depression among adolescent medical students	215, convenience	Kutcher Adolescent Depression Scale	Out of 215 students, 30 were identified as depressed and they also had other co-existing psychological symptoms
Dawood and Hashmi (2018)	To determine the prevalence of depression and to determine the sleep-wake pattern among students	128, convenience	Depression Anxiety Stress Scale	Depression was higher among females compared to males. Users of social networking websites had a slightly greater rate of depression
Prabhu and Prakash (2018)	To check the prevalence of depressive symptoms and its associated factors among students	400, convenience	Beck Depression Inventory	The prevalence of depression is quite high in students of Private medical college
Sahu <i>et al.</i> , (2013)	To assess the prevalence of depression and to study contributing risk factors for depression	421, convenience	University Student Depression Inventory	About one-fourth of university students were suffering from mild depression
Amritha <i>et al.</i> , (2020)	To assess the burden of stressors and their correlation with anxiety and depression	400, stratified random sampling	Hospital Anxiety Depression Scale	No significant difference between boys and girls with anxiety or depression. Significant correlation between stressors and the Hospital Anxiety and Depression Scale has been observed
Sarkar <i>et al.</i> , (2020)	To assess depressive symptoms among students of different semesters and to find out the coping strategies of depression	183, convenience	PHQ-9	The overall depression reported by the respondents was 41.1% of which 15.0% had mild and 26.1% had moderate-severe depression
Hassan <i>et al.</i> , (2021)	To study the prevalence of psychological mood disorders and their association with some factors	442, stratified random sampling	Depression Anxiety Stress Scale	A substantial proportion of medical students are suffering from depression, stress, and anxiety. Ageing, female sex, being overweight are all important co-morbidities
Shamsuddin <i>et al.</i> , (2021)	To determine the correlations between depression, stress, and anxiety among university students and to gauge the prevalence of each	506 stratified random	PHQ-9	The prevalence of anxiety is much higher than either depression or stress, with some differences in their correlates except for age
Jamshidi <i>et al.</i> , (2022)	To study the incidence of mental illnesses and some of their affecting variables among university students	781, convenience	Hamilton Depression Rating Scale (HDRS)	27.9% of students have been suspected of some degree of mental disorders. The act of learning and adjusting to the new environment of university can exacerbate psychiatric illnesses

Table 2: Research studies related to anxiety and stress among undergraduate university students in India (N=11):

References	Aim of the study	Sample size and method	Instrument	Conclusion
Bassi et al., (2014)	To assess the anxiety levels among students and to evaluate a correlation between BMI and anxiety levels	477, purposive	Hamilton Anxiety Scale	Anxiety is present in newly admitted MBBS students varying from mild to severe form. Female students' anxiety levels were much higher
Singh and Ishtaq (2015)	To find the predictors of anxiety and stress among undergraduate students	352, stratified random	Depression Anxiety Stress Scale 42	More than half of the undergraduate students were found to be affected by anxiety and stress
Chandavarkar et al., (2017)	To examines the phenomenology of anxiety symptoms in university students	211, stratified random	Generalized Anxiety Disorder Scale	Anxiety, attentional, and depressive symptoms were highest in third-year undergraduate students
Samaranayake and Fernando (2019)	To assess the satisfaction with life among undergraduate college students and identify associations with depression and anxiety disorders	409, convenience	Depression Anxiety Stress Scales-21-item	The rate of depression and anxiety among undergraduate college students was 16.9%. Female students had high rates of depression and anxiety as compared to male students
Nandi et al., (2014)	To evaluate the level of stress and to identify potential stressors among medical students in India	384, stratified random sampling	General Health Questionnaire	The stress incidence in medical students in India is high and is negatively affecting their mental well-being in the institution
Sivan et al., (2016)	To collate the findings relating to the prevalence of depression, anxiety, and stress among undergraduate students	304, purposive	Depression Anxiety Stress Scale 42	Depression, anxiety, and stress affect a considerable proportion of undergraduate medical students in India
Mehta et al., (2016)	To study the prevalence of mental distress among undergraduate students and to find out the correlation between mental distress	147, simple random sampling	General Health Questionnaire	Mental distress is more in First-year students, in female students as compared to male students, hostellers as compared to day scholars, students of rural background, and students who have repeated attempts in various entrance examinations
Iqbal et al., (2019)	To assess the psychiatric morbidity among undergraduate university students and its psychosocial factors	289, stratified random sampling	Professional Life Stress proforma	More than half of the respondents were affected by depression (49.7%), anxiety (54.3%) and stress (38%). Morbidity was found to be more in First-year students rather than students in 2nd year
Sharma et al., (2019)	To assess stress and its effect on vital parameters during academic examinations in first year students	113, convenience	Depression Anxiety Stress Scale 42	Academic examinations for students are stressful and produce changes in vital parameters which may affect their academic performance. Academics and examinations are the most powerful stressors in undergraduate university students
Kulkarni, et al., (2021)	To assess the mental health status and magnitude of Stress and depression of college going students	354, stratified random sampling	Zung Scale for Stress	Among 354 students included in the study, poor mental health status and anxiety were found in 25.1% and 40.8% of participants
Gupta et al., (2022)	The study was undertaken to quantify the magnitude of various sources of stress among students	211, purposive	Stress Management Questionnaire	The overall prevalence of stress was 91.1% and the vast majority of students 94.9% were stressed due to academic reasons

Table 3: Research studies related to substance abuse among undergraduate university students in India (N=10):

References	Aim of the study	Sample size and method	Instrument	Conclusion
Tiwari <i>et al.</i> , (2018)	To estimate the prevalence of cigarette smoking, alcohol and tobacco consumption among university students	224, random sampling	AUDIT	The prevalence of regular drinkers was 28% only, and of occasional drinkers was 47%. In tobacco users prevalence of regular chewers was more than 40% of occasional chewers
Anuradha <i>et al.</i> , (2021)	To assess lifestyle behavior and addiction problems among undergraduate students in India	200, convenience	Pre-designed questionnaire	The undergraduate students had a high prevalence of risk factors such as poor nutrition, inconsistent eating patterns, and physical inactivity
Datta <i>et al.</i> , (2015)	To estimate the prevalence of substance abuse and to find out some socio-economic factors	800, random sampling	Modified WHO questionnaire	The overall prevalence of substance use was found to be 57%. Tobacco (57.4%) was the most used substance followed by alcohol (27.3%) and cannabis (10.4%). The study showed that substance abuse was common among undergraduate medical students
Inderjit <i>et al.</i> , (2015)	To assess and compare tobacco and alcohol usage among male engineering and medical students in India	230, random sampling	AUDIT	Final year students of medical background and 1 st years students from engineering had more influence on tobacco and alcohol consumption habits
Verenkar and Vaz (2018)	To find out the alcohol prevalence among graduate adolescents and vulnerable to alcohol-related harm	315, random sampling	AUDIT	The prevalence of alcohol consumption was found to be 39.4%. Prevalence among female students was higher (40.6%) compared to male students (38%)
Patmaik <i>et al.</i> , (2020)	This study aims to screen for depression and Alcohol among undergraduate students and to find out the various risk factors	902, convenience	Daily use of tobacco, alcohol, or other drugs	About two third of the students (67.1%) were found to have a certain level of depression and 35% of the students are taking alcohol. Lack of financial or family support, regular use of marijuana, cigarettes, or other illegal drugs, stress from the medical curriculum linked to depression in students
Halidar <i>et al.</i> , (2021)	To find out the sociodemographic profile, prevalence, causes and types of substance abuse among undergraduate students	452, stratified random sampling	Modified WHO questionnaire	Prevalence of substance abuse was found to be 60.26% and it was predominately high among male students (75.09%). Alcohol (77.29%) was found to be the most common abuse followed by cigarettes (76.56%), gutkha (20.51%) and drugs (13.55%)
Mohan <i>et al.</i> , (2021)	To find the prevalence of smoking and its associated factors among undergraduate university students	518, stratified random sampling	Pretested questionnaires	Findings show that 67% of male students and 46% of female students are smoking. A substantial proportion of engineering and medical students continue to smoke
Sharma and Bhattacharjee (2021)	To find out the perception of alcohol intake and to assess the perception of alcohol intake regarding global positive transformation among university students	300, random sampling	Pretested Questionnaire	(61.66%) students' parents do not drink alcohol. Study concludes that undergraduate students are showing alcohol is a powerful agent that makes the global positive transformation
Baba <i>et al.</i> , (2019)	To find out the prevalence and pattern of substance abuse and its association with various socio-cultural and demographic variables	1300, multi-stage sampling procedure	AUDIT	The overall lifetime prevalence of substance abuse among college students was found to be 31.3%. Comparing the prevalence of substance usage among male and female students, it was clear that the former was substantially greater (37.5% against 19.6%, respectively)

Table 4: Research studies related to suicide among undergraduate university students in India (N=04):

References	Aim of the study	Sample size and method	Instrument	Conclusion
Kharsati and Bhola (2015)	To explore the occurrence, methods, characteristics and reported reasons for nonsuicidal self-injurious behavior among college students in India	470, purposive	Functional Assessment of Self-Mutilation (FASM) questionnaire	31.2% of the sample reported nonsuicidal self-injurious behavior in the past year. The most common method was self-hitting (15.2%) followed by cutting or carving skin (13.2%)
Cherian <i>et al.</i> , (2022)	To explore the awareness about suicide support services and preferred service options during a suicide crisis among college-going young adults	890, stratified random sampling	Modified Scale for Suicidal Ideation (MSSI)	Most commonly listed options are supported from family members, peer groups, counseling and psychiatric consultation. It was found that there is a low level of awareness about suicide assistance options among young Indian adults
Bathla <i>et al.</i> , (2021)	To evaluate suicidal intent, anxiety, and depression among undergraduate students and to find out the various areas of stress	258, random sampling	Beck's Suicide Intent Scale (BSI)	Male students are more prone to commit suicide. Nearly all research participants stated having suicidal intent. Diverse academic and non-academic reasons suggest a need for modifying the current education system and creating a stress-free learning environment
Banerjee and Chatterjee (2019)	To explore whether, suicidal ideation and mental well-being differ significantly in terms of first semester and third semester students in India	444, stratified random sampling	Adult Suicidal Inventory	The findings revealed that the students of third semester are more stressed and prone to suicidal ideation than first semester students as well a significant positive correlation exists between academic stress and suicidal thoughts both connected to mental health

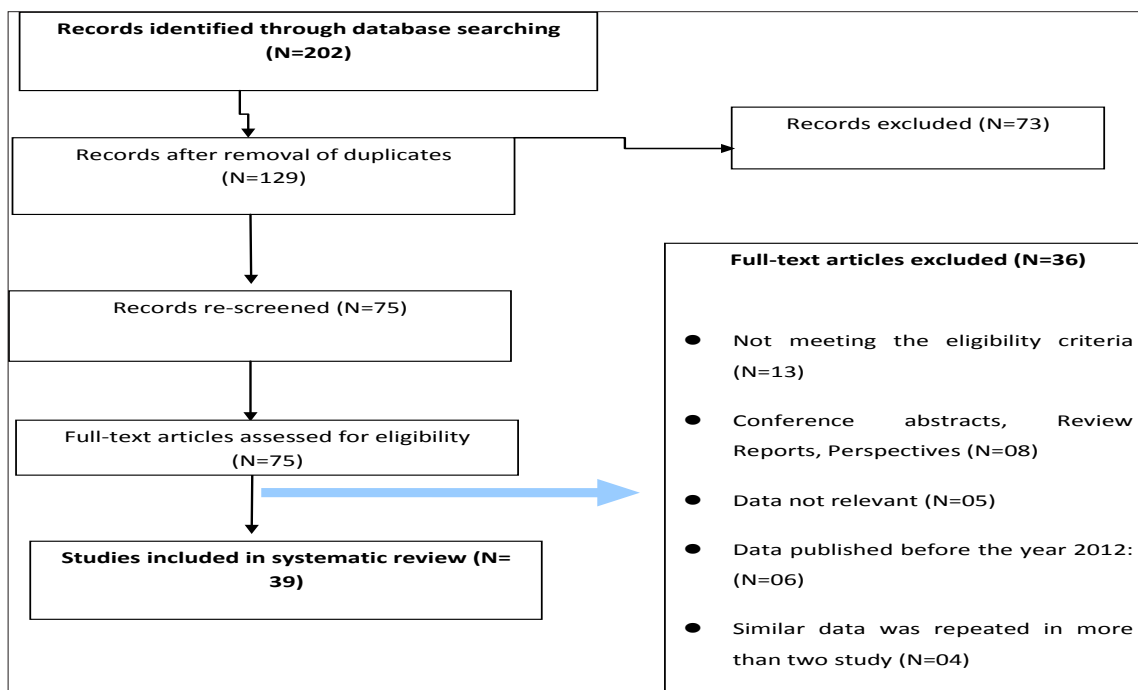


Figure 1: Principles of the preferred reporting items for systematic reviews and flow diagram.

It was also observed that students were reluctant to seek help for depressive symptoms (Sidana *et al.*, 2014). This might be due to various predictors like lack of social interaction, unfamiliar types of examination schedules, a lower grade than anticipated, lack of vacation, love failure or breakup, language problem, family problems, and family history of depression (Kumar *et al.*, 2013; Lloyd-Kendall *et al.*, 2019). The reported rates of depression in the present review among Indian studies varied from 7.3 to 38.5%. Even with Beck Depression Inventory, the most commonly used instrument used for the assessment of depression in Indian studies, the rates of depression ranged from 8.53 to 40.9% (Ibrahim *et al.*, 2022; Dyrbye *et al.*, 2017). Concerning stressful life events, students who had faced one or more stressful life events in the last 6 months were 1.5 times more likely to have depression as compared with those who had not faced stressful life events in the last 6 months; this might be due to the death of close family members/relatives or friends; economic crises, or family problems (Venkatesh *et al.*, 2017).

Anxiety disorders are the most prevalent common psychiatric disorders and affect approximately one-third of undergraduate university students in their lifetime (Bandelow *et al.*, 2015; Wittchen *et al.*, 2015). Together with depression, they are the most reported mental disorders by university students and may significantly affect academic performance (Oswalt *et al.*, 2018). These mental disorders are more common among females than males (Bassi *et al.*, 2014; Samaranyake and Fernando, 2019). Genetic, neurobiological, and psychosocial stressful events have been identified as possible causes of the highest prevalence in females (Bandelow *et al.*, 2018). It is also important to highlight those cultural variables such as familial, religious, geopolitical, and economic (i.e. low, middle, or high-income countries) factors that can influence the development and reporting of mental health symptoms among university students (Hoffman *et al.*, 2019).

The results of this review showed a prevalence of 24.5% for anxiety and 26.1% for depression in university students (Singh and Ishtaq, 2015). The present systematic review suggests that more than half of the students experienced considerable stress. The higher level of psychiatric morbidity anxiety is 41.1% and stress is 27% among undergraduate university students (Kunwar *et al.*, 2021). Stress can be conceptualized in various ways and diversity exists in the manner in which stress has been operationalized. Some amount of stress is adaptive and helps to trigger the hormonal response needed to counter situations that are challenging emotionally and physiologically. A comparison of male and female students suggested that female students were more likely to suffer from depression and stress, as compared with male students (Sivan *et al.*, 2016). This is in line with previous

literature, which suggests that female students have higher rates of symptoms of depression, anxiety, and stress (Nandi *et al.*, 2014). Hostellers as compared with day scholars, students of rural background, and students who have repeated attempts in various entrance examinations are more prone to stress as compared with the students who are coming from their respective homes (Mehta *et al.*, 2016). This comprehensive systematic review found alarmingly high rates of depression, anxiety, and stress. This reflects that medical students are likely to experience a considerable degree of psychiatric morbidity. The genesis of anxiety, depression, and stress among university or college students may be multifactorial (Brahmbhatt *et al.*, 2021). The inability to deal with the huge curriculum; repeated examinations; high demands from parents, teachers, and patients; and time restrictions for pursuing their alternate interests may be contributory. Depression, anxiety, and stress among undergraduate university students are often under-recognized and undertreated (Sivan *et al.*, 2018). The stigma surrounding mental health issues often deters students from seeking any kind of professional help (Menon *et al.*, 2015).

In the present systematic and scoping review, it was found that the overall substance abuse prevalence among undergraduate university students in India is about 26.76%. Alcohol use seemed to be the most common substance use, followed by tobacco, primarily in smoked form (Pattnaik *et al.*, 2020; Haldar *et al.*, 2021). Cannabis use was present in about 11% of the sample (Datta *et al.*, 2015). Family history of alcohol consumption and living in a hostel are two other factors accountable for alcohol use (Adhya *et al.*, 2016). Substance use was generally more common in male students than in females (Verenkar and Vaz, 2018). The most common reason behind starting any kind of addiction was peer pressure and the second reason was the same habit in family and lastly stress and anxiety (Tiwari *et al.*, 2018). Alcohol consumption was to get relief from tensions; first-year students had more influence on tobacco and alcohol consumption habits. Academic demand, work pressure, examination stress, and anxiety were found to significantly influence tobacco and alcohol habits among undergraduate university students in India (Inderjit *et al.*, 2015). Alcohol and tobacco use reported in the present systematic review was higher than in the previous one. The use of substances has multiple consequences for university/college students, and the use of these substances may lead to regular and subsequently problematic use (Baba *et al.*, 2019). The lifetime prevalence of substance abuse among college students was found to be 31.3%. Positive family history of substance use and early age of initiation for tobacco and alcohol were associated with a greater difficulty to quit substance habits (Goel *et al.*, 2020). However, the purpose of substances increases the chances of developing a substance use disorder afterward. Moreover, the use of

substances recreationally may divert away attention from coursework and lead to deficient or failing academic performance. Moreover, substance use by the students may lead to an image of the profession being blemished, though it could be argued that the students are also humans who are equally vulnerable to human iniquities (Sharma and Bhattacharjee, 2021). The prevalence rates were calculated utilizing various approaches, and they may also be a reflection of real variations in the prevalence of drug use among various geographic areas or variations in samples and settings in the present systematic review.

Suicidal ideation is another serious mental disorder affecting undergraduate university students significantly (Eskin *et al.*, 2016). Data from the WHO indicate that suicide was, in 2015, the second leading cause of death in the population between 15 and 29 years old, an age group commonly found in the university population (World Health Organization, 2017). Self-hitting (15.2%) and skin-cutting or skin-carving (13.2%) were the two most popular techniques. The most commonly endorsed reasons for nonsuicidal self-injurious behavior were 'to feel relaxed,' 'to get control of the situation,' 'to make others angry,' and 'to avoid college, work, or other activities' (Kharsati and Bhola, 2015). The risk variables or predictors for suicide thoughts were found to include academic stress, previous experience of abuse, stress resulting from familial demands, and strained relationships with friends and peers (Desai *et al.*, 2021). Male students are more prone to commit suicide (Bathla *et al.*, 2021). Considering that psychiatric disorders, such as anxiety and depression, are strong predisposing factors for suicide (Paula *et al.*, 2020), the high prevalence of these two disorders may be associated with that of suicidal ideation among undergraduate university students found in this review.

STRENGTHS AND LIMITATIONS

The findings of this review need to be considered in light of some strengths and limitations. The strengths include being the first review of this kind from India and using pooled analysis to derive the extent of depression, anxiety disorders, stress, suicidal thoughts, and substance use disorders among undergraduate university students. The limitations include a focus on limited aspects of psychiatric morbidity (i.e. depression, anxiety disorders, stress, suicidal thoughts, and substance use disorders), and other psychiatric morbidities were not included (i.e. eating disorder, personality disorder, and major mental illness). The review did not try sensitivity analysis, and it did not try to figure out prevalence rates based on the study's origin location, or semester. The risk of publication bias and risk of bias for individual studies could also not be assessed. The study has generalizability to the Indian context, and caution needs to be exercised while extrapolating the findings to other countries and other parts of the world.

CONCLUSION

Mental disorders are common disorders that have a significant prevalence among undergraduate university students and are often neglected, especially in developing countries like India. Moreover, the high prevalence of mental disorders in university students found in this review highlights the importance of implementing strategies for prevention, intervention, and diagnosis/treatment of psychiatric disorders in this population. The present review will help the researchers to design a better research methodology and selection of tools in future studies in India on the topic related to psychiatry state of mind among undergraduate university students. There is a need to conduct multicentric studies with the same methodology and using comparable representative samples to assess whether the differences in rates of psychiatric morbidity are artifactual or are indeed present.

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There are no conflicts of interest.

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